Minimum Cost of the Diet (CoD) Pakistan

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CONTENTS

LIST OF ABBREVIATIONS

CoD – Cost of the Diet

CPI – Consumer Price Index

HIES – Household Integrated Economic Survey

ICT – Islamabad Capital Territory

KPK – Khyber Pakhtunkhwa

NNS – National Nutrition Survey

PC – Planning Commission

PDHS – Pakistan Demographic Health Survey

PES – Pakistan Economic Survey

SNF – Specialized Nutritious Food

SNUT – Staple Adjusted Nutritious Diet

WFP – World Food Programme

Foreword

Malnutrition is a serious public health problem in Pakistan that disproportionately affects women and children. Nationally, all forms of malnutrition in children are critically high including chronic and acute malnutrition and micronutrient deficiencies. The national stunting prevalence (chronic malnutrition) is critically high at 43.7%, whereas acute malnutrition prevalence (wasting) for children under 5 years of age is above the WHO's emergency level at 15.1%. The hidden hunger of micronutrient deficiencies is a universal concern with high prevalence of both young children and women of reproductive age deficient mostly in vitamin A, iron and zinc.

At these high levels of malnutrition, there is an indisputable impact in the country on children's physical and cognitive development that has cumulative effects of educational attainment and economic potential for current and future generations. Malnutrition in Pakistan has been estimated to cost the economy 2-3 percent of GDP per year which is more than the cost due to energy crisis.

The causal factors to malnutrition in Pakistan are numerous and varied, however the major underlying factors include both limitations in household access and affordability to nutritious foods and the food habits and preferences which shape food purchasing and preparation practices. It is essential to have an in-depth understanding of how these two underlying factors interact to shape household food consumption in order to best develop programs and interventions to reduce malnutrition. Pakistan since joining the SUN Movement has been endeavoring to create an enabling environment for improving nutrition situation and the cost of the diet analysis is a collective effort for creating evidence for achieving improved nutrition.

The Cost of the Diet analysis is an effort carried out to gain better understanding of the correlation of the effects of buying power on the availability and affordability of nutritious foods that in turn determines nutritional status in Pakistan. The results of the Pakistan Cost of the Diet Study establish at the sub-national level whether a nutritious diet is accessible using locally available foods and determine the percentage of households that can afford a nutritious diet using their current household food expenditure. Cost of the Diet analysis is an important advocacy tool that will be helpful to influence food and nutrition security policy at national and global level and is important for the design of appropriate nutrition interventions to ensure that vulnerable populations in Pakistan have access to affordable nutritious foods to prevent different forms of malnutrition.

I would like to extend my appreciation to the team involved in Cost of the Diet Study for their efforts and hard work they have provided in it and hope that all our nutrition partners shall use this study for better programming & implementation to scale up nutrition in the country.

Muhammad Aslam Shaheen
Chief Nutrition / SUN Focal Point Pakistan
Ministry of Planning Development,and Reform (MPD&R)

Message

WFP aims to complement the Government's efforts in enhancing food security and to reduce malnutrition in Pakistan with a focus on vulnerable populations. The design of effective strategies to address malnutrition relies on well-designed and thorough analysis of the nutrition situation and the many causal factors, which affect nutrition throughout the country. The Government of Pakistan conducted the National Nutrition Survey in 2011 to further understand the nutrition situation amongst vulnerable populations. This survey provided the basis by which current nutrition strategy and programming is being made however does not provide information on household access and affordability to nutritious foods.

As a part of WFP's collaborative efforts, a countrywide Cost of the Diet analysis was conducted, utilizing validated data from Government sources on household food consumption and expenditure and local food available and prices. Cost of the Diet analysis calculates the cheapest possible cost of a locally available diet that satisfies all nutritional requirements for a household, including vulnerable groups. In an additional analysis, the Cost of the Diet tool compares current household food expenditure against the calculated cost of a nutritious diet to determine if there is local physical and economic access and affordability to nutritious food.

