BUILDING A SOUTH ASIAN COALITION FOR IMPROVED NUTRITION (SACIN) THROUGH FISCAL AND TRADE POLICIES

Final Report

Submitted by

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EXECUTIVE SUMMARY

Sri Lanka continues to face significant challenges in ensuring that its people have consistent access to affordable, safe and nutritious diets. Rising dependence on food imports, sharp fluctuations in prices and the uneven effectiveness of fiscal and trade policies have placed pressure on both households and the national economy. To address these challenges, this report adopts a dual approach that combines qualitative evidence from community engaged Focus Group Discussions (FGDs) and Key Informant Interviews (KIIs) with quantitative simulations using a Computable General Equilibrium (CGE) model built on the GTAP database. Together, these perspectives provide a more comprehensive understanding of how fiscal and trade policies affect food security and nutrition both from the personal experiences of communities and from the broader economic impacts at the national level.

The quantitative modeling provides a complementary perspective while quantifying how different fiscal and trade policy reforms influence food prices, imports, domestic production of the country and household welfare. The scenarios reveal that tariff removal reduces food prices and generates modest welfare gains but also increases import dependence and places pressure on domestic producers. VAT removal by contrast significantly improves affordability for consumers but at the cost of a sharp contraction in GDP and an overall loss in welfare while indicating the fiscal risks of such a policy. The most beneficial outcome in terms of household welfare arises when tariffs and VAT are removed together but this comes at the expense of weakening local production. The introduction of maximum retail prices (MRPs) creates mixed outcomes offering short-term relief for consumers but introducing potential distortions in market functioning. Overall, the simulations highlight the delicate trade-offs between affordability, economic growth, fiscal stability and domestic production that policymakers must navigate when designing food-related fiscal reforms.

The qualitative analysis highlights how affordability remains the single greatest barrier to achieving healthy and balanced diets in Sri Lanka. Households and adolescents frequently described shifting food choices in response to price volatility often substituting cheaper, calorie-dense options for more nutritious foods. While cultural traditions continue to influence food consumption patterns, these are increasingly overshadowed by economic constraints and the growing appeal of processed and convenience foods. Participants repeatedly emphasized that knowledge of balanced diets was low and that government nutrition-sensitive measures such as school meal programs or traffic light food labeling were either poorly understood or perceived as insufficient to address the real challenges they faced. Communities also underlined their vulnerability to external shocks particularly inflation, climate-related disruptions to local food production and the lack of robust safety nets to protect households from these pressures. These lived experiences underline the social and cultural dimensions of food security that cannot be captured by economic indicators alone.

This report concludes that Sri Lanka's food and nutrition policies must operate on three interlinked horizons. In the short term, policymakers should focus on targeted VAT and tariff adjustments that improve affordability for essential foods without threatening fiscal space. In the medium term, greater investment in domestic production and climate-smart agriculture is essential to reduce the country's dependence on imports and enhance resilience to external shocks. Over the longer term, Sri Lanka must move towards an integrated food policy framework that aligns fiscal, trade and nutrition objectives, ensuring that policies are both economically efficient and socially equitable. Only by combining the lived experiences of households with rigorous economic modeling can policymakers design reforms that truly enhance food security, support healthier diets and safeguard the wellbeing of both communities and the national economy.

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LIST OF ABBREVIATIONS

ADB	Asian Development Bank
ASEAN	Association of South-East Asian Nations
AE	Allocative Efficiency
BIMSTEC	Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation
BIS	Basic Income Support
CAA	Consumer Affairs Authority
CBSL	Central Bank of Sri Lanka
CCPI	Colombo Consumer Price Index
CDE	Constant Difference of Elasticities
CEPA	Centre for Poverty Analysis
CES	Constant Elasticity of Substitution
CFSAM	Crop and Food Security Assessment Mission
CGE	Computable General Equilibrium
DAPH	Department of Animal Production and Health
DCS	Department of Census and Statistics
DMT	Domestic VAT Removal
DOA	Department of Agriculture
EV	Equivalent Variation
FAO	Food and Agriculture Organization
FFPI	FAO Food Price Index
FGD	Focus Group Discussion
FPVI	Food Price Volatility Index
FTA	Free Trade Agreement
GFD	Global Food Dollar
GIEWS	Global Information and Early Warning System
GSP	Generalized System of Preferences
GTAP	Global Trade Analysis Project
HARTI	Hector Kobbekaduwa Agrarian Research and Training Institute
HDDS	Household Dietary Diversity Score
HFSS	High in Fat, Salt and Sugar
IDDS	Individual Dietary Diversity Score
IFPRI	International Food Policy Research Institute
IMF	International Monetary Fund
IMT	Import Tariff Removal
IRD	Inland Revenue Department
IS	Investment Savings
ISFTA	Indo-Sri Lanka Free Trade Agreement
IWMI	International Water Management Institute
KII	Key Informant Interview
LIC	Low Income Country
LMIC	Lower Middle Income Country
MDD-W	Minimum Dietary Diversity Score for Women
M&E	Monitoring and Evaluation
MFN	Most Favoured Nation
MOF	Ministry of Finance
MOH	Ministry of Health

MP	VAT Removal with Maximum Retail Price
MRP	Maximum Retail Price
NCD	Non Communicable Diseases
NIA	Nutrition Impact Assessment
NNP	National Nutrition Policy
NNS	National Nutrition Secretariat
NRPTA	Non Reciprocal Preferential Trade Agreement
NTM	Non Tariff Measures
OFC	Other Field Crop
RCP	Relative Calorie Prices
SAARC	South Asian Association for Regional Cooperation
SACIN	South Asian Coalition for Improved Nutrition
SAFTA	South Asia Free Trade Agreement
SAM	Social Accounting Matrix
SCL	Special Commodity Levy
SIM	Simulation
SPS	Sanitary and Phytosanitary Measures
SSB	Sugar Sweetened Beverages
STEP	Skills Toward Employment and Productivity
TE	Technical Efficiency
TOT	Terms of Trade
UMIC	Upper Middle Income Country
UN	United Nations
UNICEF	United Nations International Children's Emergency Fund
U.S.	United States
USA	United States of America
USD	United States Dollar
USDA	United States Department of Agriculture
VAT	Value Added Tax
WB	World Bank
WFP	World Food Program
WHO	World Health Organization
WTO	World Trade Organization

CHAPTER 1

INTRODUCTION

Chapter 1 introduces the study outlining its purpose, scope and analytical approach in examining the links between fiscal and trade policies and nutrition outcomes in Sri Lanka. It presents the background and rationale situating national nutrition challenges within the South Asian context and highlighting the influence of economic policies on food systems, diets and health. The objectives and research questions are defined to guide both qualitative and quantitative analyses while the scope and conceptual framework specify the thematic and demographic dimensions of the study including fiscal, trade, nutrition, gender, equity and welfare considerations. The methodology is described integrating community-based qualitative research, secondary data analysis and economy-wide simulations. Finally, the chapter outlines the deliverables detailing the series of reports from inception to final report and policy brief that will synthesize findings and support evidence-based, nutrition-sensitive policy recommendations at national and regional levels.

1.1. Background and Rationale

The South Asian Coalition for Improved Nutrition (SACIN) is a collaborative regional initiative aimed at strengthening the evidence base and promoting policy coherence across South Asia to improve nutrition outcomes. It recognizes that triple burden malnutrition is a multi-dimensional challenge shaped not only by food availability and affordability but also by broader fiscal, trade and market systems (FAO, 2015). SACIN seeks to bridge these dimensions by identifying how trade and fiscal policies influence food consumption patterns, diet quality and nutrition security in the region. The initiative operates across Pakistan, Nepal, Bangladesh and Sri Lanka promoting comparative learning and enabling countries to align national policy reforms with regional nutrition-sensitive goals (Global Panel on Agriculture and Food Systems for Nutrition, 2020).

In Sri Lanka, despite notable progress in health and education indicators nutrition challenges persist particularly in the form of micronutrient deficiencies, child stunting and rising overweight and obesity rates. The dual burden of malnutrition where undernutrition coexists with diet-related non-communicable diseases that reflects a complex interplay between income, prices and access to diverse and nutritious foods (WHO, 2015). Similar challenges are observed in other South Asian countries though with varying degrees of severity (Global Nutrition Report, 2023). This regional context underscores the need to understand both the shared and country-specific drivers of nutritional outcomes. Fiscal and trade policies play a vital role in shaping food systems and consumer choices. Subsidies, import tariffs, price controls and taxation influence the relative prices of staple versus nutrient-rich foods often creating unintended nutritional consequences (FAO, 2020). For example, subsidies on rice and wheat may improve caloric security but discourage dietary diversification. Conversely, import liberalization of processed foods can worsen unhealthy consumption patterns. Evaluating these policy linkages is therefore critical for developing nutrition-sensitive fiscal and trade frameworks that balance economic growth with health and equity objectives (WHO, 2024).

This national report for Sri Lanka contributes to SACIN's regional evidence base by analyzing the country's fiscal and trade policy landscape and its implications for food security and nutrition. By situating Sri Lanka's experience within a comparative regional context, the report aims to identify good practices, policy trade-offs and reform pathways that can inform regional dialogue and cross-country learning. The findings will support policymakers and stakeholders in designing integrated policy responses that advance both national nutrition goals and the broader Sustainable Development Agenda in South Asia (Global Panel on Agriculture and Food Systems for Nutrition, 2020).

1.2. Objectives and Key Research Questions

The overall objective of this study is to establish a South Asia wide research, policy and practice network dedicated to advancing the role of fiscal and trade policies in promoting healthy and nutritious dietary choices. By positioning fiscal and trade instruments as central levers of food systems transformation, the initiative seeks to generate evidence, foster dialogue and inform decision-making that supports both improved nutritional outcomes and sustainable economic development across the region.

The specific objectives are four fold:

1. To formulate actionable policy frameworks that align fiscal and trade policies with nutritional goals in consortium countries and the region
2. To provide empirical evidence on the effectiveness means in improving dietary diversity, reducing malnutrition and addressing obesity through fiscal and trade policies
3. To strengthen the knowledge on how fiscal and trade policies shape consumption choices or patterns of different groups of people (men, women, youth, rural, urban, poor etc.)
4. To explore synergies and conflicts between fiscal and trade policies in designing integrated strategies to achieve sustainable nutritional outcomes and healthier consumption patterns

To guide the analysis, the study addresses the following key research questions:

1. How do current fiscal policies such as subsidies, taxes and social protection programs affect the food affordability and dietary diversity in Sri Lanka?
2. How do trade policies include tariffs, import regulations and trade liberalization shape domestic prices and market availability of food in Sri Lanka?
3. To what extent do fiscal and trade policies influence nutrition outcomes include dietary undernutrition, over nutrition and obesity across different regions in Sri Lanka?
4. How do fiscal and trade policies impact food consumption patterns among different demographic groups (men, women, youth and pregnant/lactating mothers) highlighting potential inequities in nutrition outcomes?
5. What policy reforms or integrated strategies can optimize the synergy between fiscal and trade policies to achieve sustainable nutrition goals, healthier consumption patterns and alignment with regional nutrition-sensitive frameworks?

1.3. Scope and Approach

The scope of this national report encompasses the multidimensional linkages between fiscal and trade policies and their implications for nutrition, gender equity and welfare in Sri Lanka. The study situates the country's experience within the broader regional objectives of SACIN which aims to advance

evidence-based policymaking for healthier and more resilient food systems in South Asia. The whole analysis focuses on key fiscal policy instruments such as subsidies, taxation and budgetary allocations influencing agricultural inputs, food commodities and nutrition-sensitive interventions. On the trade policy front, the report examines tariff and non-tariff measures, incentives and import liberalization policies shaping food availability and affordability. Food groups analyzed include staples (rice, wheat, pulses), animal-based products (meat, fish, poultry, dairy), fruits and vegetables, and processed foods which collectively represent the dietary diversity and nutritional transition in Sri Lanka.

The report pays special attention to vulnerable and nutritionally at-risk populations including low-income households, women and youth. Gender-disaggregated analysis is incorporated to understand how fiscal and trade measures differently affect those demographic groups, particularly in terms of food consumption, affordability and health outcomes. Rural-urban-estate sector differences and cultural-religious differences are also considered to capture geographic and socio-economic disparities in food access and welfare. Finally, this national analysis directly contributes to SACIN's regional agenda of strengthening cross-country policy coherence in South Asia. By generating country-specific evidence, it supports comparative learning between Pakistan, Bangladesh, Nepal and Sri Lanka. The findings are intended to inform a regional synthesis that identifies shared policy levers and best practices for promoting equitable, nutrition-sensitive fiscal and trade policies across the region.

1.4. Conceptual Framework

The conceptual framework guiding this study illustrates how fiscal and trade policies influence national nutrition outcomes through a series of interconnected pathways that shape the broader food environment (Figure 1). At the core of this framework lies the recognition that economic policies such as tariffs, value-added taxes (VAT), import restrictions and price regulations do not operate in isolation. Instead, they alter the incentives, prices and availability of key food commodities within domestic markets which in turn shape household consumption patterns, dietary diversity and ultimately, nutrition and health outcomes. The framework thus positions fiscal and trade policy as nutrition-sensitive levers within the food system capable of improving or worsening food security depending on how they are designed and implemented (CEPA, 2025).

In the context of Sri Lanka and other South Asian economies, the interaction between fiscal and trade policy and the food system is especially critical. Tariffs and taxes directly influence the relative affordability of nutrient-rich versus calorie-dense but low-nutrient foods. For instance, import duties on fruits, dairy products or pulses can raise consumer prices discouraging their inclusion in diets while subsidies or tax exemptions on staples may improve calorie intake but reinforce dietary monotony. Likewise, trade liberalization can enhance the availability and diversity of food products but without accompanying social protection or nutrition education it may also increase exposure to ultra-processed foods. Therefore, the framework recognizes that fiscal and trade measures are not merely macroeconomic tools but powerful determinants of the food environment shaping both supply and demand across value chains.

To capture these dynamics, the framework is structured around the four interlinked pillars of food security: availability, affordability, utilization and stability (FAO, 2008). Availability refers to the sufficient supply of safe and nutritious food which can be affected by import restrictions, production incentives or trade openness. Affordability reflects household access to food through prices and income, taxes, tariffs and market regulations play direct roles here by influencing both producer and

consumer prices. Utilization which encompasses the biological and behavioral aspects of nutrition depends not only on dietary diversity but also on the stability and quality of food available in the market. Fiscal and trade measures may indirectly shape utilization by influencing dietary composition and access to nutrient-dense foods such as pulses, fish, fruits and vegetables. Finally, stability concerns the consistency of access and supply over time fiscal buffers, stock policies and trade agreements can all help or inhibit stability during shocks such as pandemics, economic downturns or climate-related disruptions.

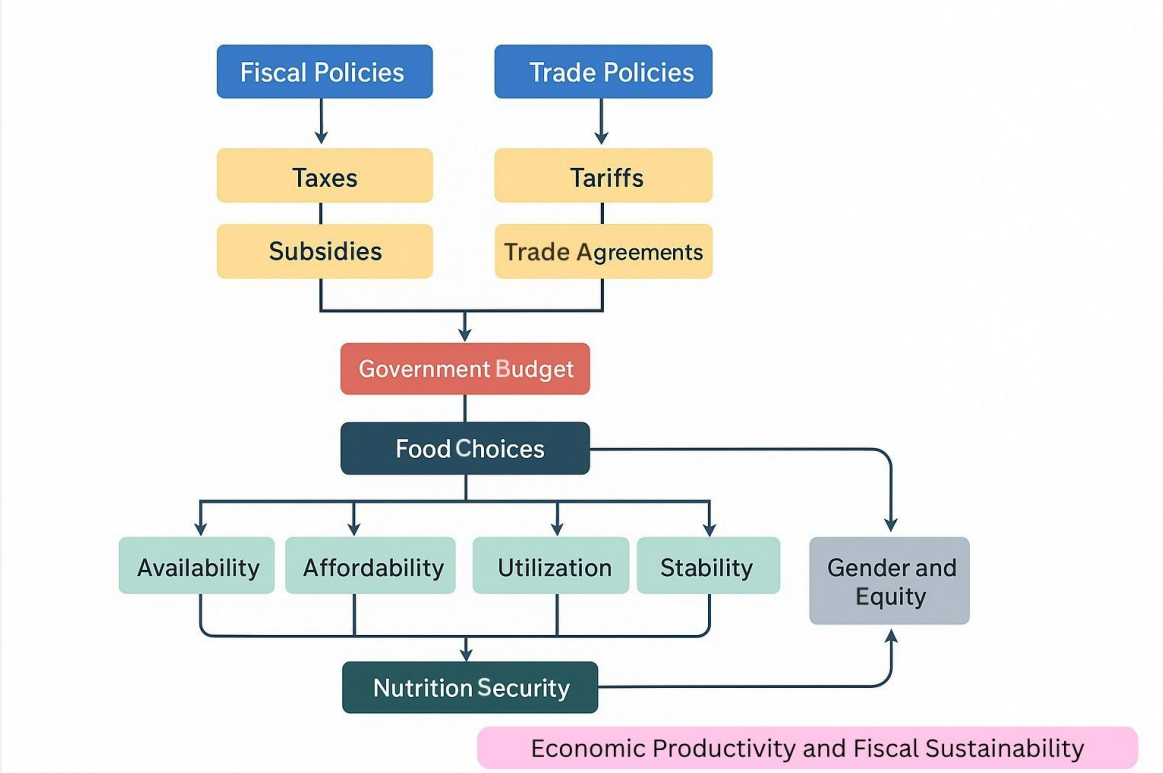

Figure 1.1. Conceptual framework linking fiscal and trade policies to food security and nutrition outcomes in Sri Lanka

The framework illustrates how fiscal and trade policy instruments such as taxes, tariffs and subsidies affect the food environment through price, income and availability effects. These in turn determine food choices and dietary quality mediated by gender and equity dynamics. The four pillars of food security as availability, affordability, utilization, and stability serve as intermediary links between macroeconomic policy actions and nutrition outcomes while improved nutrition contributes back to economic productivity and fiscal sustainability.

Source: *Adapted from Centre for Poverty Analysis (CEPA), Methodology for Fiscal and Trade Policy Analysis in Food Systems of Sri Lanka (2025) and refined by the author under the SACIN framework. Based on concepts from FAO (2008).*

Embedded within this framework is the integration of gender, equity and welfare dimensions, recognizing that policy impacts are rarely neutral. Gender roles and intra-household power relations influence how food and income are distributed within families as women's access to resources, land and decision-making authority affects the nutritional well-being of children and households. Fiscal and trade reforms that raise food prices or reduce public spending can disproportionately burden women and low-income groups who typically manage household food budgets and are more vulnerable to food insecurity. Conversely, pro-poor or gender-responsive fiscal measures such as targeted subsidies, public food programs or import tax exemptions for nutritious commodities can generate welfare gains and improve equity outcomes.

Overall, this conceptual framework underscores that fiscal and trade policy reforms must be viewed through a systems lens where macroeconomic instruments translate into micro-level nutrition outcomes via complex social and market mechanisms. By aligning these policy levers with the four pillars of food security and integrating gender and welfare considerations, countries like Sri Lanka can move toward a more resilient and inclusive food system that supports sustainable improvements in nutrition and well-being.

1.5. Methodology

Ultimately, the key research questions of the study justify the adoption of a dual methodological framework that aligns with the study's scope and analytical dimensions. The qualitative component is designed to capture community perspectives and lived experiences related to dietary practices, affordability and the perceived impacts of fiscal and trade policies on nutrition. These discussions are conducted across diverse demographic groups including men, women, youth belongs to rural, urban and estate populations under different cultural-religious environments and economically vulnerable households to ensure inclusivity and representativeness in understanding consumption behaviors, malnutrition status and policy outcomes. Complementing this, the quantitative modeling approach uses macroeconomic simulation tools to analyze how fiscal and trade instruments affect food prices, nutrition, consumption patterns and welfare indicators at the national level.

Together, these methods form an integrated analytical framework that bridges community-level realities with economy-wide policy dynamics while enabling a comprehensive understanding of how fiscal and trade policies shape nutritional outcomes. This approach not only identifies which policies matter most for advancing healthier and more equitable diets but also explains how they function in practice within Sri Lanka's complex food system. Furthermore, the combined insights contribute to SACIN's regional comparative learning agenda supporting harmonized policy dialogue among Sri Lanka, Nepal, Bangladesh, and Pakistan.

1.5.1. Quantitative Approach

The quantitative analysis employs Computable General Equilibrium (CGE) and Global Trade Analysis Project (GTAP) modeling frameworks to assess how fiscal and trade policies influence food system dynamics, household welfare and nutritional outcomes at the macroeconomic level. The model simulates various policy reform scenarios such as subsidy adjustments, tariff changes and taxation measures to evaluate their impacts on relative food prices, household consumption and income distribution. Results are disaggregated across household types to assess distributional and nutritional effects.

1.5.2. Qualitative Approach

The qualitative analysis focuses on understanding community perspectives, consumption behaviors and lived experiences related to food affordability, accessibility and dietary practices. It draws on fieldwork-based community discussions and focus group consultations (FGDs) conducted across diverse five demographic groups as men women, adolescent girls, adolescent boys and pregnant or lactating mothers located in four districts: Kurunegala, Nuwara Eliya, Jaffna and Colombo. Pilot FGDs were conducted in Anuradhapura and Kurunegala districts. These discussions explore how fiscal and trade measures such as subsidies, taxes or import restrictions influence household food choices and nutritional well-being. Special attention is given to gender-differentiated impacts, intra-household food allocation and perceptions of price changes in staple and nutrient-rich foods. The findings from this component provide valuable ground-level evidence to complement quantitative results and support inclusive policy formulation.

Findings from the GTAP-based simulations were triangulated with the qualitative insights from community discussions and the policy review. This integration allows for an in-depth understanding of both the quantitative effects (on prices, income, and welfare) and qualitative dimensions (on perceptions, access, and gendered outcomes). The combined approach ensures that the analysis not only estimates the magnitude of policy impacts but also captures how these policies translate into everyday experiences of households and communities. This dual evidence base strengthens the credibility of recommendations for nutrition-sensitive fiscal and trade reforms that advance equity and inclusiveness in Sri Lanka's food system.

1.6. Deliverables of the Study

The study produced the following key deliverables collectively reflecting the full research process from conceptualization to actionable policy guidance.

Inception report

The first deliverable is the Inception Report which presents a well-developed conceptual framework linking fiscal, trade and nutrition policy dimensions. It also details the methods for data collection including qualitative fieldwork and secondary data sources and describe the planned approaches for data analysis and empirical modelling.

Preliminary report

The second deliverable, the Preliminary Report provides a comprehensive desk review of existing policies, programs, projects and studies relevant to nutrition, food systems, fiscal measures and trade instruments. This report critically assesses gaps and lessons from previous research and interventions setting the stage for the primary analyses.

Draft final report

The Draft Final Report constitutes the third deliverable containing the results of both primary and secondary data analyses. The qualitative component synthesizes insights from community discussions, household dietary patterns, intra-household food allocation and demographic differences. The quantitative component present findings from GTAP-based simulations including the impacts of fiscal

and trade policy scenarios on prices, consumption, dietary diversity and household welfare. This report generated separately for both quantative and qualitative components and provides in-depth discussion and conclusions for each analytical stream.

Final report

The fourth deliverable, the Final Report integrates first, second and third deliverables into a cohesive and comprehensive document. It presents a synthesis of the findings and highlight cross-cutting insights while linking them to policy implications and SACIN's regional objectives.

Policy brief

Finally, the Policy Brief will distil the key findings and recommendations into a concise, targeted document designed for policymakers and stakeholders. The brief emphasizes actionable, nutrition-sensitive fiscal and trade interventions to inform evidence-based decision-making at national and regional levels.

CHAPTER 2

FISCAL AND TRADE POLICIES

Sri Lanka's food and nutrition outcomes are deeply embedded within its evolving trade and fiscal policy environment which governs the dynamics of food production, imports, prices and affordability. The country's food economy operates within a dual structure, one dependent on domestic agricultural cycles shaped by the *Maha* and *Yala* seasons and another heavily reliant on imported staples, dairy, edible oils and processed foods to meet consumption needs. Fiscal policies including subsidies, taxes and price controls intersect with trade measures such as tariffs, import restrictions and trade liberalization to influence both market accessibility and nutritional well-being. Over the past decade, these policy instruments have been continuously tested by economic crises, external shocks and the COVID-19 pandemic which disrupted supply chains and escalated food inflation. This chapter examines the fiscal and trade policy landscape influencing food and nutrition in Sri Lanka by exploring the structure of the national food economy, fiscal interventions shaping food prices and affordability, trade policies and import dynamics, market trends and the institutional mechanisms governing these processes. The discussion also identifies policy gaps and evidence needs to strengthen coherence between trade, fiscal and nutrition objectives situating Sri Lanka's experience within the broader South Asian policy context.

2.1. Overview of Sri Lanka's Food Economy

Sri Lanka's food economy is characterised by a dual structure which consists relatively strong domestic staple production especially of paddy or rice and persistent import-dependence for a number of critical food commodities. Key imports include wheat and wheat products, milk powder and dairy ingredients, edible oils, selected pulses and processed foods. This combination places the country in a structurally vulnerable position which is exposed to international price fluctuations, foreign exchange constraints and global supply chain disruptions. While domestic rice cultivation remains the backbone of both household food security and rural livelihoods, the system is highly sensitive to climate variability (monsoon variability, droughts, floods etc.), episodic input disruptions (such as the 2021 agrochemical policy shift) and structural inefficiencies in production and distribution (HARTI, 2022).

At the core of this domestic production side is Sri Lanka's seasonal cropping calendar which shapes the agricultural supply. The country's two major paddy cultivation seasons are the *Maha* season typically running from October to March or more precisely sowing from September to October and harvest by February/March) and the *Yala* season operating from April or May to September. The *Maha* crop accounts for about 60 percent of annual paddy output with the *Yala* season supplying the remaining share. According to the FAO's 2025 country brief notes, the 2025 main *Maha* crop accounting for about 60 percent of annual output was estimated at 2.6 million tonnes, about 4 percent below the five-year average. In the 2024/25 *Maha* season, data from the Central Bank of Sri Lanka shows total annual paddy production at 4.70 million metric tonnes (sum of both *Maha* 2.72 MT and *Yala* 1.98 MT) is a 4.1 percent increase year-on-year (CBSL, 2025).

Vegetables, fruits and other field crops follow similar seasonal rhythms tied to monsoon rainfall and irrigation availability. Post-harvest gluts are common immediately after the *Maha* and *Yala* harvesting

windows (during January–February and July–August) whereas lean periods (such as April–May and October–November) tend to see supply constraints and price surges (HARTI, 2020; CBSL, 2025). The cropping calendar thus defines predictable "high-supply" and "low-supply" windows which in turn influence domestic food prices and the timing of imports (Figure 2.1).

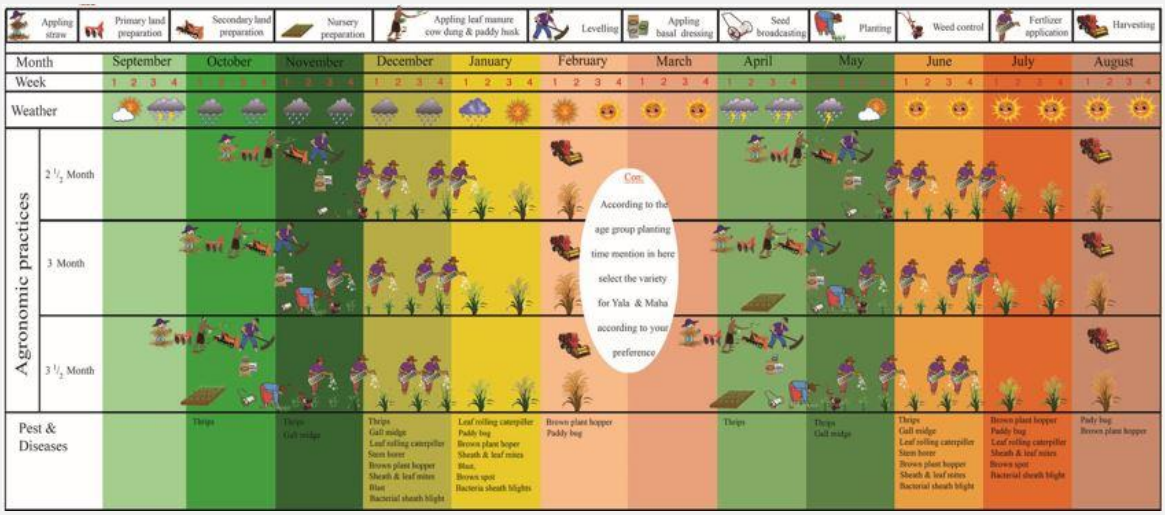

Figure 2.1. Seasonal Cropping Calendar of Sri Lanka *(Maha and Yala Seasons)*

This figure presents the seasonal cropping calendar of Sri Lanka highlighting the timing of planting and harvesting cycles for major crops such as rice, other field crops (OFCs), vegetables and fruits across the two principal agricultural seasons *Maha* (October–March) and *Yala* (April–September). The calendar also overlays rainfall patterns from the Northeast and Southwest monsoons illustrating how climatic seasonality governs the country's crop production systems. The *Maha* season driven by the Northeast monsoon accounts for the bulk of national paddy output while the *Yala* season under the Southwest monsoon supports shorter-duration and irrigated cultivation in specific regions. These temporal patterns determine not only domestic food availability but also the timing of food imports as production shortfalls during inter-seasonal gaps particularly in October–November and April-May often trigger import surges and short-term price fluctuations.

Source: *Department of Agriculture (DOA) Sri Lanka (2024)*

The interaction between domestic production, seasonal supply cycles and imports is especially important. During the off-season or in years when climatic shocks reduce yields (for instance droughts in the Yala or floods in the Maha) Sri Lanka's private sector and the government often step in to fill supply gaps with imported substitutes. For example, onion and potato imports typically rise between May and September when local supply dips; wheat imports remain relatively steady throughout the year given Sri Lanka does not produce commercial wheat at scale; milk powder imports peak when local dairy supply falls short; edible oils imports reflect both global price shifts and domestic festive demand. Indeed, agriculture sector bulletins show that in 2024 Jan - Apr imports of big onions were 103,789 tonnes upwards from 56,331 tonnes in Jan–Apr 2023 (CBSL, 2025). This seasonal import pattern also interacts with trade policy instruments such as import duties, Special Commodity Levies

(SCLs) and licensing decisions are sometimes adjusted around harvest seasons to manage producer and consumer interests.

The years of the COVID-19 pandemic and the 2022 economic crisis emphasized these structural vulnerabilities. The pandemic disrupted labour availability and import logistics during key cultivation windows and as travel restrictions and labour-shortages mounted, planting and harvest schedules were disrupted. The 2022 foreign-exchange crisis sharply constrained Sri Lanka's ability to finance imports leading to import restrictions or delays especially of wheat, milk powder, pulses and edible oils. For example, the FAO/GIEWS country brief for February 2025 estimated cereal import requirements (primarily wheat) at above-average 1.6 million tonnes due to strong domestic demand recovery and weaker domestic cereal output (FAO, 2025). Exchange-rate depreciation further passed through into higher domestic prices for both imported and locally-produced foods. As a result, households particularly lower-income ones shifted consumption towards cheaper, energy-dense staples and away from more nutrient-rich items such as pulses, dairy and fresh vegetables reflecting both supply constraints and eroded purchasing power.

In sum, Sri Lanka's food economy operates at the intersection of domestic production constraints (climatic shocks, input disruptions, irrigation/water limits etc.), seasonal supply cycles defined by *Maha/Yala* calendar and international market dependence (imports of wheat, dairy, edible oils, pulses etc.). Understanding the dynamic interplay between cropping calendar, import timing and price behaviour is essential for designing the policies. To stabilize short-term food supplies while enhancing resilience and production sustainability, policies must integrate weather-risk management (for example irrigation and drought-resilience), timely input provision, value-chain investment and import management frameworks that account for seasonal variations, exchange-rate risks and global supply disruptions.

2.2. Trade Policy on Food Imports

Trade policy in Sri Lanka plays a dual role in the food economy since it acts as a shock absorber in times of domestic supply disruptions while also serving as a long-term incentive structure to guide domestic production and value-chain development. Sri Lanka's import regime for food and agricultural commodities is built around a complex array of trade instruments such as conventional Customs tariffs, the Special Commodity Levy (SCL) applied under the SCL Act, import licensing and quotas, and other para-tariff measures. For example, the latest publication by Sri Lanka Customs outlines the structure of the applied tariff schedule, import control lists and SCL rates (Sri Lanka Customs, 2024). The average applied agricultural tariff (MFN) for Sri Lanka in recent years stood around 20 percent for cereals and food preparations though bound rates are much higher (averaging about 50 percent) indicating considerable scope for variable protection (WTO, 2023)

Within this regime, basic staple imports such as wheat grain and wheat flour or infant milk powder carry relatively lower duty burdens compared to processed or luxury food items. For instance, the U.S. Foreign Agricultural Service notes that Sri Lanka has imposed higher taxes on wheat flour than on wheat grain in order to protect local milling and discourage dumping (USDA, 2025). The objective is to keep staple imports relatively affordable for consumers while protecting domestic processing industries and farmers from unfair competition.

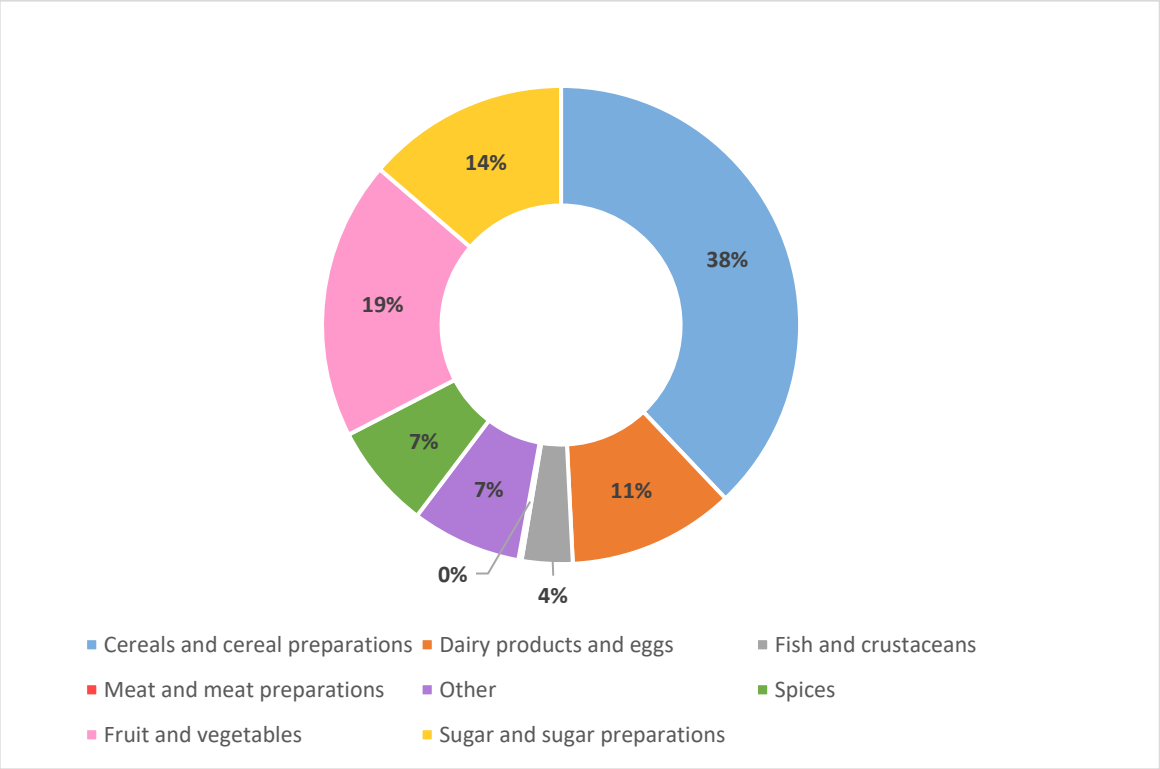

Figure 2.2. Composition of food imports in Sri Lanka (2022)

This figure illustrates the composition of Sri Lanka's food imports in 2022. Cereals and cereal preparations accounted for the largest share (38 percent) of total food imports reflecting the country's continued reliance on imported wheat and rice to supplement domestic grain production. Dairy products and eggs represented around 11 percent while sugar and sugar preparations contributed 14 percent and both categories forming critical components of household consumption and nutrition. Fruits and vegetables comprised 19percent of total food imports while highlighting seasonal gaps in domestic supply and the growing mismatch between production and consumption needs. Meat and meat preparations, spices and, fish and crustaceans collectively made up smaller proportions ranging from 4 percent to 7 percent indicating relatively lower import dependency in these segments.

The composition highlights the structural import dependence of Sri Lanka's food system particularly for staple foods and processed commodities. This dependency makes the country highly sensitive to global price fluctuations, foreign exchange availability and tariff adjustments. Import surges are often observed during periods of domestic production shortfall typically linked to seasonal crop failures or policy restrictions such as the 2021 agrochemical ban. Conversely, trade liberalization or currency depreciation can sharply alter the relative prices of imported foods influencing both market availability and consumer dietary patterns.

Source: *Author's compilation based on food import data available at Annual Report of Central Bank of Sri Lanka (2022)*

Import controls become especially active during years of poor harvests or production shortfalls. When either the *Maha* or *Yala* paddy season is hit by drought, floods or input constraints, the government often temporarily lowers tariffs, eases licensing requirements or permits special import windows to stabilize domestic supply and contain price inflation. For example, in 2020 the Sri Lankan authorities raised tariffs on certain food imports as part of a protective measure, but in other years the converse response has been taken. Conversely, in seasons of above-average domestic output or when local producers are exposed to cheap imports, the government has imposed higher SCLs or even temporary bans. One recent example: the import tariffs on big onions and potatoes were raised significantly to protect local farmers, with the SCL rising to Rs 50 per kilogram for onions and Rs 80 per kilogram for potatoes (MOF, 2025).

The year 2022 marked a striking illustration of trade policy functioning both as shock absorber and structural instrument. During the foreign exchange crisis, limited reserves forced the government to impose import licensing constraints and tighten controls over non-essential imports including many food items which in turn disrupted supply and triggered domestic price inflation. The FAO/WFP mission report highlighted how supply chain and related bottlenecks curtailed essential food imports and forced emergency policy responses (USDA, 2025). In light of this experience, several analysts emphasize that for trade policy to contribute to food-security rather than volatility, predictability and transparency are essential. Frequent, ad-hoc adjustments discourage private-sector investment in local production, storage and value-chains because investors face high uncertainty. A detailed study on “para-tariffs” in Sri Lanka shows that many hidden levies and adjusting charges increase trade cost and uncertainty, thereby inhibiting private value-chain expansion (Pitigala and Singh, 2020).

In the longer term, an integrated trade policy framework is required which aligns tariff and levy adjustments with seasonal domestic production patterns, food security priorities and import-dependency vulnerabilities. Such a framework would enable the government to use trade policy proactively (rather than reactively) to safeguard consumer affordability in lean seasons, support local producers during surplus seasons, signal investment opportunities to processors and wholesalers and reduce reliance on ad-hoc emergency imports. By doing so, Sri Lanka can move from episodic trade-policy responses to a more structured strategy that supports both availability and dietary diversity of food supplies.

2.3. Fiscal Policy on Nutrition

Fiscal policy through taxation notably the Value Added Tax or VAT, special levies, subsidies and direct transfers has been a central instrument employed by successive Sri Lankan governments to influence food prices, protect vulnerable consumers and mobilize public revenue. The Inland Revenue Department’s published “Schedule of Goods and Services Exempted from VAT” lists wheat and wheat flour as items exempt from VAT highlighting how commodity-specific exemptions are used as tools to ease consumer burden on certain staple foods (IRD, 2016). In December 2023, the government approved an increase in the VAT rate from 15percent to 18percent and significantly reduced the number of exemptions from 138 to 97 items thereby signalling a shift in fiscal policy toward broader revenue-generation rather than targeted food-price relief.

Historically, the Consumer Affairs Authority (CAA) has administered broad price control measures and subsidies for key staples such as rice, sugar and milk powder with the objective of stabilizing retail prices and ensuring affordability for basic household needs. However, maintaining these interventions

over prolonged periods has often generated unintended consequences like distortions in market behavior, disincentives for production, supply shortages and heavy fiscal burdens. For instance, Weerahewa *et al*. (2018) noted that the shift away from universal food subsidies in Sri Lanka was partially driven by increasing fiscal costs and questions about nutritional targeting. In the context of the 2022 macroeconomic crisis, Sri Lanka faced serious revenue shortfalls and foreign exchange constraints forcing the government to both increase VAT rates and reduce the fiscal space for subsidies at the very moment when household real incomes were eroding and food-price inflation accelerating.

From the perspective of nutrition, the design of fiscal policies in Sri Lanka has tended to favour price stability of staples primarily energy-dense carbohydrates rather than boosting affordability of nutrient-dense foods such as pulses, dairy, fruits and vegetables. While exemptions have often included wheat, wheat flour, infant milk powder and some local fresh milk or yogurt since April 2025 the IRD formally exempted locally produced liquid milk and yogurt from VAT, the relative cost of fresh produce and pulses remains higher particularly for low-income households purchasing in imperfect markets. This creates an implicit fiscal bias as the households may continue to consume cheaper staples rather than more nutritious alternatives (National Nutrition Secretariat, 2021). The National Nutrition Policy emphasises that ensuring affordability of a nutritious diet requires not only income support and production interventions but, also fiscal and trade policies aligned with dietary quality targets (MOH, 2022).

Moreover, the effectiveness of fiscal policy in supporting nutrition outcomes hinges on three critical dimensions: *targeting* (ensuring benefits reach the nutritionally vulnerable rather than universally), *sequencing* (temporary relief measures versus structural reforms) and integration with broader food and nutrition programmes. Without coordination, subsidies and exemptions can mask deeper structural issues such as distribution inefficiencies, market power and post-harvest losses that keep nutrient-rich foods expensive. A UNICEF study (2019) on public financing for nutrition in Sri Lanka highlights that although nutrition is a national priority, the allocation and targeting of budgetary resources remains fragmented across sectors and lacks sufficient integration with fiscal instruments affecting food prices.

In summary, in Sri Lanka fiscal policy remains the principal lever for balancing food-price affordability and nutritional adequacy. However, its long-term effectiveness in steering dietary quality and nutrition outcomes depends crucially on coherent targeting of interventions, structural sequencing of fiscal reforms and alignment with nutrition-specific programmes and market-structure reforms. As policy pressures mount from rising global food prices, inflation and budget constraints, the need for fiscal instruments explicitly designed to promote nutrient-rich diets becomes increasingly important.

2.4. Food Price Volatility

Globally, food price volatility has intensified over the past decade due to the interplay of climatic disruptions, geopolitical tensions and macroeconomic shocks. According to the FAO Food Price Index (FAO, 2024), global food prices reached unprecedented peaks in 2022 surpassing the 2011 levels that followed the global food crisis. The Index, which tracks international prices of major food groups such as cereals, vegetable oils, dairy, meat and sugar showed pronounced inter-commodity divergence during 2005–2022 (Figure 2.3.).

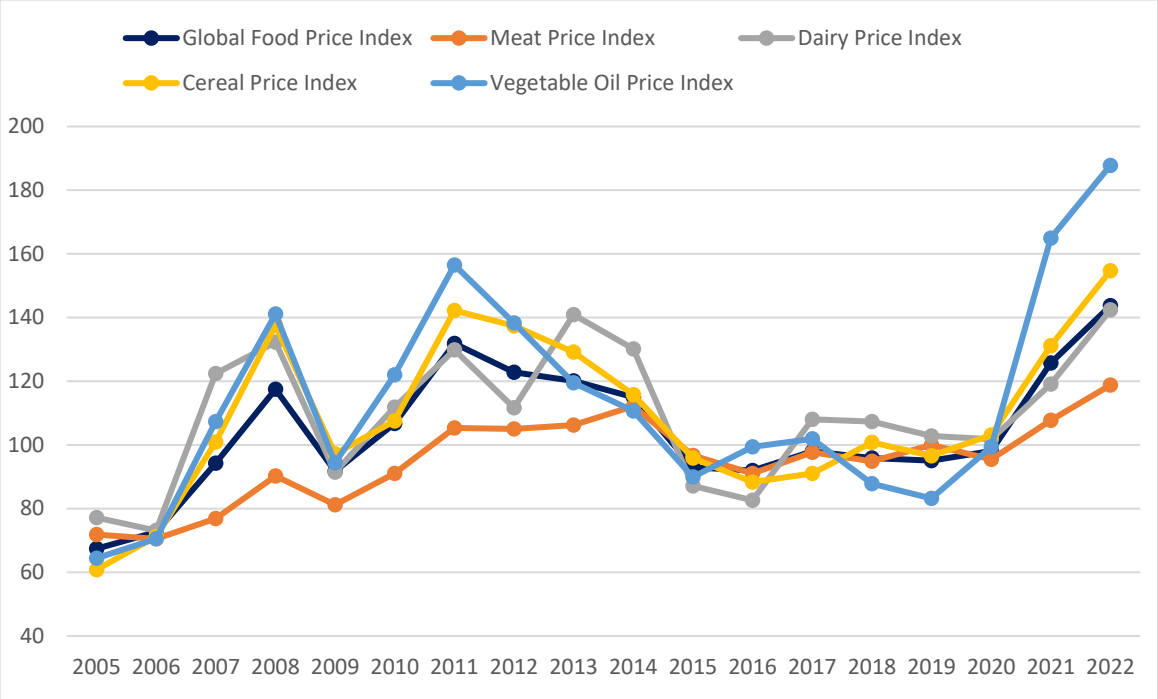

Figure 2.3. Global Food Price Index 2005-2022

This figure presents the FAO Food Price Index (FFPI) over the period from 2005 to 2022 with 2014-2016 as the base period (index = 100). The index aggregates monthly international commodity prices for five major food groups (cereals, vegetable oils, dairy, meat, sugar) and reflects global trends in food commodity price levels. In the early part of the series (2005-2007), the index rises steadily as global demand increases and commodity markets tighten. The peak around 2008 marks the first major global food price crisis. After a temporary downturn, a stronger rise appears from about 2010 through 2012 followed by relative moderation until 2020. However, from 2020 onward the index shows a sharp acceleration due to the impact of the COVID-19 pandemic combined with supply-chain disruptions and the 2022 shock associated with the war in Ukraine push the index to its highest levels in March 2022. After that peak, there is a modest decline but the overall level remains substantially elevated compared to pre-pandemic years. The chart thus captures how global food commodity prices have become more volatile and elevated in recent years while underlining the structural risks for import dependent countries that exposed to global market shocks.

Source: *Food and Agriculture Organization (FAO) of the United Nations (2023)*

Cereal prices particularly wheat and maize have risen sharply during the 2021–2022 period due to droughts in key producing regions (North America and Central Asia) and the Russia–Ukraine conflict which disrupted 30percent of global grain exports (FAO, 2023). Vegetable oil prices followed a similar trajectory driven by supply shortages in palm oil (Indonesia and Malaysia) and sunflower oil (Ukraine) while dairy and meat prices rose more moderately due to energy and feed cost inflation. Sugar prices, on the other hand, demonstrated cyclical volatility while reflecting energy-linked demand for ethanol

and adverse weather in Brazil and India. Although global food prices eased in 2023, they remained above pre-pandemic averages reflecting enduring structural vulnerabilities such as energy price pass-through, fertilizer cost surges and climate-induced yield variability. These global dynamics transmitted directly into import-dependent economies like Sri Lanka amplifying domestic inflationary pressures and exposing the fragility of local food systems that rely heavily on international supply chains.

Sri Lanka's food price volatility between 2010 and 2024 reflects a complex interplay of domestic production dynamics, trade policy adjustments and macroeconomic instability. Over this period, food prices exhibited persistent instability relative to non-food commodities, underscoring the sector's vulnerability to both internal and external shocks. Data from the Colombo Consumer Price Index (CCPI) and the Department of Census and Statistics (DCS) consistently show that food inflation has outpaced overall inflation driven by fluctuations in agricultural output, fuel price changes, currency depreciation and policy inconsistency (DCS, 2024; CBSL, 2023). The volatility is particularly visible in staple commodities such as rice, vegetables and pulses whose production cycles are closely linked to monsoonal rainfall and irrigation patterns. During drought years such as 2016–2017 and 2020, and during excessive rainfall in 2019, yield losses translated into supply shortages magnifying price pressures across markets.

The period from 2021 to 2023 marked an unprecedented escalation in food price volatility largely triggered by a convergence of environmental, policy and macroeconomic crises. The 2021 agrochemical import ban sharply reduced yields in key crops, especially paddy and vegetables as farmers were unable to access fertilizer and pesticides in adequate quantities according to World Bank (WB) in 2022. This policy shock coincided with the foreign exchange crisis of 2022 which constrained imports of essential food commodities such as milk powder, wheat flour and cooking oil. Combined with fuel shortages and high transport costs, these disruptions led to dramatic surges in food prices across both urban and rural markets. The CBSL's Annual Report (2023) recorded food inflation peaking at over 90 percent during mid-2022 which was the highest in post-independence history. Such hyperinflation not only eroded real incomes but also altered dietary patterns forcing low-income households to substitute nutrient-rich foods with cheaper, calorie-dense alternatives worsening the double burden of malnutrition.

Beyond short-term crises, Sri Lanka's food price volatility is structurally embedded in the economy's dependence on imports for essential foods and agricultural inputs. Approximately 40–50 percent of wheat, milk powder, pulses and edible oil consumption is import-dependent (FAO, 2022; HARTI, 2023). When the exchange rate depreciates as seen during the 2018 balance-of-payments stress and the 2022 collapse the landed cost of these items increases sharply while feeding into domestic retail prices. At the same time, logistical inefficiencies, post-harvest losses exceeding 25 percent for perishable items and weak integration of rural markets contribute to wide price disparities between producer and consumer levels (ADB, 2021). In this context, imported processed foods often subject to lower tariffs and benefiting from economies of scale become cheaper than domestically produced fresh foods once transport and storage costs are factored in. This price dynamic has reshaped consumption patterns particularly in urban and estate sectors where affordability and convenience outweigh nutritional quality.

Fiscal and trade policy interventions have attempted to moderate these trends but have often done so reactively. The Consumer Affairs Authority (CAA) periodically imposed maximum retail prices (MRPs) on essential commodities including rice, sugar and dhal while the MOF adjusted import tariffs and SCLs

in response to market pressures. However, such measures while temporarily stabilizing retail prices have increased uncertainty for producers and traders by distorting market signals (MOF, 2023). Frequent short-term fiscal adjustments coupled with the absence of a transparent, rules-based pricing mechanism have weakened investor confidence in agricultural markets and reduced the effectiveness of private sector-led food distribution systems. Moreover, inconsistent trade policies such as abrupt import bans followed by liberalization have limited the country's ability to develop a stable food security strategy, worsening volatility and eroding policy credibility.

Overall, Sri Lanka's Food Price Volatility Index (FPVI) captures the cumulative effect of these overlapping shocks and structural weaknesses. The FPVI rose sharply during 2022–2023, reflecting not only domestic production constraints but also global commodity price surges following the COVID-19 pandemic and the Russia–Ukraine conflict. As energy and fertilizer costs increased globally, domestic input costs multiplied, further pushing up prices at the farm gate and in retail markets (FAO, 2023). This volatility underscores the urgent need for a coordinated policy framework that integrates agricultural production planning, trade policy, and fiscal stabilization instruments. Building resilience requires investments in cold-chain logistics, rural market linkages, and data-driven forecasting systems that can anticipate supply-demand imbalances before they escalate into crises. Without such integrated reforms, Sri Lanka's food price volatility will remain a chronic structural challenge, perpetuating inequality and undermining both food and nutrition security.

2.5. Timeline of Key Fiscal and Trade Policy Reforms

Sri Lanka's fiscal and trade policy landscape from 2010 to 2024 reflects a highly dynamic environment characterized by recurring adjustments in tariffs, taxes and price-control mechanisms aimed at managing inflation, revenue mobilization and food affordability. The timeline captures key policy shifts that have directly or indirectly influenced food prices, domestic production incentives and nutrition outcomes.

During the early 2010s, Sri Lanka's fiscal policy primarily focused on stabilizing domestic markets and promoting import substitution. Tariff revisions and the introduction of the SCL under the Special Commodity Levy Act No. 48 of 2007 became a central tool for managing essential food imports such as sugar, lentils, milk powder and onions. This period saw frequent revisions of SCL rates through Treasury gazettes with duties adjusted monthly to balance domestic supply and price stability. Import duties on essential foods were periodically reduced to mitigate consumer price inflation while protectionist measures were simultaneously used to encourage local production of rice, pulses and vegetables.

Between 2015 and 2019, the government adopted a dual approach using VAT and SCL adjustments to generate fiscal revenue while cushioning consumers against global price volatility. The VAT rate was revised multiple times rising from 11 percent to 15 percent in 2016 which indirectly affected food prices through higher retail costs and reduced purchasing power among low-income groups. Meanwhile, selective SCL reductions were applied to essential goods like dhal, canned fish and milk powder to maintain affordability. The CAA intensified price-control interventions introducing MRPs on key commodities such as rice, sugar and wheat flour. However, these controls were often reactive, imposed after sharp price hikes and lacked coordination with trade and fiscal authorities.

The COVID-19 pandemic (2020–2022) marked a turning point in Sri Lanka's food policy direction. Severe import restrictions including outright bans on non-essential and intermediate goods were

imposed in 2020 to conserve foreign reserves amid collapsing foreign exchange inflows. These restrictions alongside currency depreciation disrupted the food supply chain and sharply elevated domestic food prices. Tariff and SCL adjustments were implemented on an ad hoc basis to manage short-term shortages while VAT exemptions were temporarily expanded to cushion consumer spending. However, the absence of an integrated policy framework linking trade decisions with nutrition and production outcomes amplified policy uncertainty. The food import ban on agricultural inputs such as chemical fertilizers in 2021 further exacerbated domestic production shocks while contributing to yield declines and food inflation.

In the post-crisis period (2022–2024), the government adopted stabilization-oriented fiscal measures under the IMF-supported reform program. These included broad-based VAT expansion to 18 percent in 2023, reinstatement of the SCL as a key revenue instrument and gradual phasing out of some price-control mechanisms to reduce market distortions. While these reforms aimed to restore macroeconomic stability, their impact on food prices was significant pushing up retail costs of staples such as wheat flour, sugar and milk powder. The CAA continued to regulate essential goods, but frequent short-term adjustments increased uncertainty for producers and traders while undermining investment confidence in agri-food value chains.

Overall, the timeline of policy reforms highlights a persistent trade-off between consumer protection and producer incentives. Fiscal tools such as VAT and SCL have been used interchangeably to stabilize markets but their short-term focus has often led to unintended distributional consequences favoring urban consumers while discouraging rural producers. The timeline underscores the need for a predictable, transparent and nutrition-sensitive fiscal framework complemented by data-driven decision-making tools that assess the nutritional and economic impacts of policy adjustments.

2.6. Institutional Framework

Sri Lanka's food and nutrition policy environment is managed by a complex architecture of ministries, agencies and research institutions each playing distinct roles in shaping production, trade, pricing and diet-quality outcomes. The Ministry of Finance (MOF) and Treasury is responsible for fiscal policy, tax measures such as VAT and excise tax, and subsidies that influence food-prices and affordability. The Ministry of Trade, Commerce nd Food Security oversees import policy, tariff and duty schedules and licensing regimes affecting food-imports. The Sri Lanka Customs administers duties, collection of Special Commodity Levies (SCLs) and the classification of food imports. The CAA enforces retail price controls, essential-commodity orders and monitors market behaviour.

On the production side, the Ministry of Agriculture (MOA) regulates agricultural input policy, seed and fertiliser controls and producer support frameworks. Nutrition-specific stewardship is led by the Ministry of Health (MOH) via the National Nutrition Secretariat (NNS) which implements the national policy titled National Nutrition Policy 2021-2030 (NNP 2021-2030) and supports inter-ministerial coordination. Supporting agencies such as the Department of Census and Statistics (DCS), the Department of Animal Production and Health (DAPH) and research bodies such as the Hector Kobbekaduwa Agrarian Research and Training Institute (HARTI) and the International Water Management Institute (IWMI) supply technical analyses, monitoring data and evidence-inputs for policy.

Despite this broad institutional coverage, significant coordination challenges also persist. One key issue is the misalignment of mandates for instance, fiscal and trade decisions may prioritize revenue-

mobilisation or price-stability without explicit nutrition impact assessment while agricultural or nutrition agencies emphasise diet-quality or livelihood goals. The NNP 2021-2030 explicitly calls for "coordinated multi-sector collaboration and partnerships" and strategic direction across priority domains (MOH, 2023). In practice, the CAA's price-control interventions tend to be reactive, short-term and unlinked to longer-term food-security or nutrition frameworks while limiting their capacity to address structural issues such as supply-chain inefficiencies, post-harvest losses or diet diversification. Furthermore, data-sharing across institutions remains weak. A recent review found that while Sri Lanka has extensive datasets, there is limited integration of trade, price, nutrition and agricultural datasets which inhibits holistic planning and monitoring of food system-policies (IFPRI and UNICEF, 2021).

There is also a rapid increase in overlapping or fragmented policy frameworks. For example, a 2024 parliamentary submission on the "Conceptual Policy Framework for Food Security" described how multiple ministries, provincial authorities and local councils each hold distinct responsibilities for food availability, accessibility and stability resulting in institutional vague and duplication (National Council Sub Committee, 2024). In the field of nutrition, although the NNP (2023) emphasizes multisectoral action (strategic direction II: coordinated multi-sector collaboration and partnerships) and strong institutional mechanisms (strategic direction III: legal framework strengthening). Also, independent assessments note that Sri Lanka's budgetary and coordination machinery for nutrition remains fragmented and under-resourced (IFPRI and UNICEF, 2021).

Strengthening policy coherence therefore requires a number of institutional reforms:

1. The establishment of formal mechanisms for nutrition impact assessment (NIA) of major fiscal, trade and agricultural policies prior to implementation
2. Creation of an inter-ministerial policy forum including Ministries of Finance, Trade, Agriculture, Health and relevant agencies mandated to review food-system implications of major decisions
3. Development of a shared data-platform linking customs/trade, price indices, agricultural production, input supply and nutrition/consumption surveys thus enabling real-time monitoring and evidence-based decision-making
4. Enhanced capacity-building within sub-national and provincial authorities to operationalize national policies, monitor food and nutrition determinants and respond in local contexts
5. Institutionalizing long-term planning and proactive policy frameworks rather than episodic interventions designed to integrate short-run market stabilisation with long-term goals of production resilience, dietary quality and nutrition equity

In conclusion, while Sri Lanka's institutional architecture encompasses the essential agencies to address food-price, trade, production and nutrition challenges, the persistent gaps lie in coordination, data-integration and forward-looking policy tools. Addressing these will enhance the ability of policies to move from reactive responses to proactive, nutrition-sensitive food-system governance.

2.7. Policy Gaps

Despite Sri Lanka's relatively advanced institutional and statistical architecture, substantial policy and evidence gaps continue to constrain the design and implementation of nutrition-sensitive fiscal and trade frameworks. While agencies such as the DCS, the CBSL and the MOF generate a wealth of

macroeconomic and price-related data, these systems largely operate in silos. There is no institutionalized mechanism to integrate trade, fiscal and nutrition data in a manner that allows ex-ante or real-time analysis of how tariff adjustments, VAT revisions or subsidy reallocations affect household dietary diversity, food affordability or micronutrient outcomes. For example, the Household Income and Expenditure Survey (HIES) captures food consumption patterns but is rarely merged with trade or fiscal data while limiting its usefulness for assessing fiscal-nutrition linkages (DCS, 2023).

Empirical evidence from the WB and FAO highlights that across South Asia tax and tariff policies strongly influence consumption baskets often inadvertently promoting calorie-dense but nutrient-poor diets (WB, 2023; FAO, 2022). In Sri Lanka, a reduction in tariffs on imported wheat and sugar in the mid-2010s corresponded with increased consumption of refined carbohydrates, whereas limited fiscal support for fruits, vegetables and pulses sustained micronutrient deficiencies (FAO and WFP CFSAM, 2023). Yet, these causal links remain under-examined due to the absence of integrated modelling tools or longitudinal datasets that combine fiscal, price and nutritional outcomes.

A second critical gap arises from the ad hoc and reactive nature of trade and price-control interventions. Policy adjustments such as sudden import bans, SCL revisions or temporary VAT exemptions are often implemented without transparent criteria or advance notice while generating uncertainty for traders and producers. This unpredictability constrains private-sector investment in food value chains and limits policymakers' ability to forecast the distributive impacts of interventions. Establishing rule-based, transparent adjustment frameworks supported by macro-micro simulation tools (CGE or microsimulation models) would enable more systematic ex-ante assessments of how fiscal and trade changes affect different household groups especially low-income and nutritionally vulnerable populations (HARTI, 2024; UNDP, 2023).

A third major constraint lies in insufficient investment in nutrition-relevant value-chain infrastructure. Even when import tariffs on perishable goods are lowered to encourage consumption, retail prices often remain high due to post-harvest losses, inefficient transport systems and weak cold-chain networks. The WB's *Sri Lanka Food Systems Diagnostic* (2023) estimates that post-harvest losses for fruits and vegetables exceed 30percent particularly in the dry and intermediate zones which drastically reduces the market availability of nutrient-dense foods. This structural inefficiency undermines the potential benefits of fiscal reforms intended to promote healthy diets. Similarly, the limited availability of rural processing and storage facilities discourages farmers from diversifying production toward high-value, nutrient-rich crops reinforcing the dominance of low-value staples.

Finally, institutional mechanisms to operationalize nutrition-sensitive fiscal and trade policies remain underdeveloped. Implementing such frameworks requires:

1. An integrated, interoperable data platform linking Sri Lanka Customs, Treasury, CBSL, DCS and nutrition-monitoring systems enabling real-time tracking of food price, trade volume and dietary indicators.
2. Routine nutrition impact assessments (NIAs) as a prerequisite for major fiscal or trade policy shifts ensuring that decisions on tariffs or subsidies are evaluated against nutritional and equity outcomes.
3. Pilot policy instruments such as nutrition-linked cash transfers, food vouchers or targeted subsidies for nutrient-dense foods supported by rigorous monitoring and evaluation (M&E) frameworks.

4. International best practices such as “health taxes” on sugary beverages in the Philippines or targeted fruit-and-vegetable subsidies in Brazil offer evidence-based models that Sri Lanka could adapt to its context (WHO, 2023; FAO, 2021).

Bridging these evidence and implementation gaps will allow Sri Lanka to shift from reactive, crisis-driven food policy management to a proactive, data-driven and nutrition-sensitive fiscal-trade system. Such a transformation requires institutionalized data integration, strengthened analytical capacity for ex-ante policy simulation and cross-sectoral governance that aligns fiscal sustainability with equitable and healthy food access.

CHAPTER 3

HEALTH AND NUTRITION

Chapter 3 provides a comprehensive analysis of the nutritional status, dietary patterns and food consumption behaviors in Sri Lanka offering critical insights into the factors that shape food and nutrition security across the country. Understanding these patterns is essential for identifying vulnerabilities and informing interventions that promote equitable access to nutritious diets. This chapter examines the prevalence of undernutrition, micronutrient deficiencies and emerging overweight and obesity trends while highlighting spatial, socioeconomic and gender disparities. It also explores the baseline dietary composition of households, socio-cultural and economic determinants of food choices and the national nutrition policy environment. Finally, the chapter considers the implications of these factors for food security, encompassing the availability, affordability, utilization and stability of diets, thereby laying the foundation for evidence-based strategies under the SACIN framework.

3.1. National Nutrition Profile

Sri Lanka's nutritional landscape reflects a triple burden of malnutrition where persistent undernutrition coexists with rising overweight and obesity rates. Undernutrition primarily affects children under five years with stunting impacting approximately 17–18 percent of this age group and wasting observed in around 15 percent of cases signaling acute nutritional deprivation among vulnerable populations (Global Nutrition Report, 2022; Micronutrient Survey Sri Lanka, 2022). Overweight prevalence among children under five remains relatively low at 2 percent, indicating some success in preventing excessive weight gain in early childhood (Global Nutrition Report, 2022).

Child nutrition indicators reflect persistent inequalities shaped by geographic and socio-economic conditions. According to Table 3.1, underweight prevalence among children aged under 5 ranges from 18.5 percent in Sabaragamuwa to 38.0 percent in the Northwestern Province. Estate sector children are especially vulnerable with 27.2 percent underweight, 10.2 percent wasted and 24.4 percent stunted. Rural areas also show elevated malnutrition while urban areas report relatively lower rates. These patterns indicate that national nutrition and social protection policies have not effectively addressed the structural disadvantages in estate and rural sectors which are more exposed to food price fluctuations and less integrated into formal food supply chains.

Table 3.1: Prevalence (percentage) of wasting, stunting, underweight and overweight of children under 5 by Province and sector

Province	Wasting	Stunting	Underweight	Overweight	Malnutrition
Western	20.3	8.5	18.9	3.3	29.2
Central	15.9	21.5	22.1	1.0	33.8
Southern	20.2	13.9	22.1	2.4	31.2
Northern	22.6	8.3	20.8	1.8	29.8

Eastern	22.5	6.2	20.0	0.0	26.2
Northwestern	27.1	18.6	38.0	0.0	38.0
Northcentral	20.0	14.3	23.8	2.9	30.5
Uva	19.2	15.2	23.2	0.0	31.2
Sabaragamuwa	12.1	14.5	18.5	2.4	25.0
Sector					
Urban	22.0	9.1	19.5	4.3	31.1
Rural	20.2	11.8	22.2	1.5	29.5
Estate	14.4	33.1	30.2	0.0	40.3
Sri Lanka	19.8	13.7	22.7	1.7	30.8

Source: *National Nutrition and Micronutrient Survey Sri Lanka (2022)*

Nutritional challenges extend into later childhood and adolescence with stunting affecting 7.8percent of children aged 5–9 years and 16.5percent of those aged 10–17 years while wasting impacts 25.8percent and 25.2percent in the respective age groups. Overweight and obesity rates increase with age while highlighting the emerging risks of non-communicable diseases (NCDs) (Micronutrient Survey Sri Lanka, 2022). Children aged 10–17 years continue to face challenges in nutrition and micronutrient status, as shown in Table 3.2. The estate sector again records the highest malnutrition rate at 47.7 percent largely due to a high prevalence of wasting. Rural areas show increasing trends of overweight and obesity while urban adolescents exhibit higher rates of stunting. Anemia prevalence remains a concern across all sectors suggesting limited access to iron-rich or fortified foods. This points to the influence of both poor dietary diversity and uneven policy implementation in school nutrition or public food distribution systems.

Table 3.2: Percentage of malnutrition and micronutrient deficiencies by sector among children aged 10-17 years

Malnutrition status	**Urban**	**Rural**	**Estate**	**Sri Lanka**
Stunting	22.5	15.7	13.6	**16.5**
Wasting	21.1	24.4	38.6	**25.2**
Overweight	7.0	8.1	6.8	**7.9**
Obesity	2.8	4.9	2.3	**4.3**
Malnutrition	31.0	37.4	47.7	**37.4**
Micronutrient deficiencies				
Anemia	20.0	18.0	18.6	**18.3**
Iron Deficiency	4.3	5.1	4.8	**5.0**
Iron Deficiency Anemia	2.9	1.7	4.8	**2.2**

Source: *National Nutrition and Micronutrient Survey Sri Lanka (2022)*

Micronutrient deficiencies remain widespread particularly iron-deficiency anemia among women and children undermining immune function, cognitive development and maternal health outcomes (National Nutrition Policy Sri Lanka, 2021–2030). According to the Micronutrient Survey (2022), 18.5 percent of women experience anemia while maternal nutrition challenges persist during pregnancy with 14 percent underweight, 27.4 percent overweight, 5.3 percent obese and 15 percent anemic. These figures underscore the critical importance of maternal nutrition in breaking intergenerational cycles of malnutrition. Figure 3.2 highlights widespread micronutrient deficiencies, including vitamin D (35.6 percent), zinc (24.5 percent), and vitamin B12 (16.6 percent). Iron deficiency, although reduced to 11 percent compared to 2012, still poses a risk. Declining iodine levels during pregnancy indicate a need for strengthened fortification policies and better access to nutrient-dense foods. These findings reflect how trade policies affecting food imports, taxes on fortified products, and weak safety nets impact women disproportionately, especially in economically stressed households.

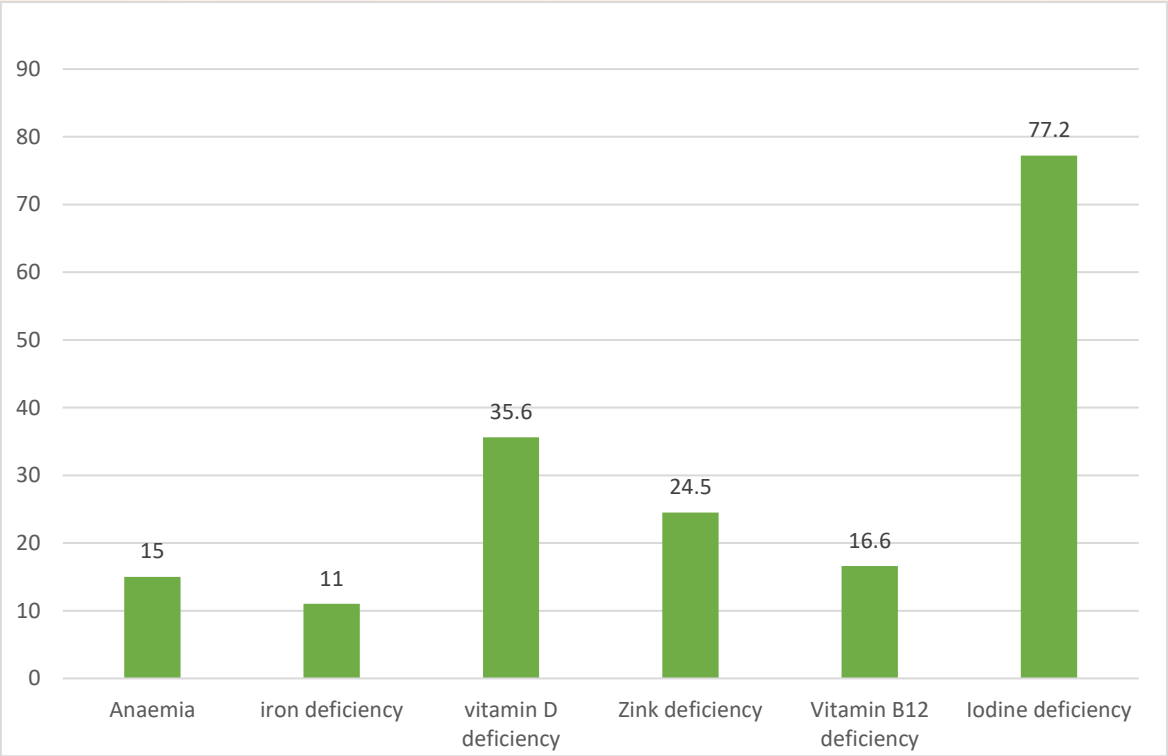

Figure 3.1: Prevalence of micronutrient deficiency of pregnant women

Source: *National Nutrition and Micronutrient Survey Sri Lanka (2022)*

The elderly population is also affected by this nutritional duality. Figure 3.3 shows that 12.1 percent of adults over 60 are underweight, 27.3 percent are overweight and 7.1 percent are obese. These statistics highlight the long-term impact of inadequate nutrition and the lack of inclusive food and health policies targeting aging populations. The nutrition status of adults further underscores sectoral and provincial disparities. Underweight is most prevalent in the Central Province and in the estate sector (22.8 percent), while overweight and obesity are more common in the North Central and Western provinces. The urban sector has the highest rates of both overweight (33.0 percent) and obesity (24.5 percent). Table 3.4, which focuses on men aged 18–60 years, mirrors similar trends. Although men in some provinces appear nutritionally better off, the data consistently show that

women, especially in rural and estate sectors, face higher burdens of undernutrition and micronutrient deficiency. This imbalance is reflective of gendered food distribution patterns within households and differences in dietary quality shaped by economic access.

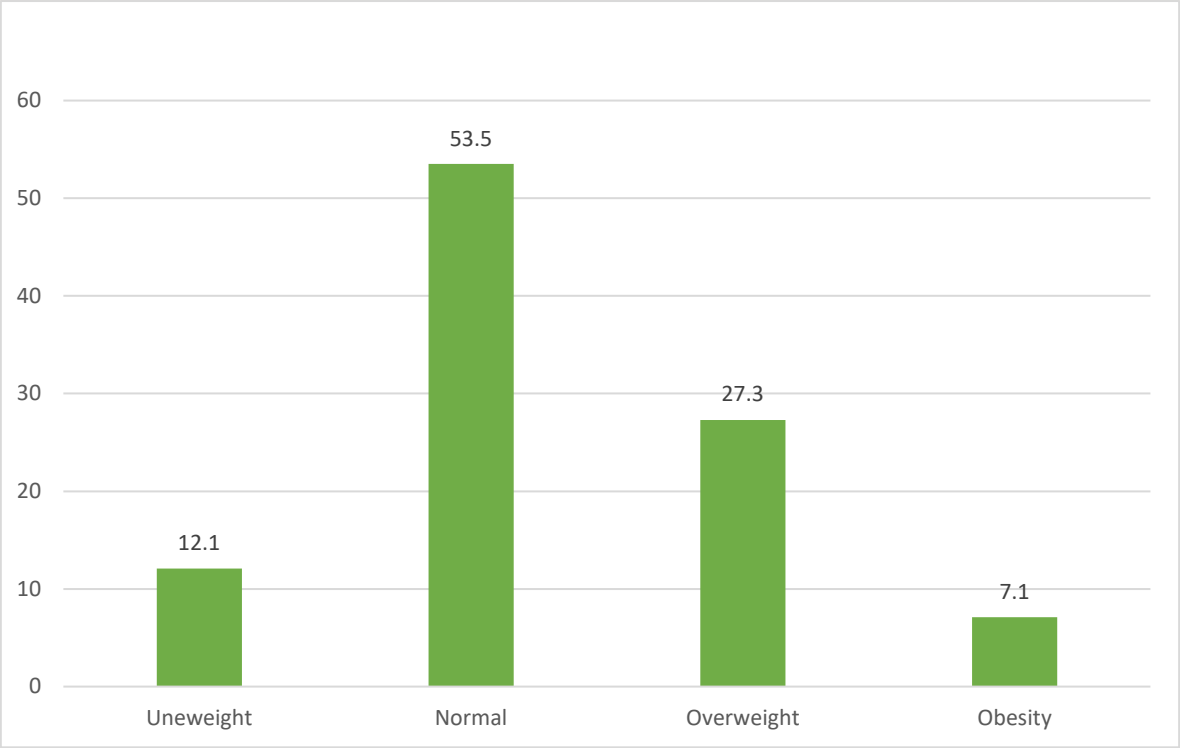

Figure 3.2: Underweight, overweight and obesity of adults > 60 years

Source: *National Nutrition and Micronutrient Survey Sri Lanka (2022)*

Sri Lanka exhibits pronounced spatial, socioeconomic and gender disparities in nutritional outcomes. Rural and estate sector populations along with urban under-settlements, demonstrate higher rates of stunting and micronutrient deficiencies whereas urban populations increasingly experience overweight and obesity due to lifestyle changes and greater access to processed foods (HARTI, 2021). Income-related inequities further exacerbate malnutrition with lower-income households experiencing higher levels of undernutrition and diet-related micronutrient deficiencies while higher-income groups show increased consumption of energy-dense foods contributing to obesity (Bandara *et al.,* 2021). Gender disparities remain significant as women and adolescent girls disproportionately face iron-deficiency anemia and other micronutrient deficiencies due to social and cultural determinants of food access and intra-household allocation (NNP Sri Lanka, 2021–2030). Overall, Sri Lanka's nutrition profile underscores the coexistence of persistent undernutrition and rising overweight and obesity, compounded by geographic, socioeconomic, and gender-based disparities. Addressing these complex challenges requires targeted interventions that consider structural, cultural, and economic barriers to equitable nutrition outcomes.

3.2. Baseline Dietary Composition

Sri Lankan diets are traditionally centered on staple foods with rice contributing approximately 45–50 percent of daily caloric intake followed by moderate contributions from cereals, pulses and starchy

roots (HARTI, 2021; FAO, 2022). Protein intake is derived primarily from animal sources such as fish, eggs and dairy products complemented by plant-based legumes. Fat consumption is largely influenced by vegetable oils, coconut products and small amounts of animal fats contributing 20–25 percent of total energy intake (HARTI, 2021). Household consumption patterns exhibit substantial regional, socioeconomic and cultural variations. Urban households increasingly consume processed and packaged foods whereas rural populations rely more heavily on fresh staples and locally sourced vegetables. Low-income households experience limited dietary diversity, with diets dominated by cereals and starchy staples and minimal inclusion of fruits, vegetables and high-quality proteins (Bandara *et al.,* 2021).

Diet diversity indicators such as the Minimum Dietary Diversity for Women (MDD-W) and the Household Dietary Diversity Score (HDDS) highlight substantial gaps in nutrient-dense food intake particularly among children and women of reproductive age. These deficiencies underscore vulnerabilities to micronutrient deficiencies, suboptimal growth and broader nutritional inadequacies (Micronutrient Survey Sri Lanka, 2022; National Nutrition Policy Sri Lanka, 2021–2030). Individual Dietary Diversity Scores (IDDS) which range from 0 to 9 based on the number of food groups consumed over 24 hours serve as a proxy for nutrient adequacy. For the purpose of analysis, scores were categorized as poor (0–4), borderline (5-6) or acceptable (7-9). Findings indicate that children's dietary diversity is at an acceptable level but nearing borderline status while both women and men consistently fall into the borderline category across urban, rural and estate sectors (Figure 3.4).

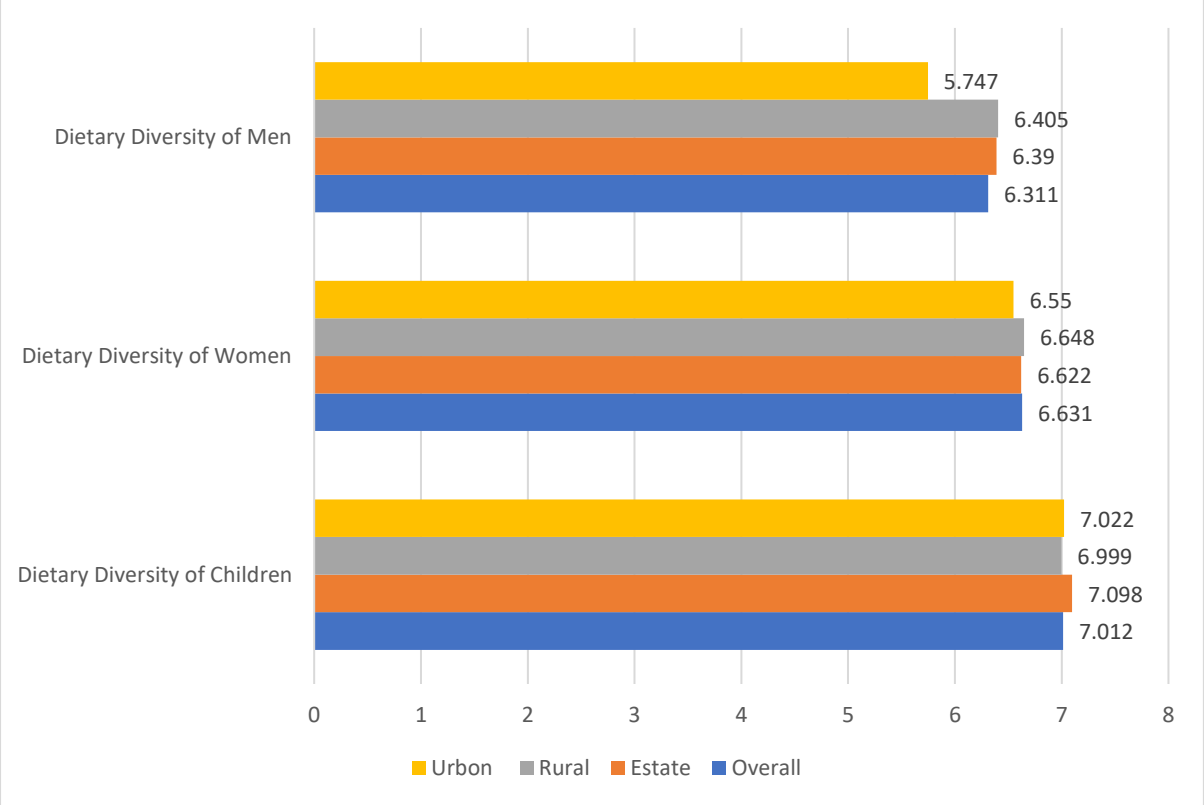

Figure 3.3: Dietary diversity of men, women and children

Source: *Rapid Food Security Survey Report, CEPA (2022)*

Overall, while the Sri Lankan diet remains heavily reliant on staples while emerging urban dietary patterns combined with persistent low dietary diversity among vulnerable groups contribute to ongoing challenges in achieving optimal nutrition outcomes. Addressing these gaps requires strategies that enhance access to nutrient-rich foods and improve dietary quality across socioeconomic and regional contexts.

3.3. Socioeconomic and Cultural Determinants

Food consumption patterns in Sri Lanka are strongly influenced by socioeconomic, educational and urbanization factors alongside cultural norms and intra-household dynamics. Income levels play a key role as higher-income households typically have greater access to protein-rich foods, dairy, fruits and imported processed items while lower-income households rely heavily on affordable staples limiting both dietary diversity and micronutrient intake (Bandara *et al.,* 2021; HARTI, 2021). Education particularly maternal education critically shapes knowledge of nutrition, dietary choices and household feeding practices with direct impacts on child nutrition outcomes (Micronutrient Survey Sri Lanka, 2022).

Urbanization has accelerated shifts towards convenience-based and energy-dense diets while increasing the consumption of ready-to-eat processed foods and contributing to rising overweight and obesity rates particularly among youth and working-age adults (STEP Survey Sri Lanka, 2021). Occupational changes greater female labor force participation and exposure to Western fast-food culture have further transformed traditional dietary patterns. Cultural and religious norms also significantly shape food consumption behaviors. Coastal populations maintain high fish consumption while vegetarian diets are more common among specific religious communities. Traditional food practices remain influential but are increasingly supplemented or replaced by imported and processed items reflecting economic and cultural transitions (Bandara *et al.,* 2021).

Intra-household food allocation patterns and social hierarchies further affect nutrition particularly for women and children. Estate sector residents, marginalized ethnic groups and female-headed households often experience limited access to high-quality, nutrient-dense foods exacerbating vulnerabilities (HARTI, 2021; NNP Sri Lanka, 2021–2030). Gendered norms influence who eats first, the portion size and the quality of food consumed strengthening inequalities in nutritional outcomes. Overall, food choices in Sri Lanka are shaped by a complex interplay of income, education, urbanization, cultural norms and intra-household dynamics while highlighting the need for interventions that address both economic and sociocultural barriers to equitable nutrition.

3.4. Nutrition Policy Environment

Sri Lanka has developed a structured and multi-sectoral policy environment to address malnutrition and enhance food and nutrition security. At the center of this framework is the NNP 2021–2030 which provides strategic guidance to improve dietary intake, reduce micronutrient deficiencies and prevent diet-related NCDs. The policy emphasizes integrated interventions across health, education and agriculture sectors while recognizing that nutrition outcomes are shaped by a complex interplay of dietary, social and economic factors (NNP Sri Lanka, 2021–2030).

The policy framework has been operationalized through a range of nutrition-specific programs. The *Thriposha* initiative provides fortified supplementary foods to pregnant and lactating women and children under five aiming to prevent undernutrition and its intergenerational consequences. Similarly,

school feeding programs have been implemented to improve both dietary intake and educational outcomes among school-aged children. Programs such as *Poshana Malla* and *Aswesuma* extend nutritional support to low-income households ensuring that vulnerable populations have access to nutrient-rich foods. These efforts are complemented by targeted micronutrient supplementation, community-based behavior change interventions and nutrition education campaigns designed to improve knowledge and foster healthier dietary practices (Madurawala *et al.,* 2023; Micronutrient Survey Sri Lanka, 2022). In addition to national programs, Sri Lanka has adopted several global "best-buy" interventions aimed at reducing NCD risks. These include front-of-pack labeling to inform consumers about unhealthy nutrient contents and taxation of sugar-sweetened beverages to discourage excessive consumption of energy-dense, nutrient-poor foods (WHO, 2021).

The effectiveness of these nutrition interventions is closely intertwined with fiscal and trade policies. Subsidies on staple foods such as rice improve caloric access for low-income households but they may inadvertently limit dietary diversity if they fail to incentivize consumption of protein-rich or micronutrient-dense foods. Conversely, taxes on unhealthy foods can encourage healthier consumption choices. Trade policies including tariffs and import regulations influence the availability and affordability of both imported and locally produced nutrient-rich foods while shaping dietary options across socioeconomic groups (WB, 2024). Ultimately, the success of Sri Lanka's nutrition policy environment depends on consistent governance, transparency and equitable implementation. Policies must be designed and enforced in a manner that reaches the most vulnerable populations, including women, children, low-income households and marginalized communities. Alignment of nutrition programs with fiscal and trade measures is essential to ensure that interventions not only enhance caloric sufficiency but also improve diet quality, thereby addressing the dual burden of malnutrition that persists across the country.

3.5. Implications for Food Security

The Sri Lanka's nutrition and health landscape has profound implications for food security encompassing the four key dimensions of availability, accessibility, utilization and stability. The country's food system is marked by a persistent triple burden of malnutrition where undernutrition particularly among children and women coexists with a rising prevalence of overweight, obesity and diet-related non-communicable diseases (Global Nutrition Report, 2022). Although caloric availability is generally adequate due to the predominance of staple foods such as rice, this dietary pattern reflects low diversity and insufficient intake of nutrient-dense foods while contributing to widespread micronutrient deficiencies including iron, vitamin A and zinc. Such deficiencies undermine nutritional adequacy especially among vulnerable groups in the estate and rural sectors (FAO and WFP, 2022).

Food insecurity remains a critical concern with approximately 28percent of the population classified as moderately food insecure in 2022 while households in the estate sector continue to face the highest risk of severe food insecurity due to limited livelihood opportunities, poor market access and lower dietary quality (FAO and WFP, 2022). Between 2022 and 2023, there were some improvements in food security as reflected in Table 3. Food insecurity in the estate sector decreased from 57 percent to 42 percent while the rural and urban sectors also reported significant reductions. However, the estate sector continues to experience the highest food insecurity demonstrating the need for more inclusive food subsidies and nutrition-focused interventions.

Table 3.3: Prevalence of food insecurity by sector in percent per household

Sector	2022	2023
Estate	57	42
Rural	28	17
Urban	23	14
Total	**28**	**17**

Source: *Special report of FAO/WFP Crop and food security assessment mission (2023)*

Household-level food insecurity is widespread and shows sharp regional variation. Table 4 reveals that North Central Province reports the highest food insecurity at 48.7 percent while the Northern Province has the lowest at 16 percent. Nationally, 39.3 percent of households are food insecure while indicating systemic challenges in food affordability and access. Economic instability, recurring food inflation and declining agricultural productivity further exacerbate these vulnerabilities constraining the affordability and accessibility of nutritious foods. Income disparities are particularly evident in the limited access of low-income households to protein-rich foods, dairy, fruits and vegetables leading to monotonous carbohydrate-heavy diets that fail to meet essential nutrient requirements (WB, 2024).

Table 3.4: Prevalence of food insecurity by province

Province	Food insecurity (percent)	
	Moderate or severe	Severe
North Central Province	48.7	0.8
North Western Province	46.7	0.6
South Province	46.0	0.9
Central Province	41.7	0.8
Uva Province	39.4	0.5
Western Province	39.0	0.5
Eastern Province	32.5	0.6
Sabaragamuwa Province	17.3	2.3
North Province	16.0	0.4
Sri Lanka	**39.3**	**0.6**

Source: *National Nutrition and Micronutrient Survey Sri Lanka (2022)*

Beyond economic constraints, cultural and behavioral determinants also shape consumption choices often reinforcing traditional dietary patterns centered on staple grains and limiting the acceptance of diversified diets. Gender inequalities compound these challenges as women frequently experience restricted access to food and productive resources heightening the nutritional vulnerability of female-headed and estate-sector households (National Nutrition Policy Sri Lanka, 2021–2030). Moreover, the stability of Sri Lanka's food supply is increasingly threatened by climate variability, supply chain

disruptions and global market shocks that affect the import and local production of nutrient-rich and perishable food items (WB, 2024).

Addressing these multifaceted challenges necessitates an integrated, nutrition-sensitive approach to policy design. Strengthening food security requires harmonizing trade and fiscal measures with targeted nutrition interventions and social protection programs that ensure equitable access to affordable, diverse and safe foods. Policies that support agricultural diversification, promote climate-resilient production and stabilize food markets are critical to sustaining availability and reducing import dependency. Community-based nutrition programs combined with behavioral change communication and gender-responsive strategies can enhance utilization and equity within the food system. A coherent, health-focused policy environment as emphasized in the National Nutrition Policy (2021–2030) is therefore essential to improve dietary quality, enhance resilience and achieve sustainable food and nutrition security aligned with the objectives of the SACIN framework.

CHAPTER 4

ECONOMY-WIDE MODELING

Chapter 4 presents the quantitative assessment of fiscal and trade policy reforms using the Global Trade Analysis Project (GTAP) and Computable General Equilibrium (CGE) modeling framework. Fiscal and trade policies influence food systems through their effects on production, imports, prices, household welfare and dietary affordability. In an import-dependent economy such as Sri Lanka, policy instruments including tariffs, value added taxes (VAT), subsidies and price regulations play a critical role in shaping food accessibility and nutrition outcomes. However, these interventions often involve complex trade-offs between consumer welfare, domestic production incentives, fiscal sustainability and market stability. Understanding these economy-wide interactions therefore requires a comprehensive analytical framework capable of capturing linkages across sectors, households and markets. This chapter applies the GTAP and CGE framework to simulate alternative fiscal and trade policy scenarios related to food commodities and examines their impacts on food prices, imports, domestic production, welfare and macroeconomic indicators. The analysis provides evidence on how policy reforms may influence food security and nutrition outcomes while identifying potential synergies and trade-offs between affordability, economic growth and domestic agricultural resilience in Sri Lanka.

4.1. Theoretical Background

The theoretical foundation of this study is based on the CGE framework and operationalized through the Global Trade Analysis Project GTAP model. This economy-wide modeling approach is grounded in general equilibrium theory which posits that markets for goods, factors and trade adjust simultaneously toward equilibrium following any change in economic policy. Within this framework, all agents households, producers, government and investors interact through a network of input–output linkages that connect production, consumption and trade. Any disturbance to one part of the system such as a tariff reform or a tax adjustment generates a series of interrelated price and quantity changes throughout the economy until a new equilibrium is established. This interdependence makes the CGE method particularly suitable for understanding Sri Lanka's food economy where trade and fiscal instruments such as import tariffs, domestic taxes and maximum retail prices influence both the availability of and access to food.

At the conceptual core of the GTAP model lies Walrasian general equilibrium logic where every market must clear simultaneously and no single agent can alter relative prices unilaterally. Consumers maximize utility while producers maximize profits subject to technological constraints and the interaction between their decisions determines equilibrium prices and quantities in all sectors. The model captures how resources land, labor, capital and natural resources are allocated among competing uses and how shifts in relative prices guide this reallocation. It further incorporates substitution possibilities between domestic and imported goods and between different production inputs while allowing the model to simulate realistic behavioral responses to policy shocks. In this setting, Sri Lanka's economy is treated as a component of the global trading system where domestic reforms influence and are influenced by international market conditions.

The GTAP framework used in this study is a multi-regional, multi-sectoral model that links domestic production and consumption with international trade through bilateral import and export flows. The global database used GTAP Version 10A contains harmonized information on 141 regions and 65 sectors aggregated for this analysis into 13 regions and eight major sectors including rice, milk powder, edible oil, sugar, big onion, maize, other foods and services. Each sector employs a nested production structure in which intermediate inputs and primary factors are combined using constant elasticity of substitution (CES) functions while the allocation of goods between domestic and export markets follows the Armington assumption that domestic and imported products are imperfect substitutes (Armington, 1969). On the demand side, household preferences are represented by a constant difference elasticity (CDE) utility function that allows different consumption elasticities across commodities and government demand is characterized by a Cobb–Douglas structure in reflecting fixed expenditure shares.

The theoretical strength of the GTAP system lies in its ability to represent the entire economy as a matrix of interdependent markets connected through prices and quantities. It explicitly accounts for the circular flow of income and expenditure in tracing how household incomes generated in production are used to purchase goods, pay taxes and save, while firms use revenues to pay for intermediate goods and primary factors. When a policy reform changes relative prices such as the removal of a tariff or the elimination of VAT the effects propagate through these linkages in influencing the cost of production, consumption expenditure, trade patterns and overall welfare. Because the model operates under a medium-term closure, labor is mobile between domestic sectors but immobile across borders while land and capital remain relatively sector-specific. This configuration mirrors Sri Lanka's structural conditions where reallocation of resources occurs domestically but international labor mobility is limited.

A central element of the GTAP theoretical framework is its explicit welfare representation. Economic welfare is expressed through the Equivalent Variation (EV) measure which quantifies the monetary change in household income required to maintain the same level of utility after a policy shock. This welfare metric is decomposed into several theoretically meaningful components that together explain how the economy's well-being responds to policy interventions. The Terms of Trade (TOT) component measures the change (an improvement) in relative export and import prices implies that the country can obtain more imports for a given level of exports while enhancing national welfare. The Investment–Savings (IS) effect captures how changes in the relative price of investment goods influence the balance between savings and capital formation. The Allocative Efficiency (AE) component reflects welfare gains or losses arising from the reallocation of resources away from previously distorted sectors toward more productive ones when trade barriers or taxes are removed. Finally, Technical Efficiency (TE) captures productivity effects resulting from adjustments in the composition of inputs or improvements in sectoral performance following a policy change. These components jointly represent the theoretical transmission channels through which trade and fiscal policies influence household welfare, national output and resource use.

The equilibrium closure of the model ensures that every simulation obeys macroeconomic consistency. Total employment is fixed, but the distribution of labor across sectors is endogenously determined by relative wage changes, government budget balances and trade accounts adjust through changes in prices rather than quantities in allowing the system to remain internally consistent. Once a shock is introduced such as the removal of a tariff or VAT, the model recalculates all markets simultaneously. Firms adjust their production and input combinations, households re-optimize consumption given new

prices and incomes, and trade flows reorient toward goods that have become relatively cheaper. The resulting configuration of prices, quantities and welfare indicators represents the new general equilibrium of the economy. This process embodies the theoretical essence of the CGE framework the interconnectedness of all sectors and agents and the endogeneity of their adjustments.

In theoretical terms, the GTAP-CGE system portrays the economy as a fully inter-linked ecosystem where shocks in one component such as changes in tariffs, taxes or global prices cascade through every other component until stability is restored. The model integrates both supply-side and demand-side mechanisms, capturing how production efficiency, trade patterns and consumer welfare co-evolve. It is therefore capable of evaluating how food price policies simultaneously affect import dependence, domestic production, household affordability and national welfare. The framework's analytical rigor arises from its adherence to the core principles of microeconomic optimization and market equilibrium while embedding those principles within a global trading context. By translating these theoretical relationships into quantifiable measures, the GTAP-CGE approach provides a coherent, evidence-based platform for understanding the economy-wide implications of Sri Lanka's food policy reforms.

4.2. Review of Literature

This literature review highlights recent academic and policy-based research that evaluates the implications of trade and fiscal policies for food security outcomes. Drawing from empirical studies, simulation models and scenario-based analyses, it investigates how such policies affect food expenditures, dietary quality, food prices and overall availability. The review categorizes findings into following thematic domains: (1) trade policies on food security, (2) fiscal policies on food expenditure (3) dietary health and nutrition, (4) food prices and affordability, and (5) trade agreements and food availability. These categories align with current debates on the distributional impacts of trade, equity in access to nutritious food and the economic sustainability of food systems. Moreover, methodological approaches and policy implications have been derived from the respective studies.

4.2.1. Trade policies on food security

Kibria et al. (2024) have examined how agricultural trade openness, production and employment affect food security in South Asia. This study finds that while greater agricultural production and employment improve food security, higher trade openness has had a negative impact. Relying heavily on food imports without strengthening local production has made countries more vulnerable to food price shocks and insecurity. So, it argues that trade liberalization alone is not enough and it must be paired with strong domestic agricultural support to ensure stable and affordable food access. Therefore, the study findings emphasize the need for balanced trade policies that prioritize both openness and resilience in the food system.

Aragie et al. (2023) offer a compelling assessment of how increased agricultural exports fueled by liberal trade policies affect food security in sub-Saharan Africa. This study demonstrates that export-oriented trade reforms can enhance economic growth and rural incomes especially for households engaged in commercial farming. The expansion of agricultural exports is shown to reduce poverty in regions with strong infrastructure and market connectivity. However, the study also reveals of adverse impacts on net food-buying households particularly in urban areas where food prices tend to rise due to increased demand for exports and reduced domestic supply. This dual effect underlines the need for balanced trade policies that simultaneously promote growth and safeguard food access for vulnerable populations.

Steinbach et al. (2024) provide a profound assessment of potential trade policy shifts following the 2024 U.S. presidential election while highlighting how escalating protectionism through increased tariffs or revocation of preferential trade statuses which could severely disrupt U.S. agro food exports. Utilizing scenario-based projections and product-level tariff elasticities, the study demonstrates that retaliatory trade measures could shrink U.S. agricultural exports by up to 34.4 percent with vulnerable sectors like soybeans, dairy and meat products bearing the brunt. These findings underscore the systemic fragility of export dependent agricultural economies where abrupt policy re-alignments and retaliatory dynamics have the potential to trigger broader supply chain dislocations, cost inflation and declining farm-level profitability. The study advocates for more strategic and inclusive trade policies that prioritize long-term market access and resilience over short-term political gains.

Anderson (2022) complements this micro-level policy analysis with a macro-level examination of trade-related food policies in an increasingly volatile global environment shaped by climate change, rising protectionism and economic inequality. Drawing on a broad empirical literature and historical policy developments, the review argues that maintaining open food markets and liberalizing trade is essential for ensuring global food security, particularly in the face of climate-induced agricultural disruptions. The paper outlines how recent global shocks including the USA and China trade tensions, the COVID-19 pandemic and increasing geopolitical uncertainty that have exposed the fragility of international food supply chains and highlighted the limitations of current subsidy-heavy and protectionist food policies.

Also, Anderson (2019) advocates for the strategic re-purposing of these policies to align with broader societal goals such as environmental sustainability, poverty alleviation and nutritional security. This includes shifting support away from market distorting subsidies and toward public goods like agricultural research and development, climate-resilient technologies and environmental conservation. The review emphasizes the importance of coupling trade liberalization with well-designed domestic policies to address potential distributional and environmental externalities while proposing a more integrated and cooperative global approach to food policy reform. Together, the study analysis emphasizes that trade openness must be integrated within a broader framework of institutional reform and sustainability, if it is to serve as a catalyst for equitable, resilient food systems.

Cao et al. (2024) explore the distributional consequences of trade liberalization through the household consumption welfare in urban China. Drawing from extensive micro-level household survey data, the study has provided compelling evidence that trade liberalization has had a distinctly pro-poor effect, disproportionately benefiting lower-income households and less developed regions. By incorporating heterogeneity in regional industrial structures, household demand patterns and the variety effect of imported goods, the study offers a comprehensive understanding of how trade-induced price reductions and increased consumer choice enhance welfare. Also, the variety effect alone contributed nearly 8 percent to consumption welfare gains especially among lower-income groups. This evidence not only reinforces the equity-enhancing potential of liberalized trade but also cautions against overgeneralizing its benefits while urging policymakers to consider heterogeneity in household responses and regional capacities. This evidence shows that while liberalized trade can promote equity its benefits vary. Therefore, policymakers should consider differences in how households and regions respond.

Many countries depend on food imports to meet dietary needs especially for perishable and nutrient-rich food like fruits and vegetables. Over 75 percent of fruit and vegetable consumption in Denmark

and the Maldives relies on imports. However, high tariffs and non-tariff measures (NTMs) on such foods restrict availability and raise consumer prices. In low-income countries, average tariffs on fruits and vegetables are nearly 19 percent while limiting access to essential nutrients and affecting the poor disproportionately. The report emphasizes that trade policies need to remove such barriers and align with broader dietary and health goals to improve food security and nutrition (FAO, 2022).

According to macroeconomic perspective, the WB and IFPRI (2022) report points out that poorly designed trade policies distort global agricultural markets and reduce overall efficiency. The current system is heavily reliant on import restrictions and export subsidies while discouraging investments in productive and sustainable food systems. Trade reforms particularly in the context of multilateral and regional agreements could increase availability of nutritious food by promoting specialization and reducing the price gap between healthy and unhealthy food options. Ensuring open, predictable trade can support global food security, but it must be backed by domestic safeguards and investment in infrastructure and standards compliance.

Across these studies, trade policies must be aligned with food security objectives through targeted interventions that protect vulnerable households from potential negative spill-overs. This requires integrated policy frameworks that consider not just economic efficiency but also equity, nutrition and environmental sustainability.

4.2.2. Fiscal policies on food expenditure

Fiscal policies especially subsidies and consumer price support programs have long focused on maintaining access to staple foods often neglecting the affordability of diverse and nutritious diets. In many lower middle-income countries (LMICs), public spending prioritizes cereals and sugar while nutrient-rich food groups receive negligible support. Simulations of the study show that redirecting subsidies from producers to consumers particularly for healthy food groups could reduce diet costs and improve affordability. This shift is especially effective in upper middle-income countries (UMICs) where even modest changes in fiscal policy can significantly impact diet diversity and quality (FAO, 2022).

The interplay between trade reforms and social protection remains a critical area of focus in recent studies. Economic liberalization particularly the removal of food subsidies often leads to increased household food expenditures. To mitigate these effects targeted cash transfer programs have been implemented. For instance, Egyptian government is transitioning from broad food subsidies to direct cash payments to better target assistance and reduce fiscal strain. A study done by Breisinger et al. (2024) found that replacing generalized food subsidies with targeted cash transfers can enhance welfare for the poorest households while maintaining economic stability. These examples emphasize the importance of aligning trade policy changes with well-designed social safety nets to protect vulnerable populations during economic transitions.

Blasco et al. (2023) provide a comprehensive international analysis of how consumption taxes such as value-added taxes (VAT) and excise duties impact income inequality and household welfare. The study has focused on how consumption taxes tend to be regressive disproportionately affecting lower-income households who spend a larger share of their income on basic consumption including food. It reveals that in countries like Spain and USA the richest 10percent pay less than half the effective tax rate paid by the poorest 50 percent. This tax structure has pressured on food expenditure for low-income households making it harder for them to afford enough or nutritious food. Although many

countries apply reduced tax rates to food items the study argues that these efforts are often not enough to reduce the regressive impact of consumption taxes. Further, the governments should consider tax exemptions for essential goods like food or provide targeted cash transfers to low-income families. Such fiscal policies can help protect vulnerable households and improve food security especially in countries where consumption taxes make up a large share of government revenue.

Mabugu et al. (2025) explore how fiscal policy particularly through a Basic Income Support (BIS) program can impact food expenditure and poverty in South Africa. Using microsimulation models based on national data the study showed that regular cash transfers even at modest levels can significantly improve household food security by increasing disposable income. Their findings highlight that progressive financing methods like personal income taxes are more equitable and effective than consumption taxes such as VAT which tend to burden the poor. The study emphasizes that well-designed fiscal policies can play a key role in improving access to food and reducing inequality especially in low-income and vulnerable populations.

WB and IFPRI (2022) highlight the inefficiencies of current fiscal support as globally only about 35 cents of every USD in agricultural subsidies reaches farmers directly. Moreover, much of this support promotes emissions-intensive commodities while worsening environmental degradation without improving diet quality. The study suggests that fiscal support should be repurposed to fund green innovations that improve productivity, reduce environmental harm and lower the cost of healthy foods. This repurposing could cut global poverty and boost diet affordability without increasing public spending.

Fiscal policies have emerged as effective instruments for reshaping food expenditure patterns toward healthier diets. Pereda et al. (2024) analyze the impact of a 20 percent tax on ultra-processed products and a 20 percent subsidy on minimally processed foods in Brazil using a computable general equilibrium model linked to household food consumption data. Their findings show that these measures significantly encourage healthier purchasing behaviors particularly among low-income households who are more responsive to price changes. Despite a minor welfare loss, the interventions yield major public health gains by making nutritious foods more affordable and reducing consumption of unhealthy items. The study highlights that well-designed, equity-driven fiscal policies can play a critical role in addressing nutritional inequalities and improving diet quality at the population level.

In overall, the literature from above studies suggest that fiscal interventions like taxes and subsidies can effectively shift food expenditure patterns. By altering relative food prices, these policies not only promote better nutrition but also help reduce dietary inequalities. Strategic fiscal measures thus represent a promising approach for improving food security and public health outcomes.

4.2.3. Dietary health and nutrition

According to WB and IFPRI (2022), current agricultural policy does not support dietary transformation. While large sums are spent on supporting farm production, the outcomes on nutrition are very weak or even negative. It highlights the need to explicitly link agricultural investments with dietary health outcomes by supporting diversified cropping systems, local markets for perishable foods and innovations that improve food nutrient density. This approach could help reverse the global trend toward unhealthy diets and deliver significant co-benefits for health, productivity and poverty reduction.

FAO (2022) provides evidence that current agricultural support structures are largely misaligned with dietary and health objectives. Public subsidies disproportionately favor calorie-dense staples and sugar while under-supporting fruits, vegetables, pulses and nuts that are essential for preventing malnutrition and non-communicable diseases (NCDs). This imbalance has contributed to rising rates of overweight and obesity alongside undernutrition. In promoting healthy diets, agricultural policies must be re-oriented to incentivize production and consumption of nutrient-dense foods and complemented by nutrition education, school feeding and regulatory measures like food labeling and advertising controls.

Adding to this, Pereda et al. (2024) analyze the impact of fiscal measures such as taxes and subsidies on dietary outcomes. They advocate for health-sensitive fiscal policy where governments impose taxes on unhealthy food products while subsidizing healthier alternatives such as fruits, vegetables and pulses. The findings show that while such policies can reduce the consumption of unhealthy foods, they must be integrated into broader policy frameworks that account for trade dynamics. For example, a sugar tax may be less effective if low-cost imports of sugary products remain untaxed or if consumers substitute one unhealthy product for another.

Grant et al. (2025) focused towards the nutritional implications of liberalized agro food trade, particularly dairy exports from the USA to LMICs. The study quantified how U.S. free trade agreements (FTAs) have not only increased trade volumes but also substantially enhanced the availability of essential nutrients such as protein, calcium and vitamin B12 in FTA partner countries. Further, findings suggest that dairy trade liberalization plays a vital role in addressing dietary inadequacies in LMICs undergoing dietary transitions. With observed gains of up to 1.8percent points in recommended dietary allowances from U.S. dairy imports, the study highlights international trade as a viable and underutilized mechanism to support global nutrition security and health equity.

Geyik et al. (2021) explore whether global food trade helps close nutrient gaps in the world's poorest countries and find that it largely does not. Although trade improves overall nutrient flows, LICs still face major deficiencies in key micronutrients like vitamin A and iron. Imports are often dominated by staples rather than nutrient-rich foods while limiting nutritional gains. The study highlights that trade alone is insufficient to solve dietary health problems and stresses the need for nutrition-sensitive trade and agricultural policies that promote diverse, nutrient-dense foods in vulnerable regions.

A study done by Friel et al. (2013) contextualizes this issue through a food systems lens. The study argues that international trade particularly the liberalization of food imports has significantly altered dietary environments in LMICs by increasing the availability and affordability of processed foods. These foods often high in sugars, salt and unhealthy fats outcompete traditional staples due to their longer shelf life and aggressive marketing strategies. Friel et al. stress that trade openness can undermine national public health goals and exacerbate existing nutritional disparities without regulatory oversight.

A study done by Popkin et al. (2017) reveal that unhealthy food items such as salty snacks, ready-to-drink sugar-sweetened beverage (SSBs) and SSBs from concentrate are highly price elastic indicating that significant changes in consumer behavior can be achieved through fiscal measures. Among the simulated tax scenarios, the policy that applies an 18percent tax on foods and beverages already regulated under Chilean marketing laws due to their high content of added sugar, sodium or saturated fat yields the largest reductions in harmful nutrient purchases. Also, low-income households were

more responsive to these price changes while suggesting that such fiscal policies could have progressive health impacts. The study makes a compelling case for integrating fiscal tools with existing regulatory frameworks such as front package labeling and marketing restrictions advocating for a multifaceted policy approach to combat the rise in diet-related non-communicable diseases (NCDs).

Pineda et al. (2024) examine the role of fiscal policies specifically health taxes on foods high in fat, salt and sugar (HFSS) in shaping consumer food expenditure and improving dietary health. Drawing from global evidence and case studies, it found that taxes on unhealthy foods as sugar-sweetened beverages have effectively reduced consumption when the tax rates are high enough to influence prices. These taxes tend to shift consumer spending away from energy-dense and nutrient-poor foods toward healthy food alternatives especially when combined with public education campaigns. The review also highlights that health taxes work best when revenue is reinvested in health and nutrition programs which can further support healthy food access. Importantly, while concerns about regressive impacts exist the overall health benefits and long-term savings in healthcare costs often outweigh short-term financial burdens. Finally, the study emphasizes that fiscal policies targeting unhealthy foods are a valuable tool for promoting better diets and reducing the public health and economic costs associated with poor nutrition.

Headey and Alderman (2019) explored how the relative caloric prices (RCPs) of healthy and unhealthy foods vary across income levels and continents while impacting dietary health. The study found that in LICs nutritious foods are more expensive as they contribute to poorer diets and higher rates of child stunting. Conversely, unhealthy foods are cheaper in high-income countries, leading to higher consumption and obesity. The study reveals that differences in food prices significantly influence dietary patterns, highlighting the need for policy interventions to make healthy foods more affordable and improve nutrition outcomes globally.

In addressing these issues, the literature proposes integrated nutrition governance that involves multiple sectors of trade, agriculture, health and education. Nutrition impact assessments, food labeling regulations and food-based dietary guidelines must be embedded into trade negotiations and national food policies.

4.2.4. Food prices and affordability

Price volatility and affordability are major concerns addressed by FAO (2022) especially in the context of global crises like the COVID-19 pandemic and the Russia-Ukraine war. These disruptions revealed the vulnerability of international food supply chains and the susceptibility of food prices to external shocks. It has noted that trade openness can help stabilize prices by diversifying sources of supply. But it can also transmit international price shocks rapidly across borders. Therefore, policy measures that improve transparency in commodity markets, invest in strategic food reserves and promote regional trade cooperation are vital for cushioning domestic food prices. Ensuring food affordability requires a combination of open trade policies, social protection programs and proactive market interventions. This report argues that governments should focus on both price stabilization and increasing household purchasing power to ensure that nutritious food remains within reach for all, particularly during periods of global uncertainty.

The concept of affordability as defined by Headey and Alderman (2019), extends beyond nominal price levels to encompass the purchasing power of households. Even if trade reduces food prices in absolute terms, affordability may worsen for low-income populations if wages stagnate or if cheaper foods are

of poor nutritional quality. This highlights the need for a holistic understanding of how trade influences both the cost and the value of diets. FAO (2020) provide a global analysis showing that in many LMICs nutritious diets remain out of financial reach for large segments of the population. They argue that trade policy if oriented toward lowering the cost of nutrient-dense food such as fruits, vegetables, dairy and legumes can play a transformative role in improving dietary outcomes. However, achieving this requires addressing both supply-side constraints as tariffs and cold chain logistics, and demand-side barriers as income inequality and consumer awareness.

The affordability of healthy diets has worsened worldwide mainly after the COVID-19 pandemic. In 2020, nearly 3.1 billion people could not afford a healthy diet up by 112 million from the previous year. The global average cost of a healthy diet rose to 3.54 USD per person per day. Food price inflation was most severe in Asia and Latin America largely driven by supply disruptions and declining household incomes. Unless policies are redirected to reduce the cost of nutritious foods via trade reforms, consumer subsidies and investment in local food systems, diet affordability will continue to decline especially for the poor (FAO, 2022).

Interestingly, the affordability of healthy diets receives specific attention in several studies. Santeramo et al. (2024) have examined how trade policies and the increasing role of services in agro food value chains influence the distribution of value-added along these chains particularly focusing on the share of the Global Food Dollar (GFD) that accumulates to farmers. The study found that international trade and the service-based transformation of the economy significantly shape the margins within agro food value chains. Trade regimes and services that favor domestic processing of agricultural products tend to increase the share of consumer food expenditures returned to farmers. Finally, the study suggests that domestic policies promoting local processing and reducing reliance on imported services can enhance the economic returns for farmers potentially improving the affordability of food by reducing the overall cost burden on consumers.

Hirvonen et al. (2023) explored about the complexities of estimating the cost and affordability of healthy diets across different regions and populations. This study highlights that the choice of methods for determining the cost of a healthy diet whether through price data from national surveys, modeling approaches or direct market assessments can significantly affect estimates of affordability. Also, it emphasizes that depending on the approach the proportion of income required to afford a healthy diet may vary considerably thus impacting policy implications for food security and nutrition. Further, it illustrates the importance of using appropriate, context-specific methods to accurately reflect the economic realities faced by households especially in regions where food prices fluctuate and incomes are limited.

The WB and IFPRI (2022) shows that repurposing support toward green innovation can reduce the cost of healthy diets by 18 percent globally. This is achieved by increasing supply of nutrient-rich foods and lowering production costs through technology adoption. Unlike blanket price controls or subsidies, targeted innovation investments deliver sustained reductions in food prices while also improving environmental outcomes. This reform path emerges as the most effective and least distortionary way to enhance affordability and dietary quality over time.

Block et al. (2024) found that while tariffs and non-tariff measures (NTMs) contribute to food prices, their overall effect on the cost of a least-cost healthy diet is relatively small. Specifically, tariffs account for approximately 0.67 percent of the daily cost of a healthy diet and NTMs contribute about 2.45

percent. These trade barriers are most pronounced in LMICs and particularly affect nutrient-rich foods such as vegetables, fruits and animal-sourced foods. Despite these barriers, the majority of food prices are influenced by domestic value-added costs including labor and distribution rather than the cost of imported commodities. Finally, the study suggests that while trade policy reforms could offer modest improvements in diet affordability, addressing domestic factors such as infrastructure and value chain efficiency may have a more significant impact on improving access to healthy diets.

Overall, above studies show that fiscal and trade policies can make food more affordable in theory, but in practice their impact depends on many real-world factors. Policymakers must therefore adopt a systems-oriented approach one that integrates trade with public investment, social protection and nutritional goals to ensure that affordable and healthy food is accessible to all segments of the population.

4.2.5. Trade agreements and food availability

Ritzel and Fiankor (2024) employed fixed-effects regression models to assess the relationship between non-reciprocal preferential trade agreements (NRPTA) intensity which is quantified as the annual sum of NRPTAs a country has in place and two key indicators as food export performance and food availability per capita. The findings revealed that increased NRPTA intensity correlates positively with both enhanced food export performance and improved food availability per capita. Also, these effects are observed across various country groups including least developed, transition and developing countries without evidence of a trade-off between export growth and domestic food security. The study suggests that NRPTAs such as the Generalized System of Preferences (GSP) can serve as effective instruments for promoting food security in the Global South by boosting agricultural exports and ensuring adequate domestic food supply.

Thow et al. (2018) delve into the implications of international trade agreements on national policy space. The study argues that certain provisions in agreements under the World Trade Organization (WTO) and bilateral investment treaties can constrain the ability of LMICs to implement food security-oriented measures. For example, limits on public stockholding and domestic subsidies can make it harder for governments to build food reserves or support smallholder farmers. In India, debates over its National Food Security Act and public procurement system have raised concerns over compatibility with WTO rules. This tension between trade liberalization and food sovereignty underscores the need for reforming global trade rules to accommodate the right to food as a central objective.

Although the WB and IFPRI (2022) does not extensively analyze trade agreements in isolation, it emphasizes that liberalizing trade in nutritious food products while maintaining environmental and safety standards can enhance food system efficiency and reduce input costs. Aligning trade policies with sustainability and nutrition goals requires harmonizing standards and removing protectionist barriers that favor low-nutrient or high-emission commodities. Integrated trade and agricultural reforms can thus improve food availability without compromising health or environmental objectives.

Friel et al. have explored how trade liberalization affects food systems particularly in terms of food availability and nutrition. The study highlights that trade agreements through reduced tariffs and increased market access often lead to greater availability of processed, nutrient-poor foods while making healthier options less accessible. This shift is linked to the global spread of unhealthy food environments while contributing to rising rates of obesity and NCDs. Also, the study stresses the need for comprehensive monitoring systems to track these changes and assess the health implications of

trade policies. It proposes a framework with different levels of monitoring ranging from minimal to optimal depending on national priorities. This framework is designed to help countries assess and address the potential negative effects of trade agreements on food availability and public health.

The FAO (2022) emphasizes that modern trade agreements have profound implications for food availability particularly when they incorporate or neglect food security provisions. This report discusses how bilateral and multilateral agreements can either enhance or restrict food flows depending on their design and enforcement mechanisms. The Russia-Ukraine conflict exposed the risks of over-reliance on a few major suppliers while leading to widespread grain shortages in import-dependent regions. In response, the FAO (2022) advocates for the inclusion of "food security clauses" and "crisis protocols" in future trade agreements to guarantee uninterrupted food flows during emergencies.

Trade agreements influence in ways that can affect either positively or negatively on food security and dietary nutrition. To maximize benefits, LMICs must negotiate agreements that are inclusive, flexible and aligned with national food security priorities. Achieving this requires stronger institutions, regional collaboration and active participation in global trade governance.

4.3. Analytical Framework

The empirical foundation of this modeling exercise is the Global Trade Analysis Project (GTAP) database and model, calibrated to Sri Lanka's 2024 economic structure. The purpose of this economy-wide simulation is to quantify the macroeconomic, trade and welfare consequences of reforms in food import tariffs, domestic consumption taxes (VAT) and maximum retail price (MRP) policies which together define the fiscal-trade interface shaping national food security. The model provides an integrated analytical framework to capture how these policy shifts influence food availability, affordability and stability through interlinked changes in production, trade and consumption.

4.3.1. Model structure and data base

The analytical framework is built on the GTAP 10A global database which is harmonized with Social Accounting Matrix (SAM) data specific to Sri Lanka. This database provides consistent and comprehensive coverage of bilateral trade flows, production, consumption and tariff structures for 141 regions and 65 sectors. For the purpose of this study, the dataset was aggregated into 13 global regions and eight economic sectors of which six represent key food commodities as rice, milk powder, edible oil, sugar, big onion and maize while the remaining two capture industrial and service activities.

Sectoral input–output linkages were drawn from Sri Lanka's national accounts and trade data for 2024 while ensuring that baseline conditions reflect prevailing domestic prices, protection levels and tax rates. Import tariffs, VAT rates and non-tariff measures (NTMs) were incorporated as ad valorem equivalents consistent with Sri Lanka's current trade policy framework. These inputs were mapped onto GTAP's value-added and intermediate input structure while ensuring that fiscal and trade shocks introduced in the model directly reflect the economic distortions under analysis.

The base year (2024) equilibrium thus represents a benchmark economy in which all markets clear under existing policy settings. From this equilibrium, a set of counterfactual scenarios (SIM1–SIM4) were introduced and each simulating a distinct reform pathway. The model's closure rule was medium-term in allowing intersectoral labor mobility while keeping total employment and national savings

fixed. Exchange rates and government balances were treated as flexible variables adjusting through changes in prices and trade volumes.

4.3.2. Calibration and simulation logic

Each simulation in the GTAP model represents a policy "shock" that disturbs the initial equilibrium. The model recalculates all market relationships simultaneously in producing a new set of prices, trade flows and welfare outcomes consistent with the new policy environment. These outcomes are measured relative to the base equilibrium while allowing changes in sectoral output, imports, exports and household welfare to be traced systematically.

The welfare measure expressed as Equivalent Variation (EV) is decomposed into four main components. They are Terms of Trade (TOT), Investment–Savings (IS), Allocative Efficiency (AE) and Technical Efficiency (TE) which explain how welfare changes occur under each policy shock. TOT captures Sri Lanka's relative export–import price shift; IS reflects the impact on investment goods; AE measures resource reallocation due to reduced distortions; and TE represents productivity and cost-efficiency gains arising from changed production structures.

The simulations are designed to examine how policy coherence the interaction between trade liberalization and domestic price regulation affects the balance among these welfare channels. A negative TOT or IS effect indicates an adverse movement in trade or investment conditions while a positive AE or TE component implies internal efficiency and productivity gains. The combined EV value provides the net welfare impact of each scenario.

4.3.3. Policy Scenarios

The analysis focuses on four key policy simulations each representing a distinct reform pathway within Sri Lanka's food economy. These scenarios were formulated to capture the interactions between trade liberalization, domestic taxation and price stabilization mechanisms and their potential impacts on the structure of production, consumption and welfare. All policy shocks were applied uniformly across major food sectors such as rice, milk powder, edible oil, sugar, vegetables and other food items in ad valorem terms to ensure comparability and analytical consistency across simulations.

SIM1 – Import Tariff Removal (IMT)

This scenario represents external trade liberalization through the complete removal of import tariffs on all major food commodities. Tariff rates on rice, milk powder, edible oil, sugar and other essential imports were reduced to zero in simulating a shift toward a free-trade regime. The theoretical rationale is that eliminating import duties lowers border prices, thereby reducing domestic consumer prices and improving the availability and diversity of food in the market. Within the CGE system, this reform is modeled as a direct reduction in import tax rates while leading to a proportional fall in equilibrium import prices that were estimated between 17 and 30 percent depending on the commodity group. This configuration enables the model to examine how an open-trade policy affects food supply dynamics, household affordability and the balance between domestic and imported production.

SIM2 – Domestic VAT Removal (DMT)

The second scenario isolates the effect of domestic fiscal reform by eliminating the Value Added Tax (VAT) imposed on food commodities while keeping import tariffs unchanged. VAT removal directly lowers retail prices at the consumer level in increasing household real income and enhancing food affordability. In the CGE model, this policy shock is implemented as a full reduction of VAT rates on domestically sold food products in simulating a broad-based consumption-tax exemption. The scenario captures the internal price and income transmission channels that arise when fiscal burdens on consumers are eased while allowing a rise in effective purchasing power and greater access to calorie- and protein-rich foods such as rice, milk powder and vegetables.

SIM3 – Import Tariff Removal + Maximum Retail Price (IMTMP)

The third scenario builds upon the first by integrating a Maximum Retail Price (MRP) regulation into the liberalized trade environment. This configuration reflects a hybrid policy approach in combining the market-opening effect of tariff elimination with a domestic price-control mechanism aimed at stabilizing consumer prices. The MRP acts as a price ceiling to ensure that reductions in import costs are passed through to consumers and that sudden price fluctuations in global markets do not translate into domestic food inflation. In the GTAP model, the MRP is introduced as an additional 10 to 25 percent downward adjustment in effective consumer prices across major food commodities depending on elasticity estimates. This setup allows an assessment of whether coupling trade openness with regulated retail pricing can simultaneously improve food availability, stabilize household expenditure and safeguard consumer welfare.

SIM4 – VAT Removal + Maximum Retail Price (DMTMP)

The final scenario combines domestic tax relief with price-stabilization policy linking VAT removal and MRP controls to test their combined effect on consumer welfare and market equilibrium. The rationale behind this policy mix is to enhance affordability through fiscal relief while preserving price stability through regulatory oversight. Within the CGE framework, the scenario is modeled by eliminating VAT on all domestic food items and simultaneously applying an MRP-based price cap equivalent to a 10 percent reduction in effective consumer prices. This ensures that household purchasing power increases without triggering short-term retail price volatility or distortions in supply. The DMTMP scenario represents a domestically anchored policy strategy in evaluating whether coordinated tax and price reforms can strengthen food security outcomes particularly affordability and stability without the trade-related exposure associated with full import liberalization.

Across all four scenarios, the GTAP model captures both direct and indirect transmission mechanisms of policy change. Direct effects occur through immediate changes in tariff or tax rates that alter consumer and producer prices. Indirect effects occur through adjustments in resource allocation, income distribution and international competitiveness. The simulations trace these interdependencies across key indicators food import volumes, domestic industrial output, household welfare and sectoral efficiency providing a coherent measure of how each policy configuration influences Sri Lanka's food security pillars: availability, access, utilization and stability.

The framework thus integrates macroeconomic consistency with policy realism. It ensures that every welfare gain or loss is explained through its underlying channels while allowing policy trade-offs to be interpreted in terms of structural efficiency rather than short-term price effects. By embedding tariff, VAT and MRP reforms within a single CGE system, the model provides a transparent, evidence-based

foundation for assessing which combination of policies delivers the most balanced improvement in Sri Lanka's food system resilience.

4.4. Results and Discussion

4.4.1. Trade and import dynamics

Composition and volume of food imports

The simulation results reveal that Sri Lanka's food import structure responds strongly to the four policy scenarios import tariff removal (IMT), tariff removal with maximum retail price regulation (IMTMP), domestic VAT removal (DMT) and VAT removal with MRP (DMTMP) with the most pronounced effects observed under trade liberalization. Under the IMT scenario, the full elimination of import tariffs significantly reduces border prices while leading to substantial growth in food import volumes across nearly all major commodities. The model indicates increases of 42.7 percent in milk powder imports, 32.74 percent in rice, 29.16 percent in edible oils, 15.38 percent in vegetables and 26.61 percent in other processed foods. These results demonstrate that tariff reductions directly enhance the competitiveness of imported foods relative to domestic products and this is also a finding consistent with global CGE analyses of trade liberalization in developing economies (Anderson and Martin, 2005; Bouët and Laborde, 2010).

When tariff removal is accompanied by a 10 percent reduction in retail prices through MRP implementation (IMTMP), import growth becomes even more pronounced. Milk powder imports expand by nearly 58 percent, rice by 48 percent and edible oil by over 40 percent. These effects underscore the reinforcing relationship between tariff policy and price regulation: lower border prices combined with capped consumer prices amplify household demand in stimulating higher import volumes to meet the surge in consumption. The dual mechanism of reduced import cost and domestic price stabilization therefore strengthens food availability in the short run, although it may also intensify external dependence. In contrast, domestic VAT removal (DMT) and VAT removal with MRP (DMTMP) exert relatively modest effects on import volumes because these reforms primarily target locally produced foods. Nevertheless, both scenarios yield slight increases in imports by stimulating overall demand and improving consumer purchasing power. Collectively, the findings suggest that while tariff liberalization remains the most powerful determinant of import growth, complementary fiscal measures such as VAT adjustments and MRPs shape the overall responsiveness of food demand in determining the scale and composition of Sri Lanka's import portfolio.

Regional and bilateral trade patterns

The simulation outcomes confirm that India remains Sri Lanka's predominant source of food imports under all policy scenarios while highlighting its strategic importance within the regional trade network. Under full tariff liberalization (IMT and IMTMP), Sri Lanka's imports from India increase substantially across nearly all food categories by 12 percent for cereals and grains, 12.34 percent for vegetable products, 12.09 percent for edible oils, 7.89 percent for rice, 6.26 percent for sugar and 7 percent for other processed foods. This outcome reflects both geographical proximity and comparative advantage as India's diversified agricultural base and lower transport costs allow it to meet a large share of Sri Lanka's import demand efficiently. The pattern also mirrors existing bilateral and regional agreements such as the Indo–Sri Lanka Free Trade Agreement (ISFTA) and the South Asian Free Trade Area (SAFTA) which facilitate preferential access and reduced tariffs for many essential food commodities.

While the strengthening of trade linkages with India offers clear benefits such as greater market access, lower transaction costs, and supply stability, it also exposes Sri Lanka to regional vulnerabilities. Any supply disruption or export policy change in India could quickly transmit to Sri Lankan markets in affecting both prices and availability of critical staples such as rice and sugar. The simulations further suggest minor trade reallocation effects with moderate increases in imports from other South and Southeast Asian partners (e.g., Indonesia for edible oils, Pakistan and Nepal for cereals) as Sri Lanka diversifies sourcing in response to price differentials. However, India's dominance remains largely unchallenged. This concentration raises important policy questions regarding supply chain resilience and diversification. In an increasingly volatile global food market, dependence on a single regional supplier may heighten exposure to climatic shocks, export bans or currency fluctuations. Therefore, trade policy must be carefully aligned with national food security goals in leveraging regional integration for efficiency gains while maintaining strategic diversification to safeguard against external shocks.

Implications for trade balance and fiscal space

Although tariff liberalization and MRPs improve food affordability and expand consumer access, they also generate complex macroeconomic trade-offs. The surge in food imports under IMT and IMTMP scenarios exerts pressure on the trade balance in widening the current account deficit as import expenditure rises more rapidly than export earnings. At the same time, the removal of import tariffs erodes a critical source of government revenue given that trade taxes traditionally contribute a notable share to Sri Lanka's fiscal receipts. This dual effect higher import outflows coupled with declining customs revenues can constrain fiscal space while limiting the government's capacity to finance social programs or public investment without increasing debt. Conversely, the VAT-oriented reforms (DMT and DMTMP) have milder implications for the external account but may reduce domestic tax revenue unless offset by broadening the tax base or improving compliance.

In this context, the design of compensatory fiscal mechanisms becomes crucial. One pragmatic approach is the use of targeted import or consumption subsidies that cushion vulnerable households against price fluctuations while minimizing revenue leakage. For example, short-term food import subsidies or temporary government transfers could stabilize consumer prices in the face of external shocks in preventing excessive inflation without resorting to distortionary price controls. Alternatively, part of the fiscal savings from VAT reform could be redirected toward nutrition-sensitive subsidies for essential commodities such as milk powder or fortified foods, thereby strengthening both welfare and human capital outcomes. However, such subsidies must be carefully calibrated and time-bound to avoid long-term fiscal burdens and market distortions. The overall findings thus emphasize the need for a balanced policy mix that harmonizes trade openness with fiscal prudence ensuring that efforts to enhance food availability and affordability do not undermine macroeconomic stability or the government's revenue base essential for sustaining social protection and development spending.

4.4.2. Domestic production and industrial output

Sectoral production response

The simulation results reveal distinct and asymmetric effects of trade and fiscal policy reforms on Sri Lanka's domestic food industries. Under the full import tariff removal scenario (IMT), domestic output declines across most import-competing food sectors in reflecting heightened competition from lower-priced imported goods. The largest contractions occur in the sugar, milk powder and edible oil

industries in recording decreases of 22.96 percent, 19.55 percent and 23.92 percent respectively. These sectors are heavily dependent on imported raw materials or intermediate inputs and have limited comparative advantage in international markets while making them particularly vulnerable to tariff liberalization. The elimination of border protection exposes domestic producers to sharp price competition eroding profit margins and discouraging further investment. When maximum retail price regulation is added to tariff liberalization (IMTMP), these contractions deepen substantially with output reductions of 39.32 percent for sugar, 27.49 percent for milk powder and 30.58 percent for edible oils. This outcome demonstrates the compounding effect of controlled retail prices which compresses producer returns further while limiting cost pass-through to consumers.

In contrast, sectors oriented toward domestic demand such as rice, vegetables and other local food products experience smaller or marginal declines in output under trade liberalization. These industries are relatively shielded from import competition due to localized production structures, high perishability and consumer preferences for domestic varieties. The pattern changes modestly under domestic VAT removal (DMT) and VAT removal with MRP (DMTMP) where lower consumer prices and improved purchasing power stimulate slight output increases in several locally oriented sectors, particularly rice, milk powder processing and other foods. These findings indicate that domestic tax reforms can support modest production growth through demand-side channels even in the absence of direct producer protection. Nevertheless, without complementary supply-side interventions the stimulus remains insufficient to offset the losses experienced under tariff liberalization. Overall, the GTAP results highlight the divergent implications of policy design where trade liberalization favors import expansion but constrains local industry while VAT reforms reinforce domestic demand and stabilize production.

Structural and employment implications

The contraction of import-competing food industries under trade liberalization carries broader structural and social implications for Sri Lanka's agri-food economy. The sugar and edible oil sectors which collectively provide substantial rural employment and contribute to value-added processing face reduced industrial utilization rates when import tariffs are abolished. This may lead to factory underutilization, job losses and reduced incomes in agro-processing regions. Similarly, the contraction in milk powder processing could discourage domestic dairy collection networks and downstream linkages with smallholder farmers. These effects weaken the industrial and employment base of the food sector with possible multiplier impacts on rural livelihoods and local economies. Moreover, declining domestic value addition implies an increased reliance on imported processed foods while potentially displacing opportunities for small and medium-scale enterprises (SMEs) engaged in food manufacturing.

From a structural perspective, the results suggest that Sri Lanka's current food production system remains only partially competitive under global price conditions. The combination of high input costs, limited economies of scale and infrastructural constraints restricts its capacity to withstand the pressures of full liberalization. On the other hand, domestic VAT reforms enhance short-term household demand and indirectly support local producers by maintaining purchasing power. Over time, sustained growth in domestic consumption particularly for rice, vegetables and other staples which could stimulate backward linkages in promoting employment and investment in related input and logistics sectors. Therefore, while trade liberalization may offer efficiency gains at the macro level,

its uneven impact across sectors highlights the need for differentiated support mechanisms that protect vulnerable industries and foster inclusive growth in the food system.

Subsidy and support mechanisms

Given the clear asymmetries in industrial responses, a strategic policy approach combining fiscal incentives and targeted subsidies is essential to preserve domestic production capacity without reversing liberalization gains. Production-oriented subsidies such as input subsidies for fertilizers and feed, concessional credit for food processors or output-based incentives linked to efficiency can mitigate the negative effects of import competition and stimulate domestic investment. These instruments are particularly effective when tied to performance criteria such as productivity improvement or export readiness in ensuring that fiscal support fosters competitiveness rather than dependency. For example, a targeted dairy sector subsidy aimed at improving cold-chain logistics and quality standards could counterbalance the adverse impacts observed in milk powder processing while similar interventions in the edible oil and sugar sectors could support cost reduction and technology adoption.

Moreover, fiscal instruments such as tax credits or partial VAT refunds for local producers can strengthen domestic supply response under VAT reforms in enhancing their ability to compete with imported goods. Integrating production support with trade and fiscal policy reforms therefore provides a more coherent policy mix one that aligns price stability for consumers with resilience for producers. However, such subsidies must be fiscally sustainable and time-bound as they gradually phased out as industries become more competitive. This approach allows Sri Lanka to maintain the social and economic benefits of domestic food production while leveraging the efficiency gains from liberalized trade. Ultimately, a well-calibrated subsidy framework serves as a bridge between short-term adjustment and long-term structural transformation in supporting employment, value addition and rural development in the evolving food economy.

4.4.3. Price effects and household consumption

Price changes across major food commodities

The simulation results indicate that trade liberalization, fiscal reforms and price regulation have powerful but divergent effects on consumer food prices across key commodities in Sri Lanka. Under the import tariff elimination scenario (IMT), the removal of all border taxes leads to significant price declines across almost every major imported food item. Prices of milk powder, edible oils and sugar fall by 20.07 percent, 22.53 percent and 12.3 percent respectively while the prices of cereals, rice, vegetables and wheat flour decline between 10 and 18 percent. These reductions demonstrate the strong price-transmission effects of tariff liberalization through international markets in improving affordability and purchasing power for consumers. When maximum retail price (MRP) regulation is introduced alongside tariff elimination (IMTMP), price declines intensify further milk powder prices drop by 28 percent, rice by 25.7 percent and edible oils by over 30 percent. This combination of policies magnifies the consumer gains from lower import costs by directly capping retail margins and stabilizing market prices in ensuring that cost reductions are fully transmitted to end consumers.

Similarly, the removal of the 18 percent domestic VAT on locally produced foods (DMT) leads to a uniform reduction in food prices of around 17 percent across most commodities. The addition of MRP (DMTMP) further lowers prices by over 26 percent while suggesting that fiscal and regulatory

instruments can jointly achieve meaningful price relief for consumers without resorting to heavy subsidies. These combined effects are particularly significant for low- and middle-income households whose budgets are dominated by food expenditure. Lower retail prices translate directly into improved affordability and food security by expanding access to calorie- and nutrient-rich foods such as rice, milk powder and edible oils. However, while tariff liberalization achieves the largest short-term price reductions, it simultaneously suppresses domestic production and may compromise long-term market stability. In contrast, VAT and MRP reforms deliver broad-based affordability gains while maintaining a stronger domestic production base in highlighting their strategic advantage as instruments of inclusive and sustainable price policy.

Food expenditure and demand patterns

The impact of these price changes on household consumption expenditure is both statistically significant and economically meaningful. The GTAP simulations show that under IMT, total household expenditure on food falls by approximately 2 percent in reflecting the immediate pass-through of lower import prices. When MRPs are applied concurrently (IMTMP), expenditure declines further by 4.4 percent while underscoring the role of retail price ceilings in reinforcing affordability. Under domestic VAT removal, the decline in expenditure is more dramatic by 17.15 percent under DMT and 26.68 percent under DMTMP in indicating that consumption tax reforms directly influence purchasing power. These results imply that domestic fiscal measures are more effective than trade liberalization in reducing household spending burdens, primarily because VAT affects the entire consumption basket rather than just imported goods.

The observed reductions in expenditure have two critical implications for household welfare. First, lower food spending allows households especially those in lower-income deciles to reallocate expenditure toward non-food essentials such as education, health or housing in contributing to broader welfare improvements. Second, reduced prices for staple and nutrient-rich foods encourage increased consumption diversity while enabling households to purchase more protein, fat and vitamin-rich items that were previously less affordable. This is particularly relevant for urban poor and rural wage labor households who are disproportionately affected by price inflation in essential food categories. The findings echo international evidence from countries such as Mexico and South Africa where targeted VAT reductions on basic foods led to measurable improvements in calorie consumption and diet adequacy among low-income populations (Nicita, 2009; Gadenne and Singhal, 2014). Overall, the simulations suggest that domestic VAT reforms particularly when combined with MRP enforcement represent a more effective and equitable pathway to improving food affordability and consumption stability than across-the-board tariff liberalization.

Price stabilization and targeted consumer subsidies

While MRPs and VAT reforms play a central role in price stabilization, their success ultimately depends on complementary fiscal and social instruments that ensure both affordability and sustainability. Price ceilings alone can protect consumers from sudden inflation but may lead to supply distortions if producers are unable to recover costs. In this context, targeted consumer subsidies or transfer mechanisms become crucial for maintaining market balance while safeguarding household welfare. Such subsidies can take multiple forms: direct cash transfers for low-income households, food vouchers for essential commodities or transport and storage subsidies that reduce distribution costs. When well-

targeted, these interventions prevent price spikes without disincentivizing production or overburdening public finances.

For example, the government could introduce a temporary nutrition-sensitive consumer subsidy focusing on high-protein and micronutrient-rich items such as milk powder and fortified cereals. This would offset the regressive effects of indirect taxes on poor households while improving dietary quality. Similarly, subsidies on logistics or import handling fees for essential goods could reduce price volatility during periods of global supply disruption in aligning with the objectives of MRP enforcement. The fiscal savings realized from VAT reduction could partially finance such targeted support while creating a self-reinforcing policy cycle that enhances welfare without large fiscal deficits. International experiences show that well-designed subsidy systems like those implemented in Indonesia and Egypt can protect vulnerable populations while maintaining market efficiency when paired with digital targeting and transparent monitoring systems. For Sri Lanka, integrating targeted subsidies with MRPs and VAT reforms would ensure a balanced approach one that enhances food affordability, stabilizes consumption and sustains fiscal discipline.

4.4.4. Nutrition and food availability

Nutrient availability through trade and production channels

The simulation results highlight that Sri Lanka's trade and fiscal policy reforms have significant implications for national food and nutrient availability which operate through both import and production channels. Under the import tariff elimination scenario (IMT), the substantial increase in imported food volumes particularly of milk powder (+42.7 percent), rice (+32.74 percent) and edible oils (+29.16 percent) translates directly into higher availability of calorie- and nutrient-rich commodities. These increases enhance the supply of dietary energy and fat particularly from imported edible oils and cereals while imported milk powder improves access to animal protein and calcium. When maximum retail price (MRP) regulation is introduced alongside tariff removal (IMTMP), the effect intensifies as household access to these items rises further due to lower retail prices. In this context, nutrient availability from imports increases significantly in reflecting improved physical and economic access to food. However, this expansion occurs at the expense of domestic production capacity with major food processing industries contracting sharply under the same scenario. As a result, while aggregate nutrient availability may improve in the short term, reliance on imports introduces new vulnerabilities related to supply continuity and exchange rate volatility.

Under domestic VAT removal (DMT) and VAT removal with MRP (DMTMP), improvements in nutrient availability stem from a different mechanism enhanced household purchasing power and increased affordability of locally produced foods. These reforms lower the prices of domestically produced staples such as rice and vegetables by nearly 17–27 percent while encouraging higher household consumption of fresh, nutrient-dense foods. Because VAT reforms have only marginal effects on import volumes, they simultaneously preserve domestic production incentives in ensuring a more stable food supply base. The inclusion of MRPs further amplifies affordability gains in broadening household access to both staples and supplementary foods including dairy and vegetable products. Taken together, the results demonstrate that while tariff liberalization improves food availability primarily through expanded imports, domestic tax reforms achieve similar outcomes through internal market channels that support sustainable food security and local resilience. The key distinction lies in balance: import-driven availability may improve macro-level supply indicators but risks undermining domestic

production stability whereas VAT-led affordability strengthens nutrient access while safeguarding production capacity.

Dietary diversity and nutrition transition

The observed policy impacts have broader implications for Sri Lanka's dietary structure and ongoing nutrition transition. The country's dietary profile remains dominated by rice which provides nearly 50 percent of daily calorie intake, but rising urbanization and income growth have diversified consumption patterns toward wheat-based products, milk powder, edible oils and processed foods. The results of the simulations show that policy-induced price reductions particularly under IMTMP and DMTMP, while further accelerating this shift by making processed and imported foods more affordable relative to traditional staples. Lower prices for milk powder and edible oils enhance access to key nutrients such as proteins and fats while addressing existing deficiencies in animal-sourced foods and energy intake among lower-income households. Similarly, reduced vegetable prices contribute to higher consumption of micronutrient-rich foods in mitigating vitamin and mineral deficiencies.

However, these changes also highlight the dual nature of Sri Lanka's nutrition transition. Increased affordability of processed imports may over time alter dietary preferences toward high-calorie, low-nutrient foods if not accompanied by nutrition-sensitive guidance and policy oversight. Experiences from other liberalizing economies indicate that rapid dietary westernization can lead to rising obesity and non-communicable diseases despite short-term gains in food access (Popkin, 2017; Hawkes, 2006). Therefore, while fiscal and price policies can substantially improve dietary diversity and nutrient adequacy, they must be carefully integrated with broader nutrition education and regulation strategies. From a food systems perspective, the combination of VAT reduction and MRP regulation (DMTMP) appears most balanced in enhancing dietary diversity, improving nutrient adequacy and preserving domestic production. It achieves this by reducing relative prices of both domestic and imported nutrient sources while encouraging mixed consumption patterns that support healthier and more resilient diets.

Nutrition-sensitive fiscal instruments

The interplay between fiscal policy, food prices and nutrition outcomes underscores the critical role of nutrition-sensitive fiscal instruments in achieving sustainable food security. The results demonstrate that while trade liberalization can temporarily expand access to nutrient-rich imports, domestic VAT reforms are better suited to foster equitable and enduring nutrition improvements. Building on these findings, targeted fiscal measures such as VAT exemptions or rate reductions on essential and fortified foods could be strategically designed to align price incentives with nutritional goals. For instance, maintaining reduced VAT rates on fresh vegetables, pulses and milk products while imposing higher rates on sugary or highly processed foods could steer consumption toward healthier alternatives without sacrificing fiscal revenue.

In addition, nutrition-sensitive subsidies can complement VAT and MRP reforms by addressing affordability gaps among low-income households. Subsidizing the retail cost of fortified cereals, milk powder for children or pulses could directly improve the nutrient intake of nutritionally vulnerable groups particularly in rural and estate sectors. These measures would extend the welfare gains identified under DMT and DMTMP scenarios in converting price and expenditure benefits into tangible improvements in dietary quality. Moreover, allocating part of the fiscal space generated by improved efficiency under VAT reforms toward nutrition-targeted programs such as school meal initiatives or

maternal food transfers could reinforce human capital development. The integration of fiscal, trade and social protection measures therefore represents the most effective route toward nutrition-sensitive policy design. In this regard, the DMTMP scenario offers an empirically grounded policy pathway that combines fiscal reform, price stabilization and targeted subsidy alignment to enhance nutrient availability while preserving economic and fiscal stability.

4.4.5. Welfare impacts

Aggregate welfare decomposition

The results of the welfare decomposition analysi which was derived from the GTAP simulations reveal pronounced contrasts in the direction and magnitude of welfare outcomes under trade liberalization versus domestic fiscal reforms. The Equivalent Variation (EV) expressed in monetary terms shows that import tariff removal (IMT) and tariff removal with MRP regulation (IMTMP) both lead to net welfare losses for Sri Lanka whereas domestic VAT reforms (DMT and DMTMP) produce substantial welfare gains. Under IMT, welfare declines due to adverse movements in the terms of trade (−US$273.84 million) and investment and savings effects (−US$250.72 million) which collectively outweigh modest gains in allocative efficiency (+US$373.64 million). This pattern intensifies under IMTMP, where the addition of price controls amplifies distortions while resulting in an even larger deterioration in the terms of trade (−US$678.15 million) and a further decline in investment and savings (−US$700.4 million), despite improved allocative efficiency (+US$703.95 million). These results suggest that while trade liberalization enhances resource allocation efficiency, the accompanying macroeconomic adjustments particularly deteriorating trade prices and declining investor confidence offset these gains in leading to an overall contraction in welfare.

In sharp contrast, domestic VAT reforms generate robust welfare improvements across all key components. Under the DMT scenario, total welfare increases by US$299.78 million supported by positive contributions from allocative efficiency (+US$110.05 million), improved terms of trade (+US$132.42 million) and a favorable investment and savings effect (+US$57.31 million). The combined VAT–MRP reform (DMTMP) amplifies these effects further while yielding the highest overall welfare gain of US$466.32 million driven by even stronger efficiency and trade effects. These results indicate that internal fiscal policy adjustments enhance household purchasing power and stimulate domestic demand without compromising external balances. By simultaneously reducing food prices, improving consumption and maintaining investment confidence, VAT reforms achieve a more stable and inclusive form of welfare improvement. This evidence underscores that for Sri Lanka's small open economy, domestic tax instruments are more effective than border liberalization in achieving welfare and equity gains while preserving macroeconomic stability.

Distributional welfare and equity effects

Beyond aggregate welfare outcomes, the underlying structure of these effects reveals important insights into distributional dynamics and equity. Since low-income households allocate a disproportionately higher share of expenditure to food, they are more sensitive to food price changes and fiscal policy adjustments. The decline in food prices under both trade and tax reforms therefore delivers immediate welfare benefits to these groups. However, the source and sustainability of these benefits differ markedly between the two policy regimes. Under tariff liberalization (IMT and IMTMP), welfare gains for consumers are largely temporary and concentrated in urban markets, where imported food availability is higher. In contrast, rural households and domestic producers face welfare

losses due to falling producer prices, reduced farmgate demand and employment contraction in food-processing sectors. This internal divergence explains why, despite lower consumer prices, the overall national welfare balance remains negative.

Under VAT reforms, welfare improvements are more broad-based and equitable. The reduction in domestic consumption taxes directly benefits all households irrespective of whether they consume imported or locally produced foods. As domestic prices fall across the board, both urban and rural consumers experience tangible improvements in real income and food affordability. Moreover, since domestic production remains relatively stable under these reforms, rural employment and farm incomes are better preserved. This dual channel enhanced purchasing power and sustained production which helps narrow welfare disparities between income groups. From a distributional perspective, the DMTMP scenario performs best as the inclusion of MRPs further insulates low-income consumers from price volatility while maintaining positive macroeconomic welfare effects. The welfare results thus emphasize that fiscal policy instruments such as VAT removal are not only more efficient in improving aggregate welfare but also more socially inclusive, aligning with poverty reduction and inequality mitigation objectives.

Fiscal transfers and social protection subsidies

While VAT reforms generate the largest welfare gains, their long-term sustainability and equity can be further reinforced through well-targeted fiscal transfers and social protection subsidies. The welfare decomposition results indicate that part of the gains in allocative efficiency and investment under DMT and DMTMP scenarios could be reinvested in social safety nets that protect vulnerable households from future food price shocks. For instance, the government could strengthen existing programs such as Samurdhi by linking cash transfers to nutrition objectives in providing higher benefits for households with children, pregnant women or elderly dependents. These transfers would not only enhance food affordability but also improve diet quality in translating macro-level welfare gains into tangible human development outcomes.

Additionally, nutrition-sensitive subsidies, for example, price support for fortified foods, school meal programs, or food vouchers for low-income households could help sustain welfare gains and mitigate regressive effects of future fiscal adjustments. Such subsidies act as automatic stabilizers, cushioning poor households during economic downturns or external shocks while preserving their access to essential nutrients. Importantly, these instruments can be designed to remain fiscally neutral by redirecting a portion of the welfare surplus from VAT reform or by reprioritizing existing subsidy expenditure away from generalized price controls. International evidence from Indonesia and Egypt shows that targeted food subsidy systems, when paired with efficient fiscal reforms, can simultaneously improve welfare outcomes and reduce fiscal leakage. In Sri Lanka's context, institutionalizing such targeted transfers within the framework of VAT and MRP reforms would ensure that welfare gains remain both inclusive and sustainable in supporting the transition toward a resilient, nutrition-sensitive and socially equitable food system.

4.4.6. Trade agreements and regional integration

Role of existing trade agreements

Sri Lanka's trade performance under the modelled policy scenarios is deeply intertwined with its existing regional and bilateral trade frameworks, particularly the Indo–Sri Lanka Free Trade Agreement

(ISFTA) and the South Asian Free Trade Area (SAFTA). These agreements already grant preferential access for a wide range of food commodities in explaining the strong expansion of imports from India observed in the GTAP simulations. Under the IMT and IMTMP scenarios, India emerges as the dominant source of food imports with significant increases in cereals, milk powder, edible oils and processed foods. This outcome reflects India's established comparative advantage and logistical proximity which together reinforce its position as Sri Lanka's primary supplier of essential staples. The presence of preferential trade arrangements amplifies the effects of tariff removal since marginal tariff cuts under ISFTA and SAFTA immediately translate into large price reductions for key imports.

However, the simulations also reveal that while these agreements facilitate import growth and lower consumer prices they can worsen structural vulnerabilities in Sri Lanka's food system. The overwhelming reliance on India for critical food imports creates a high degree of trade concentration risk while exposing the country to external supply disruptions, export restrictions or price shocks originating in a single market. In particular, commodities such as sugar, wheat flour and milk powder of which India accounts for more than 50 percent of imports represent potential chokepoints in the national food supply chain. Furthermore, the benefits of regional liberalization have not been equally distributed across sectors such as domestic food industries that compete directly with imported goods such as edible oil refining and sugar processing that experience pronounced output contractions. This higlights the need to recalibrate trade agreement utilization in leveraging their advantages for consumer welfare while introducing domestic safeguards that sustain production and employment.

Diversification and supply chain resilience

The dependence on a narrow set of regional trade partners highlights the importance of diversification and resilience-oriented trade policy. While the GTAP results confirm that India's dominance drives most of the observed import expansion, they also indicate potential for gradual reallocation toward other regional and global suppliers. For example, moderate import growth is simulated from Indonesia (for edible oils), Pakistan and Nepal (for cereals), and Australia and Malaysia (for processed foods and dairy ingredients). These shifts suggest emerging opportunities for Sri Lanka to strategically diversify its import base through broader engagement within BIMSTEC, ASEAN and other regional trade initiatives. Diversification would reduce exposure to localized shocks while enhancing bargaining power in price negotiations and logistical arrangements.

To capitalize on these opportunities, Sri Lanka's trade policy should prioritize strengthening infrastructure connectivity, quality assurance and logistics efficiency to expand sourcing options. This includes investments in port facilities, cold chain systems and food safety certification that enable diversified sourcing of perishable and high-value food commodities. At the same time, domestic regulatory coherence is crucial in ensuring that sanitary and phytosanitary (SPS) measures, standards harmonization and customs procedures align with regional agreements. Through such institutional strengthening, trade liberalization can evolve from a purely price-based mechanism into a resilience-enhancing instrument that stabilizes the national food supply while supporting consumer welfare. This approach aligns with the FAO's vision of resilient agrifood systems which emphasizes balanced import reliance coupled with regional cooperation and domestic production support.

Aligning trade agreements with fiscal and nutrition policy

The evidence from the GTAP simulations also illustrates that trade agreements cannot be viewed in isolation from fiscal and nutrition policies. While preferential trade arrangements reduce border

barriers and improve affordability, they may conflict with domestic fiscal objectives if tariff revenue losses are not offset through internal taxation. The contrast between the welfare losses under IMT/IMTMP and the gains under DMT/DMTMP demonstrates this tension clearly and trade liberalization improves consumer prices but undermines fiscal space whereas VAT reforms enhance affordability without destabilizing the macroeconomic balance. Integrating fiscal coordination mechanisms within regional trade frameworks could help reconcile these competing objectives. For example, establishing a regional food price stabilization fund under SAFTA or BIMSTEC could allow member countries to manage revenue volatility and support targeted subsidies during price shocks.

Moreover, regional trade agreements can be harnessed to advance nutrition-sensitive trade policy. By negotiating preferential terms for nutrient-dense or fortified foods such as pulses, dairy and micronutrient-enriched cereals, Sri Lanka could ensure that trade liberalization directly contributes to public health outcomes. Similarly, regional cooperation in food safety standards and nutrition labeling could help prevent the inflow of low-quality processed foods that contribute to diet-related diseases. These synergies between trade and nutrition policy are particularly relevant under the DMTMP framework where price stabilization and fiscal reform already create favorable conditions for improving dietary diversity. Aligning trade commitments with nutrition and fiscal objectives would thus allow Sri Lanka to move from a reactive trade stance toward a proactive and integrated strategy that leverages regional partnerships to enhance food security, nutrition and welfare simultaneously.

4.4.7. Comparative analysis of policy scenarios

Overview of policy trade-offs

The four simulated policy scenarios which are Import Tariff Removal (IMT), Import Tariff Removal with Maximum Retail Price regulation (IMTMP), Domestic VAT Removal (DMT) and Domestic VAT Removal with MRP (DMTMP) present a spectrum of trade-offs between efficiency, affordability, production stability and fiscal sustainability. The results demonstrate that while trade liberalization policies (IMT and IMTMP) generate strong short-term gains in consumer affordability through lower import prices, they simultaneously induce significant contractions in domestic food industries, deteriorate the trade balance and erode government revenue. In contrast, fiscal policy reforms (DMT and DMTMP) yield comparable or greater improvements in food affordability and household welfare, but with far fewer adverse impacts on production and macroeconomic stability.

Specifically, the IMT scenario achieves moderate improvements in allocative efficiency and import growth but results in a net welfare loss due to worsening terms of trade and declining investment. The addition of MRP (IMTMP) intensifies consumer price reductions but exacerbates distortions in production and investment in deepening the overall welfare decline. Meanwhile, the DMT and DMTMP scenarios display a contrasting pattern as both deliver positive welfare outcomes supported by strong allocative and trade gains with DMTMP producing the highest overall welfare gain (+US$466.32 million). This divergence highlights a central insight from the SACIN analysis as domestic fiscal reforms outperform trade liberalization in achieving sustainable improvements in welfare, food affordability and nutrition while minimizing macroeconomic risk.

Economic efficiency and production stability

From a production standpoint, trade liberalization under IMT and IMTMP sharply weakens domestic food processing and value-added sectors. The removal of tariffs exposes import-competing industries

particularly sugar, edible oils and milk powder processing to intense price competition in leading to output contractions ranging from 20 to 40 percent. MRP regulation compounds these effects by compressing producer margins further. Conversely, domestic VAT removal under DMT and DMTMP preserves local production capacity while stimulating consumer demand. Lower VAT rates reduce final prices without undermining producer incentives while leading to mild output increases in staple food sectors such as rice and vegetables. This demonstrates that domestic fiscal reforms provide a more stable environment for industrial and agricultural development in protecting employment and supporting rural incomes.

The analysis also highlights differences in structural resilience. Under IMT and IMTMP, Sri Lanka's dependence on imported food supplies increases substantially in heightening vulnerability to external shocks. By contrast, under DMT and DMTMP, the country achieves greater food system balance in combining moderate import growth with sustained domestic output. The ability to maintain both domestic and imported sources of food supply enhances resilience and reduces exposure to price and supply volatility. Therefore, while trade liberalization improves efficiency on paper, it does so at the cost of production stability whereas VAT reforms achieve comparable efficiency gains through demand-side expansion that strengthens the domestic production base.

Price, consumption and nutrition outcomes

The comparative results also show that all four policy scenarios lead to lower consumer food prices though the magnitude and inclusiveness of these gains vary. Tariff removal (IMT) lowers import prices by 10–20 percent while MRP regulation (IMTMP) further amplifies reductions by an additional 8–10 percentage points. However, the benefits are unevenly distributed with urban consumers capturing the bulk of the gains due to better access to imported products. VAT reforms, on the other hand, generate broader and deeper affordability improvements in reducing overall food prices by 17 percent under DMT and by 26 percent under DMTMP. Because VAT reductions apply across all commodities including domestically produced foods, their benefits extend to both urban and rural consumers.

These affordability gains translate into substantial improvements in household consumption and nutrition. Under DMT and DMTMP, total household food expenditure falls by 17–27 percent in freeing resources for non-food essentials and improving dietary diversity. Calorie and protein intake increase due to expanded consumption of rice, milk powder and edible oils while lower vegetable prices enhance micronutrient availability. Importantly, the DMTMP scenario combines the advantages of fiscal reform and price regulation in producing the most balanced improvements in affordability, dietary quality and nutrition security. It ensures that food price reductions reach the most vulnerable groups without destabilizing domestic supply or fiscal balance a feature not achieved under trade liberalization scenarios.

Welfare, fiscal and equity dimensions

Comparative welfare analysis confirms that fiscal policy reforms deliver the highest and most inclusive welfare gains. Both IMT and IMTMP generate negative welfare outcomes driven by deteriorating terms of trade (−US$273.84 million and −US$678.15 million respectively) while DMT and DMTMP yield significant positive gains (+US$299.78 million and +US$466.32 million). The welfare improvements under VAT reforms stem from enhanced allocative efficiency, stable investment and improved purchasing power. Moreover, they are more equitably distributed across income groups because VAT reductions benefit all consumers rather than only those with access to imported goods.

From a fiscal perspective, the removal of import tariffs under IMT and IMTMP erodes customs revenue and widens the trade deficit in constraining fiscal space for social programs. In contrast, VAT reforms maintain fiscal stability by shifting the policy burden from border taxation to domestic consumption an approach that can be fine-tuned to protect revenue while improving affordability. When paired with targeted consumer or nutrition subsidies, as discussed in earlier sections, VAT reforms can further enhance equity without overstraining public finances. The DMTMP scenario thus stands out as the most fiscally balanced and socially inclusive policy pathway, integrating economic efficiency with distributive justice and nutrition sensitivity.

Synthesis: Toward an optimal policy mix

Taken together, the comparative evidence indicates that Sri Lanka's optimal reform pathway lies not in aggressive trade liberalization but in a hybrid fiscal–regulatory framework that balances affordability, stability and sustainability. Among the four scenarios, DMTMP emerges as the most comprehensive and welfare-enhancing option in offering the highest welfare gain, the largest reduction in household food expenditure, and the broadest improvements in dietary quality all while preserving production incentives and fiscal stability. The combination of domestic VAT removal and MRP regulation allows the benefits of lower consumer prices to be widely shared in ensuring that gains in affordability do not translate into long-term structural vulnerabilities.

The policy synthesis suggests that Sri Lanka should prioritize fiscal reform (VAT-based) as the core mechanism for enhancing affordability and complemented by selective price stabilization (MRPs) and targeted subsidies for vulnerable households. Trade liberalization, in contrast, should be pursued selectively and strategically in focusing on commodities that fill domestic production gaps rather than displacing local industries. This balanced policy mix aligns with national objectives of achieving food security, fiscal discipline and nutrition equity while positioning the economy for resilient and inclusive growth.

4.5. Policy Recommendations

4.5.1. Rebalancing trade and fiscal policies for food system stability

The results of the CGE-GTAP simulations clearly demonstrate that uncoordinated trade liberalization such as the complete removal of import tariffs while improving short-term consumer affordability can undermine long-term production sustainability and fiscal resilience. Therefore, Sri Lanka's future policy direction should prioritize a rebalancing of trade and fiscal policy to achieve both efficiency and stability. Rather than pursuing across the board tariff reductions, a selective and phased liberalization strategy is recommended in focusing on commodities where domestic production is structurally constrained such as wheat, milk powder and edible oils while maintaining moderate protection for sectors with domestic potential including rice, vegetables and pulses.

Complementing this approach, domestic VAT reforms should be the primary instrument for achieving food affordability. The simulation results consistently show that VAT removal on essential food commodities yields the largest welfare and nutrition gains in outperforming tariff liberalization in every macroeconomic and distributional dimension. However, VAT reforms should be targeted and tiered in retaining higher rates for non-essential processed foods and luxury imports while maintaining zero or minimal rates for staple and nutrient-dense items. This would balance fiscal sustainability with equity

in ensuring that affordability gains are concentrated where they matter most among low and middle income households.

4.5.2. Enhancing domestic production and value addition

Given the contraction of domestic industries observed under tariff liberalization, it is crucial to strengthen local production capacity through supply side support measures that enhance competitiveness, resilience and value addition. Policy measures should include:

- Targeted input subsidies (e.g., fertilizers, feed and energy) tied to productivity benchmarks to reduce cost disparities with imported goods.
- Investment incentives and concessional credit for agro-processing enterprises particularly in milk, sugar and edible oil sectors to modernize production technologies and improve efficiency.
- Public–private partnerships for cold chain infrastructure, storage and quality assurance systems to reduce post-harvest losses and improve market access.

In the long term, Sri Lanka should aim to shift from a defensive import substitution model toward a competitive agri-industrial strategy that integrates domestic production with regional value chains. By aligning industrial incentives with fiscal reforms, the country can sustain local employment and rural incomes while maintaining the consumer affordability gains achieved through VAT and MRP adjustments.

4.5.3. Strengthening trade policy within regional agreements

Sri Lanka's regional trade agreements particularly the Indo–Sri Lanka Free Trade Agreement (ISFTA) and the South Asian Free Trade Area (SAFTA) should be leveraged strategically to enhance food security and resilience rather than simply promoting import dependence. The GTAP results highlight India's overwhelming dominance in Sri Lanka's food import structure in creating both benefits and vulnerabilities. To mitigate concentration risks, Sri Lanka should pursue diversification of import sources through deeper engagement with BIMSTEC and ASEAN partners in expanding access to competitively priced and high-quality food products.

At the same time, existing trade agreements should incorporate safeguard clauses that protect vulnerable domestic industries from import surges and allow temporary policy flexibility during market disruptions. Regional coordination on food price stabilization, nutrition standards and quality certification could further enhance resilience. Establishing a regional food security and nutrition platform under SAARC or BIMSTEC would allow member countries to pool data, coordinate supply management and respond collectively to price shocks in ensuring that trade integration supports rather than undermines national food security objectives.

4.5.4. Integrating price regulation, subsidies and social protection

The introduction of Maximum Retail Price (MRP) regulation in combination with fiscal reform has proven highly effective in stabilizing consumer prices and preventing excessive market margins. However, MRPs should be accompanied by well-designed targeted subsidies to sustain affordability for vulnerable groups while minimizing market distortions. Subsidies could be linked to priority food groups such as milk powder, pulses and fortified foods or channelled through cash transfers and food vouchers for nutritionally at-risk households.

A transition from blanket subsidies toward nutrition-sensitive social protection programs for instance expanding Samurdhi benefits with a nutrition focus or strengthening school feeding programs would ensure that the welfare gains identified under the DMTMP scenario translate into tangible human development outcomes. These interventions should be digitally targeted and time-bound in ensuring fiscal efficiency and transparency. By integrating MRPs with targeted subsidies and social transfers, Sri Lanka can achieve a coherent system that cushions consumers from shocks while preserving fiscal discipline and producer viability.

4.5.5. Promoting nutrition-sensitive fiscal reform

A key policy priority emerging from this analysis is the need to institutionalize nutrition-sensitive fiscal policy. VAT and excise tax structures should be explicitly aligned with nutritional objectives:

- Maintain zero or minimal VAT rates on fresh produce, pulses, dairy and fortified foods.
- Impose higher VAT or excise rates on ultra-processed, sugary or high-fat foods to discourage unhealthy consumption patterns.
- Use part of the revenue generated from such differential taxation to fund nutrition education, school meal programs and maternal health initiatives.

Integrating nutrition considerations into fiscal reform will ensure that price incentives support healthy dietary choices while maintaining fiscal balance. Over time, this can help address Sri Lanka's dual burden of undernutrition and rising diet-related non-communicable diseases in transforming fiscal policy into a driver of public health as well as economic stability.

4.5.6. Building policy coherence and institutional coordination

Finally, achieving the desired outcomes from trade, fiscal and nutrition reforms requires strong institutional coordination across ministries and agencies. The Ministry of Finance, Ministry of Trade and Ministry of Agriculture must work in concert to design and monitor integrated policies that align price stabilization, revenue management and food system resilience. Establishing a National Food and Nutrition Policy Coordination Unit could facilitate data sharing, monitor cross-sectoral policy impacts and ensure that short-term interventions are consistent with long-term development objectives.

Moreover, regular impact assessments using updated CGE and microsimulation models should be institutionalized within the policy cycle. This would enable Sri Lanka to track the welfare, fiscal and nutrition outcomes of ongoing reforms and adjust policies dynamically in response to global and domestic shocks. By embedding analytical capacity within policy institutions, the country can ensure that trade and fiscal reforms remain evidence-based, adaptive and aligned with the overarching goals of food security, equity and sustainable economic growth.

CHAPTER 5

DEMOGRAPHIC DIMENSIONS

Sri Lanka's food and nutrition systems are embedded within a complex web of demographic, socioeconomic and gendered inequalities that shape how individuals and households access, consume and benefit from food. The qualitative evidence generated through Focus Group Discussions (FGDs) and Key Informant Interviews (KIIs) across Colombo, Kurunegala, Jaffna and Nuwara Eliya reveals significant heterogeneity in food access, affordability and dietary behavior reflecting the interaction between structural economic conditions, cultural norms and spatial disparities. Understanding these demographic and equity dimensions is crucial to the SACIN framework which emphasizes the need for inclusive, context-sensitive policies that address the uneven distribution of nutritional opportunities and burdens within the population. This chapter examines how variations in income, occupation, gender and geography translate into differentiated nutritional outcomes, dietary transitions and coping strategies. By exploring intra-household food dynamics, gendered labor roles and the socioeconomic determinants of dietary practices, the chapter provides an integrated analysis of how inequities are embedded within Sri Lanka's evolving food economy and highlights pathways for promoting fairness and resilience in nutrition governance.

5.1. Theoretical Background

Understanding demographic and equity dimensions in food and nutrition systems requires a multidimensional theoretical foundation that connects behavioral, social and structural determinants of dietary outcomes. This chapter draws upon Contento's model of food choice and dietary behavior (Contento et al., 2011) which conceptualizes food decisions as outcomes of interlinked influences operating across three broad levels: individual factors, social and environmental factors, and policy and structural factors (Figure 5.1). This framework complements and deepens SACIN's equity-oriented perspective by recognizing that nutrition is not only a matter of personal preference or knowledge, but also a function of social context, market accessibility and policy environments.

At the individual level, food choices are influenced by biological needs such as hunger, appetite and taste preferences alongside psychological factors including attitudes, beliefs and nutrition knowledge. Personal experiences such as exposure to specific foods, cultural background and habitual dietary practices shape how individuals perceive food and health. In the Sri Lankan context, these individual factors interact with local traditions and evolving lifestyles especially in urban areas where convenience and taste often outweigh nutritional considerations. Adolescents and adults alike reported that fast foods are chosen not only for availability but also for social desirability in reflecting the behavioral dimension of diet choices identified in Contento's framework.

At the social and environmental level, food behaviors are conditioned by interpersonal influences, community norms and the physical food environment. Household food availability, parental practices and peer preferences play decisive roles in shaping dietary patterns as evidenced by qualitative findings across all districts. Cultural norms and religious traditions also guide food practices while the pervasive influence of media and marketing including branding, television advertising and social media

promotions which creates aspirational consumption habits particularly among youth. Economic constraints further mediate these social influences: affordability and accessibility limit the ability of households to make healthy food choices in compelling them to prioritize cost over quality. These factors underscore how environmental and social contexts can either facilitate or hinder equitable dietary behavior.

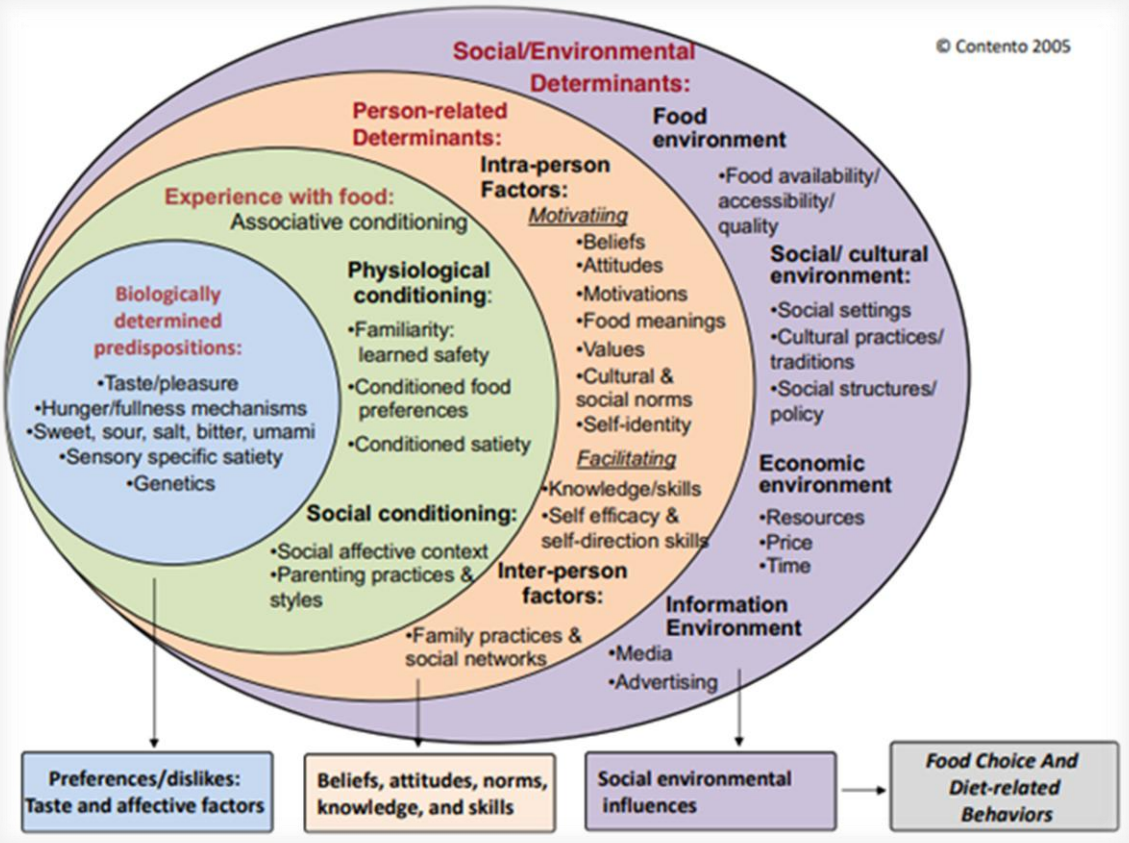

Figure 5.1. Determinants of food choices and diet-related behaviors

This model illustrates the multi-level determinants influencing individual dietary behaviors. It conceptualizes food choices as outcomes of interconnected factors operating across three domains: individual factors (biological, psychological and experiential), social and environmental factors (household, cultural, economic and media influences) and policy and structural factors (agricultural, trade, health and regulatory systems). Together, these levels form a comprehensive framework that links personal decision-making with the broader food environment and governance systems shaping nutrition outcomes.

Source: *Adapted from Contento et al. (2011) which is a model of influences on food choice and dietary behavior.*

At the policy and structural level, Contento's model highlights the broader systemic forces that determine the availability, affordability and quality of food within a society. Agricultural and trade policies shape food supply chains, import dependency and the relative prices of essential commodities while fiscal instruments such as subsidies and taxes directly affect consumer purchasing power. In Sri Lanka, the interplay of macroeconomic instability, import restrictions and food price inflation has substantially altered household diets in echoing the structural dimension described by Contento. Health and nutrition policies including dietary guidelines, school meal programs and public health campaigns play a corrective role but are often undermined by weak coordination and limited enforcement. Regulatory measures such as labeling laws, safety standards and incentives for nutritious foods are critical in steering both producers and consumers toward healthier patterns though their implementation remains uneven.

Integrating Contento's model within the SACIN analytical framework provides a comprehensive understanding of nutrition inequities by linking micro-level behavior with macro-level governance. It situates demographic disparities such as those between urban and rural households or between male-headed and female-headed families within broader structural and environmental systems. This theoretical integration underscores that achieving equitable nutrition outcomes requires addressing determinants at all three levels simultaneously: empowering individuals with knowledge and agency, creating supportive social and market environments .and reforming policy and structural systems to ensure inclusive access to affordable and nutritious foods.

5.2. Analytical Framework

The chapter employs a thematic analytical approach guided by SACIN's equity-focused conceptual framework and informed by Contento's (2011) model of food choice and dietary behavior. This analytical structure situates individual and household experiences within broader social and policy contexts in allowing for an integrated understanding of how personal, environmental and institutional factors interact to influence food and nutrition systems. Through iterative coding and triangulation, qualitative insights were synthesized under thematic dimensions corresponding to the chapter's structure included demographic context, dietary patterns, health outcomes, intra-household dynamics, market inequalities and gender relations. Complementary quantitative findings where relevant were used to reinforce and validate these qualitative narratives in ensuring analytical depth without overwhelming technical detail.

This evidence-based and interpretive framework thus allows the chapter to move beyond descriptive findings toward a nuanced understanding of how structural, behavioral and social inequities intersect to shape food and nutrition outcomes in Sri Lanka. The approach aligns with SACIN's overarching aim of linking micro-level lived experiences with macro-level policy discourse in bridging empirical evidence and practical pathways for equitable food system transformation. The analysis presented in this chapter is grounded in the qualitative evidence generated under the SACIN study which complemented by contextual insights from quantitative data. The chapter draws upon a multi-sited qualitative research design that encompassed four districts such as Colombo, Kurunegala, Jaffna, and Nuwara Eliya (Figure 5.2) in representing distinct socio-economic and geographic typologies including urban, rural, post-conflict and estate sector settings. Within each site, data were collected through FGDs with adolescent girls (aged 15–19 years), adolescent boys (aged 15–19 years), adult males (aged 20–60 years), adult females (aged 20–60 years) and pregnant and lactating mothers. This approach allowed for an in-depth understanding of how age, gender and maternal status might influence dietary

practices and perceptions of food system policies. Complementing these discussions, KIIs with community leaders, public health officials or relevant government representatives to gather expert insights and specialized knowledge relevant to the Sri Lankan setting. These participatory engagements captured household and community experiences related to food access, affordability, dietary behavior and coping strategies while also revealing the gendered and demographic patterns that shape nutrition outcomes.

Figure 5.2. Field locations of qualitative study under SACIN project

Source: *SACIN Qualitative Study (2025)*

A total of 20 FGDs and 5 KIIs were conducted across the four study districts (Table 5.1). Prior to the main fieldwork, pre-testing of the discussion and interview guides was carried out in Anuradhapura and Kurunegala districts involving 5 FGDs in Sinhala language for the five groups and 3 FGDs in Tamil language only for three groups including adolescent girls, adult men and adult women respectively to ensure clarity, contextual relevance and consistency of the research instruments. FGD guides and KII guides were developed to achieve following qualitative objectives *(see Annexures).*

Objective 1: Understand current food availability and choices

Objective 2: Perceptions and knowledge about healthy eating and nutritious meals

Objective 3: Understand decision-making and buying behavior

Objective 4: Explore climate impact on food

Objective 5: Understand attitudes on food costs

Objective 6: To explore the impact and challenges of various support programs on food access and nutrition

Objective 7: Assess awareness of trade, fiscal and food policies, guidelines and regulations

Objective 8: Suggestions to improve nutrition

Table 5.1. Number of FGDs and KIIs conducted across the four locations

Location	FGDs			KIIs	
	Ethnicity	Number of FGDs	Target group	Number of KIIs	Target Informants
Colombo (Urban)	Sinhala	5	Adolescent girls	1	Women's society leader
			Adolescent boys		
			Adult males		
			Adult females		
			Pregnant and lactating mothers		
Kurunegala (Rural)	Sinhala	5	Adolescent girls	2	Development Officer (DO) Public Health Midwife (PHM)
			Adolescent boys		
			Adult males		
			Adult females		
			Pregnant and lactating mothers		
Nuwara Eliya (Estate)	Tamil	5	Adolescent girls	1	Community leader
			Adolescent boys		
			Adult males		
			Adult females		
			Pregnant and lactating mothers		

Jaffna (Rural)	Tamil	5	Adolescent girls	1	Public Health Midwife (PHM)
			Adolescent boys		
			Adult males		
			Adult females		
			Pregnant and lactating mothers		

5.3. Results and Discussion

5.3.1. Overview of demographic and socioeconomic context

Sri Lanka's food and nutrition systems are profoundly shaped by the country's demographic diversity and socio-economic stratification. Evidence from FGDs and KIIs conducted across the four districts of Colombo, Kurunegala, Jaffna and Nuwara Eliya demonstrates that nutrition outcomes are intricately linked to spatial, economic and social hierarchies that define people's daily lives. The analysis reveals how geographic location, income sources, occupational structure and community identity collectively determine the extent to which individuals can access, afford and utilize nutritious food. These multidimensional disparities create a patchwork of nutritional realities where urban convenience coexists with rural deprivation and where both affluence and poverty generate distinct yet overlapping vulnerabilities in the national food system.

Urban communities particularly in Colombo operate within a highly monetized and commercialized food environment characterized by heavy dependence on purchased foods. Households in these areas, many of whom are wage dependent or employed in the service sector face intense time constraints and rising living costs. Long working hours, congested living conditions and limited access to land for home cultivation have resulted in a dietary transition toward processed, ready-made and energy-dense foods. The qualitative evidence indicates that such reliance on the urban food market has fostered a dual dynamic while diversity of products is available, affordability and quality remain persistent concerns. Participants frequently noted that despite being surrounded by food outlets, economic pressures and irregular income streams restrict their ability to make healthy choices. As a result, household diets in low-income urban settlements are dominated by inexpensive carbohydrates such as rice and wheat-based products complemented by minimal portions of protein or vegetables. This nutritional compromise driven by financial necessity and constrained time highlights that how economic insecurity translates into poor dietary diversity even within physically food-rich environments.

In contrast, rural populations especially in Kurunegala and certain pockets of Jaffna maintain a stronger connection to agricultural livelihoods and local production systems. Many households rely on self-cultivation or small-scale farming to meet a portion of their dietary needs in engaging in home gardening, seasonal crop production and local exchanges of surplus produce. However, while this self-sufficiency offers a degree of food security, it remains fragile and highly sensitive to environmental and market disruptions. Participants highlighted the recurring effects of erratic rainfall, pest infestations and input cost inflation which frequently reduce agricultural yields and compromise household food

stocks. Furthermore, access to markets is often constrained by poor infrastructure and rising transport costs especially in rural interior areas. These challenges make households in agrarian regions particularly vulnerable during lean seasons, when market dependency increases and food prices peak. Women in these settings who are primarily responsible for food preparation and household management bear a disproportionate burden as they navigate between limited income in fluctuating harvests and rising household expectations.

The situation in the plantation and estate sectors particularly in Nuwara Eliya reflects the compounded effects of historical marginalization and structural exclusion. Estate Tamil communities who remain administratively tied to estate management systems often face barriers to accessing public welfare schemes, health services and subsidized markets. Despite working within the agricultural economy, their control over production resources and decision-making remains minimal. Estate workers frequently reported low wages, irregular employment and limited autonomy over the foods they can purchase or cultivate. The result is a form of nutritional vulnerability that is not simply economic but institutional and rooted in enduring inequalities of land ownership, labor relations and social status. Even when basic food items are available, high dependency on estate canteens and local vendors restricts dietary diversity in perpetuating reliance on inexpensive, starch-heavy meals. This structural dependency contributes to chronic malnutrition, anemia and undernutrition, especially among women and children within these communities.

In Jaffna, the social and economic legacies of conflict continue to shape food and nutrition outcomes in comprehensive ways. While the region has experienced gradual recovery and increased market connectivity, income insecurity and environmental constraints particularly water scarcity limit consistent access to nutritious foods. Many households rely on remittances or irregular income sources while local agriculture, though diverse, suffers from limited market access and fluctuating input costs. Participants emphasized that while traditional diets in the Northern Province are nutritionally balanced, economic hardship and lifestyle changes have gradually shifted consumption patterns toward low-cost, market-purchased foods. This transition which is combined with cultural dietary restrictions and regional food preferences reinforces the heterogeneity of nutritional outcomes across the country.

Across all regions, socioeconomic inequality remains a defining feature of Sri Lanka's nutrition landscape. Even within the same geographic areas, disparities persist among occupational groups, income levels and household compositions. Wage earners and daily laborers whose earnings are directly tied to inflationary cycles face more severe food insecurity compared to salaried employees or remittance-receiving households. Women-headed households especially in rural and estate areas experience compounded disadvantages while juggling care responsibilities with income generation in an environment of limited institutional support. These intersectional disparities manifest in reduced dietary quality, meal skipping and heavy reliance on low-cost, high-calorie foods that meet energy needs but fail to provide nutritional balance.

The SACIN project's equity-focused framework highlights that these demographic and socioeconomic patterns are not isolated realities but expressions of broader systemic inequities within Sri Lanka's food system. Macro-level policy tools such as fiscal incentives, trade regulations and agricultural subsidies inevitably interact with local contexts shaped by poverty, labor structures and market asymmetries. For instance, while tariff reductions or import liberalization may enhance national food availability their benefits seldom reach rural and estate communities constrained by purchasing power and

infrastructural deficits. Similarly, social protection programs though widespread often fail to capture the heterogeneity of nutritional needs across different population groups. The qualitative evidence thus highlights the need for a context-responsive approach to nutrition policy that acknowledges the demographic and spatial variations in access and affordability.

In conclusion, Sri Lanka's food and nutrition systems mirror the country's broader socio-economic inequalities. The intersections of geography, class, occupation and social identity determine who eats, what they eat and how nutrition translates into well-being. Addressing these inequities requires more than national-level reform and it demands localized strategies that enhance economic resilience, social inclusion and equitable access to nutritious food. A one-size-fits-all policy model cannot respond effectively to the layered realities uncovered by the SACIN qualitative evidence. Instead, an equity-driven nutrition agenda must bridge macroeconomic reform with community-level interventions in ensuring that every household regardless of region or social standing has the capacity to secure adequate, diverse and nutritious food for a healthy life.

5.3.2. Dietary patterns and consumption behaviors

The qualitative evidence shows that dietary patterns in Sri Lanka are concurrently shaped by urbanization, economic constraints, cultural preferences and the increasing penetration of marketised food environments. In urban Colombo, respondents consistently described a shift toward market-sourced, convenience foods driven by time pressure, constrained living spaces and the absence of land for home production. Many participants characterised this as habitual and normalised: "people in Colombo don't cook at home. They eat from shops. It's a habit for them" (Adult male, Colombo). Adolescents further illustrated how convenience and preference drive out home cooking: "I eat from a shop in the morning and at night... In the evening, I tell my mother, 'Don't cook today. Let's eat from a shop'" (Adolescent boy, Colombo). These testimonies point to an urban foodscape in which ready-made items (kottu, fried rice, parata and other short eats) are routinely consumed and where exposure to advertising and the social desirability of shop foods reinforce this pattern.

By contrast, rural and estate communities demonstrate a stronger but not absolute reliance on locally produced and traditional foods. Participants in Kurunegala and Nuwara Eliya described diets anchored in rice, dhal, seasonal vegetables and leafy greens grown in home gardens or locally available chena lands. These food sources underpin greater dietary diversity at certain times of year: respondents listed local staples such as paddy, eggplant, beans, finger millet and a range of seasonal fruits. At the same time, these same rural groups documented increasing consumption of processed and packaged items such as biscuits, instant noodles and soft drinks in signalling the spread of convenience foods beyond urban centres. Estate communities (notably in Nuwara Eliya) reported particular constraints. Despite working within agricultural landscapes, estate workers remain dependent on estate canteens and limited market options which tends to reproduce monotonous, starch-heavy meals and restrict access to diverse protein and fruit sources.

Economic status and occupation emerged as decisive determinants of dietary quality across settings. Low-income and daily-wage households repeatedly described consumption choices dictated by immediate affordability rather than by nutritional preference. Participants explained that food choices are made "according to the money we have in hand," and many documented deliberate substitution and rationing strategies. Protein sources meat, fish and eggs are the first items to be reduced when prices rise with cheaper plant-based alternatives such as green gram and finger millet used instead.

An adolescent girl from Jaffna succinctly captured this coping logic which is “To manage our income and expenses, we reduce consumption of protein-rich foods.” Even where households possess knowledge of nutrition, financial necessity forces repeated compromises that reduce dietary diversity and micronutrient adequacy.

Cultural and personal taste preferences intersect with economic pressures to shape consumption decisions in distinct ways. Several adolescents and adults admitted to preferring shop-bought items because of taste which often overrides health considerations. In Kurunegala a participant stated bluntly that shop foods are preferred “because they are tastier than what’s made at home.” Personal aversions were also notable as some adolescents avoid particular traditional items (for example, certain legumes or leafy greens) for taste reasons even when those foods are locally available and inexpensive. Media and advertising amplify these preferences as adolescents report that televised food adverts stimulate cravings and direct purchases: “When ads for food come on TV, it makes me want to eat them” (Adolescent boy, Kurunegala). Thus, dietary change is not merely a function of supply and price but also of evolving preferences and aspirational consumption driven by mass media.

Community practices such as home cultivation, food preparation strategies and waste minimisation appear as important mediating behaviours that partly buffer households against market volatility. Across sites there are numerous accounts of families cultivating vegetables, fruits and chilies where space permits and of adapting food preparation to reduce cost in preparing fried rice or kottu at home rather than buying from shops, stretching one meal across multiple sittings and creatively using leftovers (for instance, converting coconut scraps into oil). One adolescent noted the household practice of checking quantities and expiry dates for packaged goods while also growing produce when possible in demonstrating a pragmatic blend of market vigilance and local production. However, these coping mechanisms are unevenly distributed while home gardening and food sharing strengthen resilience for some as they cannot fully offset the nutritional impacts of persistent price shocks or the systematic removal of affordable protein sources.

> “People in Colombo don’t cook at home as everyone eats from shops.”
> *– FGD, Adult Men, Colombo*
>
> “We eat rice and gravy, nothing else on some days. We cannot afford vegetables anymore.”
> *– FGD, Adult Women, Nuwara Eliya*
>
> “Children want biscuits and noodles because they see them on TV.”
> *– FGD, Pregnant and Lactating Mothers, Kurunegala*
>
> “Now people think eating fried rice and kottu is normal, but no one thinks about the oil or salt.”
> *– KII, Public Health Inspector, Colombo*

Finally, the data show a convergent nutrition transition across demographic groups: traditional, nutrient-dense foodways coexist with and are increasingly supplanted by calorie-dense processed options. Even in areas with strong agricultural bases, the aspirational appeal of urban food culture combined with economic volatility and pervasive marketing drives substitution toward processed snacks and sugary drinks. School-level supports such as the breakfast programs and occasional

supplements noted by participants provide limited relief, but their reach is inconsistent and often restricted by grade or logistical limitations. In sum, dietary patterns in Sri Lanka are the product of a complex interplay between availability, affordability, cultural preference and market forces. The qualitative evidence highlights that addressing declining dietary diversity requires interventions that simultaneously improve household purchasing power, regulate the unhealthy food environment and support accessible, culturally appropriate pathways to sustain traditional, nutritious diets.

5.3.3. Health and nutrition outcomes

The qualitative findings from the SACIN study depict a complex and evolving nutritional landscape in Sri Lanka where undernutrition coexists with rising rates of diet-related non-communicable diseases (NCDs). This double burden of malnutrition simultaneous undernourishment among vulnerable groups and overnutrition among others which reflects the combined effects of economic hardship in changing dietary practices and limited access to balanced, nutritious foods. Across districts, both community participants and key informants described an unmistakable increase in lifestyle-related illnesses such as diabetes, hypertension and obesity, even as problems of anemia, stunting and low birth weight persist. A public health officer from Colombo observed that diabetes is now “present in almost every household” while capturing the extent to which poor dietary habits and sedentary lifestyles have become embedded in daily routines. These findings underscore how nutrition-related health challenges have transcended class and geography in linking urban excess and rural deprivation within the same continuum of risk.

Urban areas particularly Colombo illustrate how dietary modernization and lifestyle shifts have produced escalating rates of NCDs. Participants associated the growing prevalence of diabetes and high blood pressure with the widespread consumption of fried foods, sugary drinks and high-carbohydrate meals often purchased from shops. An adult respondent commented that “We eat kottu and fried rice often because it’s fast and convenient, but it’s not healthy.” Key informants corroborated this observation in explaining that while awareness campaigns about sugar and salt intake exist, “people find it difficult to change because of taste and habit.” The findings highlight a recurring behavioral contradiction as health literacy has improved yet actual dietary choices remain constrained by taste preferences, time scarcity and affordability. For urban wage-dependent households, the decision to eat from shops is not simply a matter of convenience but a coping mechanism within a time-pressured, high-cost urban economy.

In contrast, rural and estate populations face enduring forms of undernutrition and micronutrient deficiency that are closely linked to poverty and limited dietary diversity. Pregnant and lactating mothers in Nuwara Eliya and Jaffna frequently expressed concern about inadequate access to nutritious foods and supplements. One mother noted that “We don’t get Thriposha regularly; sometimes months go by without it.” Also, another explained that “Iron tablets are given, but many don’t take them because they cause side effects and food alone is not enough.” These testimonies point to both supply and utilization challenges of erratic distribution of nutritional supplements, inconsistent follow-up from public health services and weak community-level support systems. Several mothers linked recurring anemia and low birth weight to monotonous, carbohydrate-heavy diets and to financial constraints that limit the inclusion of fish, meat and dairy. In such settings, poor maternal nutrition perpetuates intergenerational vulnerabilities in reinforcing the cycle of malnutrition among children and adolescents.

Adolescent discussions reveal emerging behavioral and nutritional vulnerabilities that signal future public health challenges. While most adolescents demonstrated a general understanding of balanced diets in identifying the need for vegetables, proteins and moderated sugar intake as these insights rarely translated into consistent practice. Taste preference, peer influence and exposure to advertising play decisive roles in shaping adolescent diets. A girl from Kurunegala remarked that "Even if we know what is healthy, we like to eat from shops because it tastes better." Many reported frequent consumption of sugary snacks, chocolates, fizzy drinks and fast foods often replacing regular meals or home-cooked lunches. Skipping breakfast or relying on tea and biscuits before school was common. The evidence points to a disconnection between nutritional knowledge and behavioral capacity where awareness is insufficient to overcome structural barriers such as limited household budgets, aggressive marketing of unhealthy foods and the convenience of readily available low cost snacks.

At the same time, the persistence of undernutrition among children and women continues to reflect deep structural inequalities. Health officers from estate and rural areas noted that economic hardship, inadequate sanitation and limited dietary diversity compound the risk of stunting and wasting. One informant from Nuwara Eliya emphasized that "Even though they work in agriculture, most families cannot afford milk or fish regularly as children eat rice and dhal every day." Seasonal variations further exacerbate this pattern as food insecurity intensifies during lean months in leading to reduced meal frequency and portion sizes. This nutritional instability interacts with poor maternal diets, low birth weights and childhood anemia while resulting in a continuum of vulnerability across life stages.

Environmental and economic shocks such as floods, droughts and inflation further amplify these health and nutrition disparities. Participants from Kurunegala and Jaffna described how extreme weather events disrupt both food production and market prices while forcing households to rely on less nutritious alternatives. "When the prices go up, we stop buying fish and eggs" and "we eat only what is cheap and filling," one woman noted. These adaptive behaviors that are economically rational, erode long-term nutritional status and expose families to greater risk of chronic illness. The study also found that while fiscal interventions such as the sugar tax and labeling regulations have been introduced at the national level, their impact remains limited in practice. Weak enforcement and the counteractive influence of marketing have diminished their intended public health benefits. A health worker in Colombo commented that "taxes on sugar drinks are not enough as people still buy them because they are addictive and heavily advertised."

"Every house has a diabetes patient now even in villages."
– KII, Midwife, Kurunegala

"We know what to eat, but we can't always buy it. Healthy food is too expensive."
– FGD, Adolescent Girls, Jaffna

"We don't get Thriposha regularly; sometimes months go without it."
– FGD, Pregnant Mothers, Nuwara Eliya

"Children like sweets and snacks; they don't eat home-cooked food."
– FGD, Adult Women, Colombo

Taken together, these findings underscore that nutrition and health outcomes in Sri Lanka are products of intersecting structural, behavioral and environmental determinants. The coexistence of diet-related NCDs and persistent undernutrition reflects a fragmented policy response that has yet to bridge the divide between economic access, behavioral change and public health delivery. Improving outcomes requires a comprehensive approach that strengthens both prevention and access as enforcing healthier food environments through fiscal and regulatory measures, expanding maternal and adolescent nutrition programs and promoting sustained community engagement to translate awareness into practice. Without such integrative and equity-focused policies, Sri Lanka's population will continue to experience the dual burden of malnutrition where abundance and deprivation coexist within the same households and communities.

5.3.4. Intra-household food dynamics

The qualitative findings reveal that intra-household food allocation and decision-making in Sri Lanka are profoundly gendered, reflecting long-standing social norms, economic hierarchies and caregiving expectations. Across regions, the study participants consistently described food as not merely a resource to be shared but as a marker of social roles and responsibilities within the family. These entrenched gender relations determine who eats first, who eats last and who sacrifices most when food is scarce. Women particularly mothers emerge as both the primary managers of food systems within the household and the most nutritionally vulnerable group as they consistently prioritize the dietary needs of others over their own.

Women's narratives highlight the self-sacrificial dimension of maternal and spousal care that is deeply embedded in Sri Lankan domestic culture. Numerous accounts illustrate that mothers often deprioritize their own nutrition so that children and husbands can have larger or higher-quality portions. As one woman from Kurunegala described, "We give the good pieces of fish or meat to the children. We take the small or bony pieces." Another participant echoed this sentiment: "Even if there's little food, we make sure the children eat first." These statements encapsulate a normalized ethic of care where women's worth as caregivers is tied to their ability to ensure others' well-being even at the cost of their own health. This gendered self-denial contributes directly to chronic undernutrition, anemia and low energy levels among women while reinforcing intergenerational nutritional deficits as mothers' health affects the well-being of their children.

Decision-making about food purchasing and preparation is likewise shaped by gender roles and financial stress. Women bear near-exclusive responsibility for budgeting, meal planning and cooking, yet their decision-making power is tightly constrained by income limitations. A mother in Colombo stated, "We buy what we can afford, not what we want," while another from Nuwara Eliya explained that "sometimes we have to choose between buying vegetables or milk." These testimonies highlight how women navigate the daily tension between food quality and household affordability. The resulting dietary adjustments in reducing portion sizes, substituting protein with plant-based options and prioritizing cheap starches are strategies born out of necessity, not choice. Even when women possess nutritional awareness, the lack of financial flexibility leaves little room for healthier options. In this sense, economic vulnerability intersects with gendered caregiving responsibilities in positioning women at the frontline of household food insecurity.

Children's dietary preferences influenced by social and commercial forces further complicate women's roles in managing food decisions. Many mothers described the difficulty of balancing children's exposure to fast food and advertising with efforts to maintain traditional dietary habits. Adolescents' preference for packaged snacks, fried foods and sugary drinks often overrides maternal guidance as mothers attempt to avoid conflict or respond to emotional needs through food. As one mother in Kurunegala admitted, "Even if we say no, children ask for money to buy snacks from school. We can't always refuse." This pattern reflects an erosion of intergenerational dietary authority where mothers' intentions to promote healthy eating are undermined by pervasive marketing, peer pressure and the symbolic association of fast food with modernity and social status. Thus, intra-household dynamics are not only influenced by gender hierarchies but also by shifting generational relationships within the context of an evolving consumer culture.

"I keep the bony pieces for myself — my husband and children get the better parts."
– FGD, Adult Women, Kurunegala

"Mothers always eat last. By then, there's very little left."
– FGD, Pregnant and Lactating Mothers, Nuwara Eliya

"Now we all eat together and share equally, it's changing slowly."
– FGD, Adult Men, Kurunegala

"Even if we know it's not healthy, we buy what children ask for, to keep them happy."
– FGD, Preganant and Lactating Mothers, Colombo

At the same time, the qualitative data reveal emerging signs of gradual change in some communities, particularly in rural areas. A few male participants acknowledged that food sharing and gender roles have evolved modestly over time. One respondent from Jaffna observed, "Now we eat together, and everyone gets an equal portion," in suggesting that economic hardship and awareness campaigns may be encouraging more collective household practices. Nevertheless, these examples remain exceptions rather than norms. The overwhelming evidence across all districts indicates that patriarchal food hierarchies continue to shape dietary behaviors, with women and girls eating last or consuming smaller portions in mixed-income or food-insecure households. Even in households that appear food-secure overall, qualitative accounts reveal gendered nutritional inequities masked by aggregate indicators of food availability.

The persistence of these intra-household disparities underscores the need to integrate gender-sensitive approaches into national and community-level nutrition policy. Efforts to improve food security and diet quality must account for the relational dynamics within households in recognizing that women's empowerment is central to both the equitable distribution of food and the sustainability of behavioral change. Targeted interventions that promote shared decision-making in food purchasing, male involvement in nutrition education and social recognition of women's nutritional needs are essential to disrupt these enduring inequalities. Moreover, strengthening women's access to income, credit and social protection can expand their capacity to make autonomous and health-promoting food choices.

In essence, the SACIN qualitative findings reaffirm that intra-household nutrition is not solely a matter of food supply, but of power, agency and social expectation. Women's invisible labor sustains the daily functioning of Sri Lankan households, yet their nutritional wellbeing remains compromised by the very responsibilities that define their social roles. Transforming these dynamics requires a paradigm shift in how nutrition programs are designed and implemented while moving beyond household-level targets to recognize and redress the gendered inequities that structure everyday food practices.

5.3.5. Economic and market inequalities

The qualitative findings from the SACIN study illustrate that economic inequality remains the most significant and pervasive determinant of food and nutrition insecurity across Sri Lanka's communities. Participants from all four districts such as Colombo, Kurunegala, Jaffna and Nuwara Eliya consistently described the deep erosion of purchasing power resulting from hyperinflation, currency depreciation and soaring food prices. These macroeconomic shocks have reshaped everyday food decisions in compelling households to prioritize affordability over nutritional quality. The testimonies reveal a widespread sentiment that "money is not enough even for basic food now," in reflecting how economic volatility has turned food security into a daily struggle even for middle-income families. While government subsidies and fiscal measures such as price controls or sugar taxes, exist in policy, participants across locations observed that these interventions have had little perceptible impact at the household level. Instead, rapid price escalation, unstable supply chains and declining real incomes have become dominant structural forces undermining food access and diet quality.

The consequences of these economic constraints are visible in household-level dietary behaviors. Families frequently reported reducing meal frequency, portion size and food diversity as the most immediate responses to rising costs. In every district, respondents described skipping meals or stretching food to last several days. An adult participant from Kurunegala explained, "Earlier we cooked three curries; now we cook one or sometimes only dhal. Meat or fish is too expensive." Another woman from Nuwara Eliya remarked, "We eat rice and gravy, nothing else on some days. We cannot afford vegetables anymore." The widespread substitution of nutrient-rich foods particularly protein sources such as fish, eggs and meat with cheaper, carbohydrate-based staples has created a hidden nutritional deficit that disproportionately affects women and children. These choices though rational within economic constraints, reinforce a cycle of undernutrition and poor diet diversity across generations.

The coping mechanisms employed by households reveal both adaptability and distress. Many respondents described strategies such as pawning jewelry, taking short-term loans or purchasing food on credit from local vendors to survive during price hikes. Others spoke of reducing the number of curries prepared per meal or sharing food with neighbors as a means of managing scarcity. A mother from Jaffna stated, "We exchange what we have, one family gives rice and another gives vegetables." While such reciprocal arrangements highlight community resilience, they also underscore the fragility of informal safety nets which rely on shared hardship rather than systemic protection. Participants also noted that home gardening where feasible has become a crucial buffer against market dependency. Households that cultivated vegetables, green leaves or chilies could partially offset rising prices but those without access to land particularly in urban and estate sectors remained completely dependent on markets and were therefore most exposed to inflationary pressures.

Spatial and market disparities intensify these economic inequalities. Urban households in Colombo though located near diverse food outlets and supermarkets, face a commercialized retail environment where even basic food items are priced beyond the reach of low-income earners. For these families, physical access to food does not translate into affordability. A participant from an urban settlement observed, “We see plenty of food in shops, but we can only buy what fills the stomach.” In contrast, rural and estate communities experience the opposite problem as limited market access and connectivity. Residents in remote areas reported traveling long distances to reach local markets often incurring additional transport costs that inflate overall food expenditure. Estate workers in Nuwara Eliya described depending on small, privately run estate shops where goods are priced higher than in public markets. “We buy from estate shops on credit,” one adult male noted, “because we have no other place to go.” This dependence on local intermediaries entrenches market asymmetries in ensuring that the poorest pay the highest relative prices for basic foods.

Participants also voiced frustration with the inconsistency and inadequacy of welfare and safety-net programs which have failed to provide timely relief during economic hardship. Both adult and adolescent groups identified delays and misallocation in programs such as Aswesuma, Thriposha and cash transfers while noting that truly vulnerable families were often excluded due to administrative inefficiencies. Estate communities in particular reported being overlooked in the distribution of nutritional support. One estate mother explained, “Sometimes we hear about the program, but by the time it comes to us, it’s over.” These gaps in welfare delivery reveal the structural inequities that persist between regions and social groups and they expose the limited capacity of current systems to protect households against macroeconomic shocks. The uneven distribution of assistance coupled with high inflation has left many families trapped in a cycle of indebtedness and dietary compromise.

> “We pawn jewelry to buy food; otherwise, we can’t manage the month.”
>
> *– FGD, Adult Women, Jaffna*
>
> “Sometimes we cook only rice and dhal, no vegetables or fish.”
>
> *– FGD, Adult Men, Kurunegala*
>
> “We see plenty of food in shops, but we can only buy what fills the stomach.”
>
> *– FGD, Adult Men, Colombo*
>
> “We exchange food with neighbors, one gives rice and another gives vegetables.”
>
> *– FGD, Preganant and Lactating Mothers, Jaffna*

Despite these challenges, the study also highlights localized forms of resilience that emerge from necessity. Home cultivation, food sharing and small-scale production have provided modest buffers for rural households. However, these practices cannot fully compensate for structural poverty or the erosion of purchasing power at the national level. As several key informants emphasized, macroeconomic stabilization is essential to restore household food security. Without controlling inflation and strengthening income support mechanisms, even well-intentioned nutrition programs risk being undermined by market volatility. Moreover, the qualitative evidence suggests that fiscal and trade reforms though central to national policy have not been effectively translated into equitable

outcomes at the community level. Taxes on unhealthy foods or import adjustments are quickly neutralized by inflation in leaving their benefits unseen in everyday life.

In summary, the findings reveal that economic and market inequalities are both causes and consequences of Sri Lanka's nutrition crisis. Food insecurity is not solely a problem of supply but one of access and affordability, mediated through unequal markets and inadequate safety nets. The experiences of households across the study districts demonstrate that vulnerability is shaped by both income and geography with urban poor, rural farmers and estate workers all facing distinct but interlinked barriers to nutritious diets. Addressing these inequities requires macroeconomic stabilization policies that explicitly integrate nutrition as a developmental objective linking fiscal management, trade policy and social protection under a unified framework. Only through structural economic reform combined with localized resilience-building can Sri Lanka move toward a food system that is equitable, inclusive and nutritionally sustainable.

5.3.6. Climate stressors in food and nutrition security

Climate variability and environmental stressors have emerged as silent yet pervasive determinants of food and nutrition outcomes across Sri Lanka's diverse regions. The qualitative evidence reveals that communities increasingly perceive climatic changes manifested in unpredictable rainfall, prolonged dry spells and recurrent flooding as direct threats to food production, household livelihoods and dietary stability. Participants from Kurunegala and Nuwara Eliya districts frequently emphasized that "the weather has changed" and that cultivation cycles are no longer reliable. Farmers described how unseasonal rains and droughts disrupt both paddy and vegetable cultivation in leading to significant yield losses, pest outbreaks and higher input costs. These shocks undermine household food self-sufficiency and reduce the availability of affordable, locally grown foods in rural markets. As one farmer explained, "Even if we want to grow our food, the rains don't come when they should and everything is spoiled."

The cascading effects of these climatic disruptions are especially visible in household nutrition and market stability. Reduced harvests not only limit dietary diversity but also contribute to price spikes and supply shortages in affecting even non-farming households who rely on local markets. Participants reported that vegetable prices fluctuate widely between seasons with dry periods forcing consumers to rely on imported or lower-quality produce. In estate sectors where many families depend on casual labor in tea plantations, heavy rains or landslides interrupt daily wage opportunities, directly constraining their purchasing power and food access. A woman from Nuwara Eliya stated, "When the rain doesn't stop, we can't go to work and we can't buy food either." This interdependence between climate shocks and income instability deepens the vulnerability of already marginalized groups particularly women-headed households and daily wage earners.

Participants also identified declining soil fertility, water scarcity and crop disease as growing concerns that threaten the long-term sustainability of food systems. Smallholder farmers noted that they now depend more heavily on chemical fertilizers and pesticides to maintain yields, despite rising costs and adverse health implications. The shift away from traditional drought-resistant varieties was also cited as a cause of reduced resilience. Respondents in Jaffna emphasized that saltwater intrusion and groundwater depletion have rendered certain crops unviable in forcing families to purchase foods that were once home-grown. Such ecological degradation compounds household dependence on volatile food markets in amplifying the structural inequities already highlighted in the preceding sections.

The interlinkages between climate impacts, food affordability and health were also evident in community narratives. Participants associated climate-induced food scarcity with an increase in the consumption of cheaper, energy-dense foods such as rice, flour-based items and fried snacks. This adaptive shift reflects both necessity and risk while these foods offer short-term satiety, they contribute to poor nutritional outcomes over time. In several focus groups, respondents linked the rising prevalence of diseases like diabetes and hypertension to changes in food availability and quality during adverse weather conditions. These patterns underscore that climate change is not only an environmental issue but a structural determinant of nutrition and health in operating through its effects on livelihoods, prices and behavioral adaptations.

Despite these challenges, the study also captures emerging forms of community adaptation. Participants described increased interest in home gardening using rainwater collection, composting and crop diversification as means to cope with changing weather. Some women's groups in Kurunegala reported experimenting with indigenous plant varieties that are more tolerant to drought or pests. However, these efforts remain localized and under-supported in lacking systematic integration into agricultural or nutrition policy frameworks. As one key informant emphasized, "People are trying on their own, but there is no long-term help or guidance." This gap between grassroots innovation and institutional support represents a missed opportunity for advancing climate-smart nutrition solutions.

> "The rains don't come when they should and crops die in the field."
> *– FGD, Adult Men, Kurunegala*
>
> "When the rain doesn't stop, we can't go to work or buy food."
> *– FGD, Adult Men, Nuwara Eliya*
>
> "Vegetable prices go up during droughts, we just buy rice then."
> *– FGD, Adult Women, Jaffna*
>
> "We're trying to plant local varieties that don't die so easily, but we get no support."
> *– FGD, Adult Women, Kurunegala*

From an equity perspective, the findings highlight that climate change amplifies existing social and economic inequalities. Households with access to land, irrigation and diversified income sources are better equipped to adapt, whereas landless, estate and low-income families remain trapped in cycles of exposure and dependency. The SACIN framework's focus on inclusivity and resilience thus calls for integrating climate adaptation into nutrition policy through support for home gardening, extension services promoting climate-resilient crops and targeted livelihood diversification programs for women and youth. Ensuring that climate response measures are gender-sensitive and locally grounded will be critical for sustaining food and nutrition security in an era of increasing environmental uncertainty.

5.3.7. Household-level coping strategies

The qualitative evidence from the study reveals that Sri Lankan households employ a wide range of coping strategies to manage food affordability amidst rising costs and declining real incomes. These strategies are not merely economic adaptations but reflect complex social and behavioral adjustments that vary across demographic groups such as adolescents, adults and pregnant or lactating mothers. The findings highlight that food insecurity is experienced differently depending on household

composition, gender roles and life stages, yet a common thread emerges the need to balance nutritional adequacy with economic survival.

Among adolescent-focused households, food affordability pressures are managed primarily through strategies of reduction, substitution and self-production. Families frequently reduce portion sizes or purchase smaller quantities of food to stretch their budgets over longer periods. A striking behavioral adaptation is the prioritization of cheaper, locally available ingredients such as green gram, finger millet and jackfruit in place of protein-rich foods like meat, fish and eggs which have become prohibitively expensive. In many cases, households have turned to home cultivation of vegetables, fruits and chilies to avoid dependence on market purchases. Cooking once-expensive dishes such as fried rice or kottu at home rather than buying them from restaurants has also emerged as a widespread practice in signaling an effort to retain dietary preferences while minimizing costs. Adolescents' families also reported an increased awareness of food waste reduction where leftovers are carefully preserved and even coconut scraps are used to produce oil for cooking. Some households attempt to offset these constraints through monetary adjustments such as parents working overtime while others rely on community exchange systems where food is shared or bartered with neighbors during difficult times.

In adult-headed households, coping strategies reveal an even starker form of economic adjustment that borders on nutritional compromise. The reduction in consumption of meat, fish and other costly protein sources is near universal with eggs and dried fish emerging as the main substitutes due to their lower price and longer shelf life. Some families stretch meals across multiple sittings, reuse leftovers creatively or skip meals entirely to save on daily food expenses. A growing number of households are turning toward self-reliance through home production while cultivating easily available foods such as drumstick leaves and jackfruit or producing simple food items at home to reduce dependency on markets. However, when these measures fail households resort to distress strategies taking loans, pawning jewelry or borrowing from neighbors in order to buy food. Reducing the number of curries per meal, simplifying recipes and altering traditional cooking methods to use cheaper ingredients have also become normalized coping behaviors. Importantly, community solidarity persists as a buffer mechanism as neighbors often share food from their gardens or communal cooking efforts in reflecting a residual form of social safety net that remains active even as formal welfare systems weaken.

"Earlier we made three curries, now we make only dhal."
– FGD, Adult Women, Kurunegala

"We pawn jewelry to buy food, otherwise, we can't manage."
– FGD, Adult Women, Jaffna

"Parents eat less so children can have a full meal."
– FGD, Pregnant and Lactating Mothers, Nuwara Eliya

"We see plenty of food in shops, but we can only buy what fills the stomach."
– FGD, Adult Men, Colombo

The situation among pregnant and lactating mothers reveals a particularly troubling picture of nutritional vulnerability. In these households, coping behaviors often involve intentional dietary sacrifice by adults to protect the nutritional needs of children. Mothers and fathers report eating less themselves to ensure that younger members of the family receive sufficient food. High-cost foods such as meat, fish and eggs are typically the first to be reduced or replaced with low-cost alternatives like dried fish or anchovies. The reliance on cheaper proteins, though practical, leads to nutritional inadequacy during pregnancy and lactation periods of heightened nutritional demand. Increased home cooking is a common strategy to minimize expenses, yet participants noted that even home-prepared meals are sometimes replaced with low-nutrient, high-taste foods bought from shops that are driven by cultural preferences or convenience rather than cost-efficiency. Informal community support systems such as food-sharing networks among relatives and neighbors serve as an important coping mechanism during acute crises in helping families sustain their diets when economic shocks or price spikes occur.

Across these demographic groups, several patterns stand out. First, the reduction and substitution of protein-rich foods emerges as the most pervasive coping mechanism in reflecting the direct impact of price volatility on household nutrition. Second, home production and waste minimization have re-emerged as survival strategies that simultaneously enhance food security and reduce dependence on volatile markets. Third, the reliance on social reciprocity and informal exchange indicates that in the absence of strong institutional support, community networks play an indispensable role in buffering the effects of food insecurity. However, these coping mechanisms also expose a deeper fragility of household food systems as short-term adaptations often come at the cost of long-term dietary quality, health, and resilience.

These findings have significant policy implications. They highlight the need for nutrition-sensitive safety nets that not only stabilize food prices but also safeguard dietary diversity among low-income and nutritionally vulnerable households. Strengthening local food systems through small-scale production support, home gardening programs and local value chain linkages can build resilience at the community level. Furthermore, targeted interventions for pregnant and lactating mothers such as food vouchers or supplementary nutrition programs are critical to prevent intergenerational malnutrition. Finally, formalizing community-based support mechanisms and integrating them with state welfare programs could enhance both coverage and cultural relevance. By understanding the diverse coping strategies of different demographic groups, policymakers can design interventions that align with existing behaviors and capacities in ensuring that solutions are both economically feasible and socially sustainable.

5.3.8. Gender dimensions in food systems and nutrition

Gender operates as a powerful axis shaping both food system participation and nutritional equity in Sri Lanka. The qualitative findings from the SACIN study reveal that women occupy multiple and intersecting roles as agricultural laborers, income earners, household food managers and primary caregivers yet their agency within the food system remains systematically constrained. In rural and estate communities, women engage in extensive agricultural activities including land preparation, weeding, planting, harvesting and processing. However, these contributions often go unrecognized in both formal labor statistics and household decision-making structures. Female participants from Kurunegala and Nuwara Eliya noted that they “work from dawn to dusk” in both field and home, yet their labor is viewed merely as “help” rather than as economically valuable work. This dual burden of

productive and reproductive labor leaves women physically exhausted, nutritionally vulnerable and with limited autonomy over resource use or dietary decisions.

Within households, entrenched gender norms continue to dictate patterns of food allocation and consumption. Women particularly mothers consistently deprioritize their own dietary needs to ensure that children and husbands are adequately fed. Several women described situations where they "keep the smaller pieces" of meat or fish for themselves in reflecting internalized expectations of sacrifice and self-denial that reinforce nutritional inequities. Despite being the primary food purchasers and preparers, women's decision-making power remains curtailed especially in male-headed households where men control financial resources. This gendered division of authority constrains women's ability to make health-conscious or nutritionally informed choices, even when they possess relevant knowledge through health or community programs. The qualitative evidence highlights that the household is not a neutral unit of consumption but a site of power relations that directly influence dietary quality and well-being.

The effects of macroeconomic instability and fiscal and trade reforms are also profoundly gendered. Rising fuel and food prices, the withdrawal of subsidies and volatile market conditions disproportionately impact women who are chiefly responsible for managing household food budgets on already limited incomes. Female-headed households and women in casual wage labor particularly in estate sectors face heightened vulnerability as inflation erodes purchasing power. Women participants frequently expressed dissatisfaction with welfare mechanisms such as Aswesuma and Thriposha while noting that "those who really need it don't receive it." Administrative inefficiencies, politicized distribution and weak coordination between local government and estate management systems have further marginalized women's access to essential support. In some cases, the distribution of nutritional supplements like Thriposha was irregular or absent in undermining maternal and child nutrition outcomes. These governance failures highlight the intersection of gender, poverty and institutional exclusion within Sri Lanka's welfare and food systems.

"I keep the bony pieces for myself to make sure that my husband and children get the better parts."
– FGD, Adult Women, Kurunegala

"We work from morning to night in the fields and at home, there's no rest for women."
– FGD, Adult Women, Nuwara Eliya

"Those who really need the Thriposha don't receive it."
– FGD, Pregnant and Lactating Mothers, Nuwara Eliya

"Even if I know what is healthy, I can only buy what I can afford."
– FGD, Pregnant and Lactating Mothers, Colombo

At the same time, the commercialization of food environments and the expansion of processed food markets have introduced new gendered pressures. Targeted advertising campaigns especially those aimed at mothers and children reinforce aspirational consumer behaviors that privilege convenience over nutrition. Mothers reported facing social and emotional pressure to purchase packaged snacks or

fast foods for their children in perceiving these as signs of modernity or good parenting. This dynamic illustrates how gendered marketing reinforces the nutrition transition while displacing traditional dietary practices and creating further health risks. Women's role as "nutrition gatekeepers" is thus simultaneously empowering and burdensome as they navigate conflicting economic, cultural and emotional pressures in managing household food consumption.

Despite these systemic constraints, women also emerge as key agents of resilience and transformation within local food systems. Across all study locations, women were found to play leading roles in home gardening, small-scale food processing and community-level nutrition initiatives. Mothers' clubs, women's rural development societies and awareness programs conducted by public health midwives and medical officers have proven instrumental in improving dietary practices, enhancing knowledge and fostering solidarity among women. In several cases, women leveraged collective organization to initiate savings groups, share home-grown produce or disseminate nutrition information. These examples illustrate the latent potential of women's grassroots participation to drive community-based nutrition improvements even in resource-constrained contexts.

From an equity and policy perspective, the findings make clear that gender must be central to the design and implementation of food and nutrition interventions. Structural barriers including unequal access to land, credit, information and markets must be addressed through targeted policy measures that enhance women's decision-making power and economic autonomy. Strengthening social protection programs to ensure timely and equitable delivery, expanding training and extension services for women farmers and integrating gender-sensitive nutrition education into community programs are essential steps toward sustainable food system transformation. Recognizing women not merely as beneficiaries but as co-creators of food system resilience aligns directly with SACIN's equity-focused framework. By promoting inclusive governance and investing in women's capacities, Sri Lanka can move toward a more just and nutritionally secure future in which the burdens and benefits of food production and consumption are shared equitably across gender lines.

5.4. Evidence Based Policy Suggestions

The findings from this study highlight that improving nutritional outcomes in Sri Lanka requires a holistic and multi-layered policy response in extending beyond conventional information campaigns or isolated fiscal interventions. Nutrition inequities are deeply embedded within the country's socio-economic and cultural fabric, shaped by poverty, income precarity, traditional dietary practices and limited access to affordable, nutritious foods. The evidence indicates that structural factors such as low wages, high food prices and market inefficiencies that combine with behavioral and psychological dimensions to perpetuate nutritional deprivation. Hence, policy responses must be comprehensive and equity-driven in addressing both systemic constraints and community-level realities that influence food choices and health outcomes.

One of the most critical priorities identified through the field evidence is the need to strengthen economic security and food affordability for low-income households. Participants repeatedly emphasized that poverty and irregular income streams force families to compromise on the nutritional quality of their diets. Many resort to cheaper, calorie-dense foods simply to fill stomachs while nutrient-rich items such as fruits, dairy and protein sources remain unaffordable luxuries. Therefore, policy frameworks must include measures that guarantee a living wage for low-income and informal workers in enabling them to meet their basic dietary needs without facing constant trade-offs between

food and other essentials. A more equitable, subsidized food supply system is also necessary to reduce the financial burden on consumers while supporting producers through fair pricing. These economic safeguards are vital to bridge the widening affordability gap and to ensure that market mechanisms promote rather than undermine access to nutritious food.

Beyond affordability, the research highlights the urgency of regulating unhealthy food environments that are increasingly influencing dietary behaviors particularly among children and adolescents. Communities expressed concern about the growing availability and aggressive marketing of ultra-processed foods containing artificial flavor enhancers and other additives that compromise public health. The state must take stronger action in regulating these products including stricter labeling requirements, advertising restrictions and taxation policies that disincentivize the production and sale of unhealthy foods. Such measures should be complemented by policies that promote local, healthier alternatives and strengthen local market linkages for fresh produce. This dual approach curbing unhealthy food promotion while improving access to healthier options which will contribute significantly to reshaping consumer behavior and public perceptions of what constitutes a healthy diet.

Another consistent theme emerging from the qualitative evidence is the importance of nutrition literacy and continuous public education as enablers of behavioral change. Participants expressed that while information about nutrition exists it often fails to reach communities in practical, culturally relevant ways. Many respondents proposed reintroducing educational programs through mass media such as television, radio and digital platforms that combine nutrition awareness with practical guidance on money management, meal planning and family health. In addition, community-based education sessions facilitated by local health officers or trained volunteers could provide participatory spaces for men and women to learn together about food budgeting and balanced diets. Embedding nutrition education within school curricula and community organizations would further normalize nutrition-conscious behavior in ensuring that knowledge is transmitted intergenerationally and applied consistently in everyday life.

At the community level, the study identifies the need for empowerment-centered interventions that reduce dependency on welfare and promote self-sufficiency. Many participants acknowledged that a “dependent mindset” persists in some communities where individuals wait for government or donor assistance rather than initiating their own solutions. To overcome this, future interventions should focus on building local capacity through livelihood diversification, home gardening and micro-entrepreneurship related to food processing or distribution. Encouraging community ownership in program design such as forming village-level nutrition committees can enhance accountability and sustainability. Providing small incentives such as meals, water or resources for participants who attend nutrition workshops could also improve participation and motivation. Ultimately, the goal should be to shift the focus from passive assistance to active participation where communities become agents of change in improving their own nutrition environments.

The findings also reveal a clear disconnect between policy design and on-the-ground realities in suggesting that policy coherence and coordination must be strengthened. While fiscal and trade policies significantly influence the cost and availability of food, they often fail to consider household-level constraints such as income instability, caregiving burdens and time poverty. This highlights the need for a cross-sectoral approach that integrates health, agriculture, trade and social protection systems within a unified framework for nutrition governance. Establishing an inter-ministerial coordination body could ensure that policy instruments from food import tariffs to social welfare

transfers work synergistically to achieve equitable nutrition outcomes. Additionally, aligning national nutrition strategies with district-level implementation mechanisms would improve responsiveness to local needs and resource conditions.

In line with these priorities, participatory monitoring and continuous learning mechanisms are essential for ensuring that community perspectives remain central to policy refinement. Regular community consultations and participatory evaluations can provide valuable feedback on program performance in revealing gaps that top-down monitoring systems often overlook. Future research should also build upon the insights from this qualitative study by conducting larger-scale, mixed-methods assessments to measure the prevalence of identified challenges such as dietary substitution behaviors and dependency patterns and evaluate the effectiveness of proposed interventions. This iterative, evidence-based approach will enable the SACIN framework to evolve as a living model for nutrition equity.

These policy directions reinforce the need to link macro-level fiscal and trade reforms with micro-level community empowerment. While national policies can shape food environments and economic access while lasting improvements in nutrition depend on behavioral change, local agency and equitable distribution of resources. Embedding community perspectives into national decision-making is not only essential for addressing nutrition disparities but also for ensuring that interventions are socially legitimate and contextually grounded.

CHAPTER 6

CONCLUSIONS

Chapter 6 presents the overall conclusions of the study by synthesizing findings from the qualitative assessments, quantitative GTAP/CGE simulations, policy reviews and the stakeholder validation workshop conducted under the SACIN framework. The study examined how fiscal and trade policies influence food systems, dietary practices, affordability and nutrition outcomes in Sri Lanka within the broader South Asian context. The findings demonstrate that food security and nutrition are shaped by a complex interplay of household income, market dynamics, trade regulations, taxation structures, energy and input costs and institutional coordination mechanisms. The qualitative and quantitative results were further examined and validated through a stakeholder workshop held on 30 March 2026 at Renuka City Hotel, Colombo which brought together key actors from government, academia and development practice. This validation process strengthened the robustness of the findings while also providing important insights into emerging policy challenges and the evolving vulnerability of Sri Lanka's food system under multiple overlapping economic and global shocks.

6.1. Key Findings: Current Policy Situation, Challenges and Limitations

Sri Lanka's food and nutrition policy landscape reflects a complex interaction of fiscal, trade and agricultural measures designed to ensure food availability, affordability and dietary quality. Fiscal policies include subsidies for staple foods such as rice and sugar alongside import tariffs aimed at protecting domestic production. Trade policies have shifted between liberalization and protectionism in creating inconsistencies in import flows, price stability and market predictability. While these measures have helped maintain a baseline level of food availability, evidence indicates that they have not consistently translated into improved nutritional outcomes or reduced vulnerability among low-income households. Heavy reliance on imported cereals, dairy and sugar products exposes consumers to global price shocks while domestic production is constrained by fragmented landholdings, low mechanization and climatic variability. These structural challenges point to the need for policies that move beyond short-term stabilization and address systemic inefficiencies in the food system.

Fiscal interventions such as subsidies and tax measures have been implemented to support domestic production and make food more affordable. However, these instruments often produce mixed outcomes due to targeting inefficiencies and administrative limitations. For example, subsidies for staple commodities disproportionately benefit urban and higher-income populations while leaving marginalized and rural households with limited access to nutrient-rich foods. Additionally, reliance on subsidies for a narrow set of staples may discourage diversification in domestic agriculture in restricting the availability of fruits, vegetables and protein-rich foods. VAT exemptions and reductions on certain items provide short-term price relief but do not adequately address seasonal price volatility or structural inefficiencies in supply chains. These patterns reveal the limitations of fiscal policy when applied in isolation while highlighting the need for complementary strategies such as targeted trade interventions, market stabilization and production support.

Trade and import dynamics constitute another major challenge for food security. Dependence on imported cereals, sugar and dairy exposes the country to global market fluctuations and external shocks including trade restrictions or logistical disruptions. While import liberalization can increase food availability and consumer choice, it risks undermining domestic production if not accompanied by supportive measures for local farmers. Protective tariffs intended to shield domestic agriculture have sometimes led to price distortions and supply shortages. Current trade policies also lack systematic mechanisms to balance nutritional objectives with economic efficiency, often prioritizing macroeconomic concerns over food system resilience. This underscores the need for integrated trade strategies aligned with broader food security and nutrition goals.

Institutional and governance limitations further constrain the effectiveness of policies. Coordination between ministries responsible for health, agriculture, trade and finance remains fragmented in leading to siloed policy implementation. Monitoring and evaluation mechanisms are weak and significant data gaps exist particularly at sub-national levels. Local knowledge and community perspectives are rarely incorporated into policy design while resulting in interventions that do not fully respond to seasonal cropping patterns, regional disparities or gendered dimensions of food access. In addition, the absence of robust early-warning systems and market intelligence impedes timely responses to price spikes or supply disruptions in leaving vulnerable populations exposed to nutritional risks.

Finally, climate variability and environmental constraints amplify these challenges. Domestic agricultural production is highly sensitive to monsoonal patterns, extreme weather events and soil fertility issues. Existing policies have insufficiently incorporated climate-smart practices, risk management or incentives for sustainable production. This gap threatens long-term productivity and magnifies the impact of trade and price shocks on household food security. Overall, the evidence highlights the urgent need for integrated policy interventions that address fiscal, trade, production and institutional limitations while promoting nutrition-sensitive outcomes, resilience and equity.

6.2. Validation Insights

The findings of the SACIN study were further examined and discussed during the stakeholder validation workshop conducted on 30 March 2026 at Renuka City Hotel, Colombo. The workshop brought together academics, policy experts, government representatives, researchers and practitioners working in the areas of trade, nutrition, agriculture, food systems and social protection. The objective of the workshop was to validate the key findings of the study, assess the practical relevance of the policy recommendations and identify emerging challenges influencing food and nutrition security in Sri Lanka. The discussions provided important reflections on the evolving policy environment and highlighted how recent global and domestic crises continue to intensify vulnerabilities within Sri Lanka's food system.

A major theme emerging from the validation discussions was that Sri Lanka's food and nutrition challenges are increasingly shaped by multiple overlapping crises rather than isolated economic or climatic shocks alone. Participants emphasized that the country is now facing a highly complex environment characterized by global geopolitical conflicts, energy market instability, exchange-rate volatility, inflationary pressures and disruptions to international food supply chains. It was highlighted that the recent global oil and gas crises have introduced new dimensions of uncertainty into food systems by increasing transportation costs, fertilizer prices, energy costs and import expenditures.

Stakeholders noted that unlike previous economic shocks, the current crisis environment combines both supply-side and macroeconomic pressures simultaneously, thereby making food affordability and nutrition security more fragile and difficult to stabilize.

The workshop discussions strongly reinforced the study findings regarding the disproportionate burden faced by low-income and nutritionally vulnerable households. Participants observed that poorer households continue to allocate a significantly larger proportion of their income toward food expenditure compared to middle-income and higher-income households. As a result, rising food prices and inflation have severe implications for household consumption patterns, dietary quality and nutritional wellbeing. Stakeholders highlighted that vulnerable populations including estate communities, rural households, women, children and pregnant mothers are increasingly forced to adopt negative coping strategies in response to food price increases and declining purchasing power. These coping mechanisms include reducing meal frequency, skipping meals, lowering dietary diversity and shifting consumption toward cheaper calorie-dense staple foods while reducing intake of nutrient-rich foods such as pulses, dairy products, fruits, vegetables and protein sources.

Particular concern was expressed regarding the long-term nutritional consequences of these dietary adjustments. Participants emphasized that while households may succeed in temporarily managing hunger through low-cost staple consumption, the deterioration in dietary quality could significantly worsen malnutrition, micronutrient deficiencies and non-communicable disease risks in the future. It was also observed that affordability rather than nutritional awareness has become the dominant factor shaping food choices among vulnerable groups. The discussions highlighted that even when households recognize the importance of consuming nutritious foods, economic constraints and high cooking energy costs often discourage the preparation and consumption of healthier foods. For example, stakeholders noted that foods requiring longer cooking times such as pulses are increasingly avoided due to rising fuel and gas prices in leading households to depend more heavily on processed and ready-to-eat food items.

The validation workshop further highlighted important gender dimensions associated with food insecurity and nutritional vulnerability. Several participants emphasized that women, particularly mothers, continue to bear a disproportionate burden during periods of food scarcity and economic stress. Evidence emerging from the qualitative discussions indicated that women often reduce their own food intake or skip meals in order to prioritize children and other household members. Participants noted that these intra-household food distribution patterns remain deeply embedded within certain social and cultural contexts, thereby reinforcing gender-based nutritional inequalities. Concerns were also raised regarding the implications of prolonged nutritional deprivation among pregnant and lactating mothers, particularly for maternal health and child development outcomes.

Another key issue extensively discussed during the validation workshop was the role of fiscal and trade policy structures in shaping food affordability and market stability. Stakeholders highlighted that Sri Lanka's taxation system remains highly complex, fragmented and unpredictable, particularly due to the presence of multiple para-tariffs, specific commodity levies and frequent revisions to import duties. Participants emphasized that sudden changes in tariff rates, special commodity levies and import restrictions create significant uncertainty for traders, producers and consumers while weakening long-term investment confidence within food value chains. The workshop discussions strongly supported the need for a more transparent, predictable and simplified fiscal and trade policy framework capable of reducing market distortions and improving policy consistency.

The discussions also emphasized the importance of adopting targeted social protection mechanisms rather than relying solely on universal subsidies and price controls. While stakeholders acknowledged that universal price support measures may provide temporary relief during crises, concerns were raised regarding their substantial fiscal costs and limited targeting efficiency. Participants stressed the importance of strengthening social registry systems, improving beneficiary identification mechanisms and expanding targeted assistance programs for nutritionally vulnerable populations. It was highlighted that social protection systems should move beyond short-term emergency responses toward more adaptive and nutrition-sensitive approaches capable of addressing structural vulnerabilities and recurring economic shocks.

A further important insight generated during the workshop was the need for integrated and multi-sectoral policy coordination across food systems, nutrition, trade, agriculture, health and economic governance institutions. Participants repeatedly emphasized that food and nutrition security cannot be addressed solely through isolated agricultural or welfare interventions. Instead, effective policy responses require coordinated action linking macroeconomic stabilization, agricultural production planning, trade facilitation, nutrition-sensitive social protection and public health strategies. The workshop therefore reinforced the broader conclusion of the study that fragmented policy responses are insufficient to address the multidimensional nature of food insecurity and nutritional vulnerability in Sri Lanka.

The validation process additionally highlighted several methodological and institutional limitations affecting evidence-based policymaking in Sri Lanka. Researchers and stakeholders noted the limited availability of timely household consumption data, delays in releasing national survey datasets and the absence of integrated food, nutrition and trade databases. These data limitations significantly constrain the ability of researchers and policymakers to conduct real-time assessments of food insecurity, dietary behavior and nutrition outcomes during rapidly evolving crises. Participants also emphasized the need for more mixed-method and longitudinal research approaches capable of integrating quantitative dietary assessments with qualitative household-level evidence in order to better understand the complex socioeconomic and behavioral dimensions of food insecurity.

Overall, the validation workshop served as an important platform for confirming the relevance and credibility of the SACIN study findings while simultaneously identifying emerging risks and future policy priorities. The discussions demonstrated broad stakeholder agreement regarding the growing vulnerability of Sri Lanka's food system to economic shocks, trade disruptions and nutritional inequalities. At the same time, the workshop underscored the urgent need for coordinated, evidence-based and nutrition-sensitive fiscal and trade policy reforms capable of protecting vulnerable populations in strengthening food system resilience and ensuring equitable access to nutritious diets under increasingly uncertain economic and global conditions.

6.3. Policy Recommendations

To address the challenges identified in the current policy landscape, Sri Lanka requires a set of integrated interventions that leverage fiscal, trade, market and institutional mechanisms to strengthen food security, nutrition and resilience. Fiscal interventions should be redesigned to target both accessibility and nutritional quality. This includes reconfiguring subsidies to prioritize nutrient-rich foods such as pulses, fruits, vegetables and dairy rather than focusing narrowly on staple grains. Targeted cash transfers or vouchers for low-income households can complement subsidies to ensure

equitable access to healthy diets, particularly in rural and marginalized areas. VAT reductions or exemptions can be strategically applied to nutrient-dense foods while maintaining a balance to avoid fiscal inefficiencies. Additionally, incentives for smallholder farmers to adopt diversified and climate-smart production practices can enhance domestic availability of nutritious foods and reduce import dependence.

Trade and import strategies should focus on achieving a balance between ensuring year-round availability of essential foods and protecting domestic production. Strategic import planning can mitigate exposure to global price volatility by prioritizing essential commodities that cannot be reliably produced locally during certain seasons. Simultaneously, trade policies should include safeguards for domestic producers such as minimum import price thresholds or temporary tariffs that prevent market disruptions from undermining local farming livelihoods. Harmonizing trade policy with agricultural support programs ensures that local farmers remain competitive that encourages domestic production diversification and strengthens the resilience of national food systems to external shocks.

Price stabilization mechanisms are critical to protecting both consumers and producers from seasonal and global market fluctuations. Tools such as buffer stocks for staples and key nutrient-rich foods, minimum support prices for domestic crops and responsive market information systems can prevent extreme price volatility and ensure stable food access. Improved forecasting of supply-demand imbalances and timely interventions during high-price periods can safeguard households' purchasing power and reduce negative nutritional consequences. Price stabilization must be complemented by interventions that strengthen domestic storage, logistics and distribution infrastructure to prevent post-harvest losses and maintain market efficiency.

Gender engagement and social inclusion should be explicitly incorporated into all policy interventions. Women play a central role in food production, preparation and household nutrition yet they often face structural barriers such as limited access to land, credit, inputs and decision-making power. Policies should include targeted support for women farmers, entrepreneurs and caregivers such as access to extension services, climate-smart inputs, financial literacy programs and participatory decision-making platforms. Ensuring that women are active participants in policy design and implementation not only enhances equity but also strengthens the effectiveness of interventions as evidence shows that women's engagement directly improves household nutrition outcomes and resilience to shocks.

Institutional coordination and governance reforms are essential to implement these interventions effectively. Multi-sectoral platforms that bring together ministries of health, agriculture, trade, finance and social protection can foster coherent policy design and implementation. Strengthening inter-agency data sharing and monitoring frameworks ensures that policies are responsive to real-time market trends, seasonal production cycles and regional disparities. Incorporating community-level feedback especially from marginalized populations and women can improve targeting and program effectiveness. Capacity building within local governance structures is equally important to operationalize policies on the ground in ensuring that interventions reach the households most in need.

Finally, climate-smart and sustainable interventions should be mainstreamed into all aspects of food policy. This includes promoting resilient cropping patterns, water-efficient irrigation, agroforestry and sustainable livestock management to reduce vulnerability to climate shocks. Integrating climate risk considerations into both fiscal and trade interventions ensures long-term sustainability and protects

household nutrition from environmental disruptions. By combining fiscal incentives, trade management, market stabilization, institutional coordination and climate-smart production, Sri Lanka can build a more resilient, equitable and nutrition-sensitive food system capable of withstanding future economic, environmental and social shocks.

6.4. Monitoring, Evaluation and Future Research

Effective implementation of policy interventions requires a robust monitoring and evaluation (M&E) framework that tracks progress, identifies gaps and informs adaptive management. Monitoring systems should focus on key indicators related to food security, nutrition and household welfare. These include dietary diversity, nutrient intake, household food expenditure, market prices, domestic production levels and import volumes. Regular monitoring at national and sub-national levels is critical to capture regional disparities, seasonal fluctuations and the impact of interventions on vulnerable populations. In addition, integrating gender-sensitive indicators ensures that the nutritional needs of women, children and marginalized groups are adequately addressed. Data from these indicators can be used to identify early warning signals for food insecurity or market disruptions in enabling timely policy responses and targeted support.

Evaluation mechanisms must assess both the efficiency and effectiveness of interventions. This includes analyzing whether fiscal measures, trade policies and market stabilization tools are achieving intended outcomes without unintended negative consequences. Evaluations should incorporate qualitative evidence from communities to understand local challenges, coping strategies and perceptions of policy interventions. Periodic evaluations also provide insights into institutional performance, identifying bottlenecks in coordination among ministries, implementation gaps at local levels and opportunities for improving service delivery. Evidence-based evaluation ensures that policies are continuously refined to remain responsive to evolving market, social and environmental conditions.

Future research priorities should focus on filling critical data gaps that limit evidence-driven decision-making. Studies are needed to assess the long-term impacts of fiscal and trade policies on household nutrition, production incentives and market dynamics. Research on sub-national disparities in food access, price volatility and climate-induced production risks can inform targeted interventions that address region-specific vulnerabilities. Additionally, interdisciplinary research combining economics, nutrition, climate science and social behavior can support the development of integrated, nutrition-sensitive food system policies. Strengthening analytical capacity within national institutions for modeling, forecasting and policy simulation will further enhance evidence-based planning and intervention design.

Finally, fostering a culture of continuous learning and knowledge sharing at both national and regional levels is essential. By integrating research findings into policy cycles, encouraging cross-ministry collaboration and promoting engagement with regional platforms such as SACIN, Sri Lanka can build resilient, adaptive and sustainable food systems. Monitoring, evaluation and research together provide the foundation for evidence-informed decision-making in enabling the country to anticipate challenges, optimize resource allocation and ensure that interventions effectively enhance food security, nutrition and welfare outcomes for all populations.

6.5. Way Forward: National Roadmap and Regional Engagement

The evidence from this study underscores the need for a comprehensive national roadmap that aligns fiscal, trade, market, institutional and climate-smart interventions to strengthen Sri Lanka's food system, improve nutrition outcomes and enhance resilience to shocks. At the national level, this roadmap should establish clear objectives, implementation timelines and accountability mechanisms for each policy area. Key actions include targeting fiscal subsidies and support programs to nutrient-rich foods, integrating trade and import strategies with domestic production incentives and institutionalizing price stabilization mechanisms that protect both consumers and producers. Multi-sectoral coordination platforms must be strengthened to ensure coherent planning across ministries of health, agriculture, trade, finance and social protection while local governance units are equipped to implement interventions effectively and inclusively. Gender-sensitive approaches should be embedded in all aspects of policy design and execution in ensuring that women and marginalized groups have access to resources, training and decision-making opportunities, thereby improving household nutrition and resilience.

Regional engagement through SACIN provides an additional dimension for achieving food system resilience and nutrition security. Sri Lanka's participation in harmonized regional initiatives such as joint data collection, research programs and the development of standardized nutrition and food security indicators can facilitate knowledge sharing and cross-learning. Regional cooperation allows countries to anticipate market fluctuations, coordinate responses to price shocks and design evidence-based trade policies that strengthen both national and regional food security. By leveraging SACIN's platform for technical support, capacity building and collaborative research, Sri Lanka can enhance policy effectiveness while contributing to broader regional nutrition goals.

The roadmap should also prioritize monitoring, evaluation and adaptive learning. National systems must incorporate robust, gender-sensitive indicators that track dietary diversity, household food access, market prices, domestic production and import trends. Data gaps should be systematically addressed through research with emphasis on sub-national and household-level information to inform targeted interventions. Evaluation frameworks should assess both policy outcomes and institutional performance in allowing lessons learned to inform future program design and enhance efficiency. Continuous engagement with communities particularly women and vulnerable populations ensures that policies remain responsive to local realities and equitable in impact.

Finally, the way forward emphasizes long-term resilience and sustainability. Climate-smart agricultural practices, sustainable resource management and environmental risk mitigation must be mainstreamed into all policy areas to protect the food system from future shocks. Integrating fiscal, trade, market, institutional, gender and climate considerations provides a holistic approach that strengthens national food security, enhances nutrition outcomes and supports regional cooperation. By implementing this roadmap, Sri Lanka can move towards a more resilient, equitable and nutrition-sensitive food system while positioning itself as a proactive partner in South Asia's collective efforts to improve food security and nutrition through SACIN.

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ANNEX 1

FGD Guide for Adolescents

Introduction (3–5 minutes)

Facilitator Script:

Good morning/afternoon, everyone. I'm ……. from Wayamba University of Sri Lanka. We are conducting this focus group as part of a research project led by the Centre for Poverty Analysis, Sri Lanka. Thank you for joining us today to share your experiences about food and nutrition in your households and communities. This discussion will take about 30–40 minutes. There are no right or wrong answers, just your valuable perspectives. Please feel free to share your thoughts, even if they differ from others. We're recording this session to capture all your insights accurately, as we can't write fast enough to note everything. Please speak one at a time so everyone's voice is heard. Your names will not be used in our reports, and we guarantee complete confidentiality. Let's get started!

Opening Activity: Introductions

- Ask participants to share their first names and, optionally, a favorite food they enjoy cooking or eating.
- Example: "Let's go around and share your name and a favorite food. I'll start my name is ……., and I love ….!"
- Tip: Keep this light and quick to build rapport and make participants feel comfortable.

OBJECTIVE 1: To understand current food availability and choices (5 minutes)

Q1: What types of food do you typically eat?

- **Probes:**
    - What kinds of fruits and vegetables, including green leafy ones, do you usually eat?
    - What yams, grains or cereals do you include? (e.g., rice, wheat, maize, bread, noodles)
    - Do you add any protein sources? (e.g., meat, fish, eggs, legumes, nuts)
    - What dairy products are available? (e.g., milk, yogurt, cheese)
    - Do you and your family consume biscuits, sweet or savory snacks, or buy (ready-made foods like string hoppers, rice packets, or Kottu) from shops?

OBJECTIVE 2: Perceptions and Knowledge About Healthy Eating and Nutritious Meals (6 minutes)

Q2: According to you, what does a healthy diet look like?

- **Probes:**

- How much of your plate do you believe should be fruits, vegetables, proteins (like meat, fish, eggs, or legumes), and grains?
- Do you have any idea about dietary guidelines for Sri Lankans?

Q3: Why do you think it's important to eat healthy foods?

- **Probes:**
  - Why do we need to eat healthy foods?
  - What happens, if we don't eat healthy food?
  - Do you think there's a relationship between what you eat and non-communicable diseases?

OBJECTIVE 3: Understand Decision-Making and Buying Behavior (6 minutes)

Q4: What are the main factors that influence your decisions when buying and choosing food?

- **Probes:**
  - How does price affect what you buy? Do you change your choices when prices go up?
  - Does the availability of certain foods affect your decisions (seasonality, price shocks)?
  - How much do health or nutrition concerns influence your purchases?
  - Do you, in general, pay attention to labels or packaging? What kind of information do you usually check?
  - How do people around you (family, friends, social media) influence your food choices?

OBJECTIVE 4: Explore Climate Impact on Food (5 minutes)

Q5: Have you noticed changes in availability, price, or quality of foods due to climate change?

- **Probes:**
  - Which types of foods have become harder to find due to weather changes?
  - Have prices of certain foods gone up during or after floods, droughts, or storms?
  - Have you noticed any changes in the freshness or quality of local produce?

OBJECTIVE 5: Understand Attitudes on Food Costs (5 minutes)

Q6: Interactive Activity

Let's do a quick activity to understand your thoughts. I'm going to write two statements, and I'd like each of you to take a minute to write down whether you agree, disagree, or feel neutral about each one and briefly explain why.

Please use the paper provided.

Statements

1. “When food prices rise, families reduce protein-rich foods like meat, fish, eggs, and pulses first.”
2. “It’s often cheaper to buy unhealthy food than healthy food.”

Q7. when it becomes difficult to afford healthy foods how do you or your family typically manage with the situation?

OBJECTIVE 6: To explore the impact and challenges of various support programs on food access and nutrition. (5 minutes)

Q8: Have you ever received any help or support from school, the government, or any group or organization to get better food?

- **Probes:**
    - Can you tell me what kind of help it was and if it made it easier for you to eat healthy or enough food?
    - What kinds of actions do you know that the government has taken to reduce unhealthy eating and encourage healthier food choices? (School food environment, are there any rules about bringing certain types of foods to school)

OBJECTIVE 7: Assess awareness of Trade, fiscal and food policies, guidelines and regulations (5 minutes)

Q9: What kinds of actions do you know that the government follows to reduce unhealthy eating and encourage healthier food choices?

- **Probes:**
    - Have you heard of any taxes, or restrictions on unhealthy foods or sugary drinks?
    - Are you aware of color-coded labels (like red, yellow, and green) that show how much sugar, salt, or fat is in food packages? How often do you or your family use these color codes when choosing foods?
    - Are there any subsidies or campaigns promoting fruits, vegetables, or other nutritious foods?

OBJECTIVE 8: Suggestions to Improve Nutrition (3 minutes)

Q10: According to your view, how can food consumption in your family be improved?

- **Probes:**
    - Subsidies, price control, more social safety and support programmes, farmer support or support for agriculture (home gardens), nutrition education/awareness, capacity building, school meals, and school-related programmes?

- Also, what ideas do you have for growing a variety of foods at home or nearby, especially when resources are limited?

Ending (2–3 minutes)

Facilitator Script:
Thank you all so much for sharing your valuable insights. This is the end of our discussion, but if there's anything you'd like to add or feel we missed, please share now. Your input will greatly help our research at Wayamba University to understand how policies affect food choices and health in Sri Lanka. Thank you again for your time!

FGD Guide for Adults

Introduction (3–5 minutes)

Facilitator Script:

Good [morning/afternoon], everyone. I'm ……from Wayamba University of Sri Lanka. We are conducting this focus group as part of a research project led by the Centre for Poverty Analysis, Sri Lanka. Thank you for joining us today to share your experiences about food and nutrition in your households and communities. This discussion will take about 30–40 minutes. There are no right or wrong answers, just your valuable perspectives. Please feel free to share your thoughts, even if they differ from others. We're recording this session to capture all your insights accurately, as we can't write fast enough to note everything. Please speak one at a time so everyone's voice is heard. Your names will not be used in our reports, and we guarantee complete confidentiality. Let's get started!

Opening Activity: Introductions

- Ask participants to share their first names and, optionally, a favorite food they enjoy cooking or eating.
- Example: "Let's go around and share your name and a favorite food. I'll start my name is ……, and I love ….!"
- Tip: Keep this light and quick to build rapport and make participants feel comfortable.

OBJECTIVE 1: To understand current food availability and choices (5 minutes)

Q1: If you looked in the refrigerator or the kitchen at your home right now, what kinds of foods would you find?

- Probes:
    - What kinds of fruits and vegetables, including green leafy ones, do you usually eat?
    - What yams, grains or cereals do you include? (e.g., rice, wheat, maize, bread, noodles)
    - Do you have any protein sources? (meat, fish, eggs, legumes, nuts)
    - What dairy products are available? (milk, yogurt, cheese)

- do you and your family consume biscuits, sweet or savory snacks, or buy (ready-made foods like string hoppers, rice packets, or Kottu) from shops?

OBJECTIVE 2: Perceptions and Knowledge About Healthy Eating and Nutritious Meals (6 minutes)

Q2: According to you, what does a healthy diet look like?

- **Probes:**
  - How much of your plate do you believe should be fruits, vegetables, proteins (like meat, fish, eggs, or legumes), and grains?
  - Do you have any idea about **dietary guidelines** for Sri Lankans?

Q3: Why do you think it's important to eat healthy foods?

- **Probes:**
  - Why do we need to eat healthy foods?
  - What happens, if we don't eat healthy food?
  - Do you think there's a relationship between what you eat and non-communicable diseases?

Q4: I like to get your opinion on women's diets compared to other members of the family. What do you think, how do women usually eat compared to men or children in the household?

- Probes:
  - Are there certain foods that women avoid or eat less of?
  - Do women get the same quality of food as others? For example, rice, meat, fruits, or special items?

OBJECTIVE 3: To understand decision making and buying behavior (6 minutes)

Q5: What are the main factors that influence your decisions when buying food?

- **Probes:**
  - How does **price** affect what you buy? Do you change your choices when prices go up?
  - Does the **availability** of certain foods affect your decisions (seasonality, price shocks)?
  - How much do **health or nutrition concerns** influence your purchases?
  - Do you, in general, pay attention to **labels or packaging**? What kind of information do you usually check?
  - How do people around you **(family, friends, social media) influence** your food choices?

OBJECTIVE 4: Explore Climate Impact on Food (5 minutes)

Q6: Have you noticed changes in availability, price, or quality of foods due to climate change?

- **Probes:**
    - Which types of foods have become harder to find due to weather changes?
    - Have prices of certain foods gone up during or after floods, droughts, or storms?
    - Have you noticed any changes in the freshness or quality of local produce?

OBJECTIVE 5: Understand Attitudes on Food Costs and coping strategies (5 minutes)

Q7: Interactive Activity

Let's do a quick activity to understand your thoughts. I'm going to write two statements, and I'd like each of you to take a minute to write down whether you agree, disagree, or feel neutral about each one and briefly explain why.

Please use the paper provided.

Statements

3. "When food prices rise, families reduce protein-rich foods like meat, fish, eggs, and pulses first."
4. "It's often cheaper to buy unhealthy food than healthy food."

Q8. When it becomes difficult to afford healthy foods how do you or your family typically manage with the situation?

OBJECTIVE 6: To explore the impact and challenges of various support programs on food access and nutrition. (5 minutes)

Q9: Have you received any support from the government, NGOs, or private sector programs that helped you provide better food for your family? Can you briefly explain which program and how it helped or didn't help?

- Probes:
    - Which programs have you found helpful, and which less so? **(Aswesuma or …)**
    - If your household receives Aswasuma or any other social protection programme, who receives the money or financial benefits? Do you think there's a need for a change in the recipients of such programs?
    - How do you use these programs to access healthier foods?
    - Have these supports made it easier or sometimes harder to afford nutritious meals?
    - What challenges or barriers have you faced in accessing these programs?

OBJECTIVE 7: Assess awareness of Trade, fiscal and food policies, guidelines and regulations (5 minutes)

Q10: What kinds of actions do you know that the government has taken to reduce unhealthy eating and encourage healthier food choices?

- **Probes:**
    - Have you heard of any taxes or restrictions on unhealthy foods or sugary drinks?
    - Are you aware of color-coded labels/ traffic light systems (like red, yellow, green) that show sugar, salt, or fat content? (How often do you or your family use these color codes when choosing foods?)
    - Are there any subsidies or campaigns promoting fruits, vegetables, or other nutritious foods in your area or any similar programmes you have heard of?

OBJECTIVE 8: Suggestions to Improve Nutrition (3 minutes)

Q11: According to your view, how can food consumption in your family be improved?

- **Probes:**
    - Subsidies, price control, more social safety and support programmes, farmer support or support for agriculture (home gardens), nutrition education /awareness, capacity building, school meals, and school-related programmes?
    - Also, what ideas do you have for growing a variety of foods at home or nearby, especially when resources are limited?

Ending (2–3 minutes)
Thank you all so much for sharing your valuable insights. This is the end of our discussion, but if there's anything you'd like to add or feel we missed, please share now. Your input will greatly help our research at Wayamba University to understand how policies affect food choices and health in Sri Lanka. Thank you again for your time!

FGD Guide for Lactating and Pregnant Mothers

Introduction (3–5 minutes)

Facilitator Script:
Good [morning/afternoon], everyone. I'm ……. from Wayamba University of Sri Lanka. We are conducting this focus group as part of a research project led by the Centre for Poverty Analysis, Sri Lanka. Thank you for joining us today to share your experiences about food and nutrition in your households and communities. This discussion will take about 30–40 minutes. There are no right or wrong answers, just your valuable perspectives. Please feel free to share your thoughts, even if they differ from others.

We're recording this session to capture all your insights accurately, as we can't write fast enough to note everything. Please speak one at a time so everyone's voice is heard. Your names will not be used in our reports, and we guarantee complete confidentiality. Let's get started!

Opening Activity: Introductions

- Ask participants to share their first names and, optionally, a favorite food they enjoy cooking or eating.
- Example: “Let’s go around and share your name and a favorite food. I’ll start my name is ……., and I love ….!”
- Tip: Keep this light and quick to build rapport and make participants feel comfortable.

OBJECTIVE 1: Understand Current Food Availability and Choices (5 minutes)

Q1: What types of food do you typically eat?

- **Probes:**
    - What kinds of fruits and vegetables, including green leafy ones, do you usually eat?
    - What yams, grains or cereals do you include? (e.g., rice, wheat, maize, bread, noodles)
    - Do you add any protein sources? (e.g., meat, fish, eggs, legumes, nuts)
    - What dairy products are available? (e.g., milk, yogurt, cheese)
    - do you and your family consume biscuits, sweet or savory snacks, or buy (ready-made foods like string hoppers, rice packets, or kottu) from shops?

OBJECTIVE 2: Perceptions and knowledge about healthy eating and nutritious meals. (6 minutes)

Q2: According to you, what does a healthy diet look like?

- **Probes:**
    - How much of your plate do you believe should be fruits, vegetables, proteins (like meat, fish, eggs, or legumes), and grains?
    - Do you have any idea about **dietary guidelines** for Sri Lankans?

Q3: Why do you think it’s important to eat healthy foods?

- Probes:
    - Why do we need to eat healthy foods?
    - What happens, if we don’t eat healthy food?
    - Do you think there’s a relationship between what you eat and non-communicable diseases?
    - Can you think of any long-term consequences for children who are malnourished?

OBJECTIVE 3: Understand Decision-Making and Buying Behavior (6 minutes)

Q4: What are the main factors that influence your decisions when buying and choosing food?

- **Probes:**

- How does your current status (as a pregnant or lactating mother) affect food buying and decision-making about food currently?
- How much do health or nutrition concerns influence your purchases?
- How does price affect what you buy? Do you change your choices when prices go up?
- Does the availability of certain foods affect your decisions (seasonality, price shocks)?
- Do you, in general, pay attention to labels or packaging? What kind of information do you usually check?
- How do people around you (family, friends, social media) influence your food choices?

OBJECTIVE 4: Explore Climate Impact on Food (5 minutes)

Q5: Have you noticed changes in availability, price, or quality of foods due to climate change?

- **Probes:**
  - Which types of foods have become harder to find due to weather changes?
  - Have prices of certain foods gone up during or after floods, droughts, or storms?
  - Have you noticed any changes in the freshness or quality of local produce?

OBJECTIVE 5: Understand Attitudes on Food Costs (5 minutes)

Q6: Interactive Activity

Let's do a quick activity to understand your thoughts. I'm going to write two statements, and I'd like each of you to take a minute to write down whether you agree, disagree, or feel neutral about each one and briefly explain why.

Please use the paper provided.

Statements

5. "When food prices rise, families reduce protein-rich foods like meat, fish, eggs, and pulses first."
6. "It's often cheaper to buy unhealthy food than healthy food."

OBJECTIVE 6: To explore the impact and challenges of various support programs on food access and nutrition. (5 minutes)

Q7: Have you received any support from the government, NGOs, or private sector programs that helped you provide better food for you or your baby? Can you briefly explain which program and how it helped or didn't help?

- Probes:
  - Which programs have you found helpful, and which less so?

- If your household receives Aswasuma or any other soil protection programme, who receives the money or financial benefits? Do you think there's a need for a change in the recipients of such programs?
- How do you use these programs to access healthier foods?
- Have these supports made it easier or sometimes harder to afford nutritious meals?
- What challenges or barriers have you faced in accessing these programs?
- What kinds of practices have you learned or adopted to improve your baby's nutrition, especially during food preparation?

Q8: Have you noticed any improvements in your own or your baby's health due to participating in supportive programs, for example, programs that help manage body weight, provide nutrition guidance, or promote healthy lifestyles?

- Probes:
  - What changes did you notice in your or your baby's health after joining?
  - How did you feel emotionally or mentally during and after the program?

OBJECTIVE 7: Assess Awareness of Trade, Fiscal, and Food Policies, Guidelines, and Regulations (5 minutes)

Q9: What kinds of actions do you know that the government has taken to reduce unhealthy eating and encourage healthier food choices?

- **Probes:**
  - Have you heard of any taxes or restrictions on unhealthy foods or sugary drinks?
  - Are you aware of color-coded labels/ traffic light systems (like red, yellow, green) that show sugar, salt, or fat content? How often do you or your family use these color codes when choosing foods?
  - Are there any subsidies or campaigns promoting fruits, vegetables, or other nutritious foods in your area or any similar programmes you have heard of?

OBJECTIVE 8: Suggestions to Improve Nutrition (3 minutes)

Q10: According to your view, how can food consumption in your family be improved?

- **Probes:**
  - Subsidies, price control, more social safety and support programmes, farmer support or support for agriculture (home gardens), nutrition education/awareness, capacity building, school meals, and school-related programmes?
  - Also, what ideas do you have for growing a variety of foods at home or nearby, especially when resources are limited?

Ending (2–3 minutes)

Facilitator Script:

Thank you all so much for sharing your valuable insights. This is the end of our discussion, but if there's anything you'd like to add or feel we missed, please share now. Your input will greatly help our research at Wayamba University to understand how policies affect food choices and health in Sri Lanka. Thank you again for your time!

Key Informant Interview Guide

Good morning/afternoon. I'm ……., from Wayamba University of Sri Lanka. Thank you for taking the time to speak with me today. We are conducting interviews with local professionals and community leaders to better understand food and nutrition issues in this community.

This interview will take approximately 30 to 40 minutes. Please feel free to share your thoughts and experiences openly. There are no right or wrong answers, and all the information you provide will be kept confidential with us. We won't use any names of yours in our reports. You might have noticed the recorder. We are recording this session because we don't want to miss any of your comments.

Let's begin the discussion

Q1: From your experience, how would you describe the current state of nutrition status in your community?

Probes:

- What types of malnutrition (e.g., undernutrition, stunting, wasting, micronutrient deficiencies) and chronic diseases are most prevalent in your area?
- Are there particular groups in your community that are more vulnerable to malnutrition and chronic diseases?
- Have you observed any changes in malnutrition rates and chronic diseases among children, pregnant women, Lactating women, adolescents, adults or the elderly in your community?

Q2: What are the main causes of malnutrition and chronic diseases in your community? (If the answer is 'No' for Q1 skip this Q)

Probes:

- How have recent increases in food prices and shortages affected household nutrition?
- What role do poverty, unemployment, or reduced household income play in contributing to malnutrition?
- Are there any cultural beliefs or practices that influence malnutrition levels?

Q3: How would you assess the food security situation in your area?

(food security means everyone should be able to have sufficient quantity of nutritious /safe food at all time)

Probes:

- Have you noticed any changes in access to or availability of food items, especially staples like rice, vegetables, and animal sources of foods (e.g. Meat, fish, milk and eggs)?
- Are families able to afford nutritious food, or are they compromising on quality and quantity?

Q4: What factors are affecting food security in your area (village/town/estate areas) specifically?

Probes:

- How do transportation issues, market accessibility, or agricultural challenges affect food availability?

Q5: In your view, how aware are people in your community about the importance of a nutritious/healthy diet?

Probes:

- Where do they typically get their information on healthy eating (e.g., healthcare workers, media, schools)?
- Are there any misconceptions or cultural factors that affect dietary choices?
- Do families prioritize feeding children or vulnerable members with whatever resources they have?

Q6: What are the common barriers to consuming a healthy/nutritious diet in your community?

Probes:

- Are there specific foods that have become too expensive or scarce?
- How do taste preferences, convenience, or availability of fast foods influence dietary choices?

- How has the economic crisis and the resulting increase in the cost of living affected households' ability to maintain a balanced and nutritious diet?

Q7: What strategies are being used by households to cope with food insecurity, non-communicable diseases and malnutrition?

Probes:

- Have there been changes in food consumption patterns, such as reduced meal sizes or skipping meals?
- Are there community-based initiatives (like food sharing, kitchen gardens, or cooperatives) that help support food security?
- How effective are government or NGO interventions (like food aid, cash transfers, Triposha or school feeding programs) in addressing current challenges?
- Are there any local food **production** or home gardening efforts that help mitigate food shortages?

Q8: What kinds of actions or policies are you aware of that the government has implemented to reduce unhealthy eating and promote healthier food choices in the community?

Probes:

- Have you heard of any taxes or restrictions on unhealthy foods or sugary drinks?
- Are you aware of any government subsidies or campaigns that encourage the cultivation and consumption of fruits, vegetables, or other nutritious foods?

Q9: If you could recommend one policy change or initiative to improve nutrition and food security in Sri Lanka, what would it be?

Probes:

- What role should the government play in addressing food and nutrition challenges?
- Are there best practices from other regions or sectors that could be applied?

This is the end of this discussion. If you think you have missed anything, you can say it now. Thank you very much once again for having allocated your time to us and your information would be helpful for our research.

STUDY TEAM

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