Cost of the Diet analysis provides a baseline for the access and affordability to a nutritious diet at sub-National level. If periodically conducted, Cost of the Diet can be a tool to measure food security and act as a nutrition early warning system. Additionally, Cost of the Diet can be used to compare and model current and potential nutrition interventions (such as food fortification) to determine their relative impact on the household cost of a nutritious diet. The findings of the Pakistan Cost of the Diet Study are a vital component to understand what causes malnutrition in Pakistan and will be instrumental to advocate for appropriate nutrition interventions.

I take this opportunity to commend the colleagues from the Ministry of Planning Development and Reform, and Nutrition Section together with Vulnerability Analysis and Mapping Section of the World Food Programme for their collective work. We look forward to continued collaboration with the Government of Pakistan in years to come.

Mrs. Lola Castro
Country Director and Representative
World Food Programme, Pakistan

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EXECUTIVE SUMMARY

The Cost of the Diet (COD) is a method used to calculate the cheapest possible cost of a locally available diet that satisfies all nutritional requirements (energy, protein, fat and micronutrients) of a household or individual. A Cost of the Diet analysis is most useful when chronic malnutrition and micronutrient deficiencies are identified as major nutrition concerns in the country. In Pakistan, chronic malnutrition in children under five is categorized as very high with 43.7% of children stunted (National Nutrition Survey, NNS 2011)[1]. Acute malnutrition is in the critical category with 15.1% of children in the same age bracket wasted. The prevalence of micronutrient deficiencies is extremely high with 62% of children anemic, 54% have vitamin A deficiency and 40% vitamin D deficiency; while 39.2% of children under five have zinc deficiency. Based on recently conducted re-analysis of available validated national datasets (NNS 2011, PDHS 2012-2013 and MICS 2011), similar malnutrition indicators in children under five are revealed. The prevalence of stunting is very high (41%), wasting is very critical (17%) and the prevalence of micronutrient deficiencies is also very high (anemia 62%, iron deficiency 54%, vitamin A deficiency 55%, and zinc deficiency 59%). The prevalence of micronutrient deficiency in children is over 50% for even the wealthiest socio-economic strata and indicates that poor diet quality is a universal concern in Pakistan (Nutrition in the Cities – Pakistan. Secondary Data Analysis for Nutrition Status of Urban Children. Ministry of Planning, Development & Reform and World Food Programme, Pakistan, 2016). According to same source, micronutrient deficiencies as well as poor diet diversity are also highly prevalent in women of reproductive age.

The aim of the COD study was to establish whether a nutritious diet can be achieved based on foods available at the local market level and to determine whether the calculated nutritious diet is affordable based on actual household food expenditure patterns. The study set out to calculate a minimum cost of an energy only diet, an adequately nutritious diet and a staple- adjusted nutritious diet and to estimate the prevalence of households unable to afford these diets across Pakistan (28 divisions including Islamabad Capital Territory and four provinces: Balochistan, Khyber Pakhtunkhwa, Punjab, Sindh). The results of the analysis are presented for the province level and disaggregated by urban and rural areas at provincial level.

KEY FINDINGS

- In Pakistan, the food expenditure of 67.6% of households is below the staple adjusted nutritious diet threshold. This means that 2 out of every 3 households are not able to afford the (minimum) staple adjusted nutritious diet with their current food expenditure. In comparison, only 4.7 % of households in Pakistan are living below the energy only calorie poverty line set at 2,350 kcal per capita.

[1] National Nutrition Survey, 2011, Ministry of Planning, Development & Reform , Government of Pakistan.

- The province with the highest prevalence of households not able to afford a staple adjusted nutritious diet is Balochistan, with 83.4% of households. Other provinces also had high percentage of their population unable to afford a staple adjusted nutritious diet with Sindh (70.8%), Khyber Pakhtunkhwa (67.4%), and Punjab (65.6%) all having a majority of households falling under the threshold for a staple adjusted nutritious diet. Only in Islamabad were a majority of the households able to afford a staple-adjusted nutritious diet, however, non-affordability was still 31.5% of all households.
- Generally, non-affordability was higher in rural areas than in urban areas, however the majority of both urban and rural households in Punjab, Sindh, KPK and Balochistan could not afford the staple adjusted nutritious diet.
- The Minimum Cost of the Diet analysis determines the availability and affordability of foods in the diet and does not account for food preferences. People make choices for foods based on different reasons, not just health or nutrition. Therefore, the choice will not be as optimized for nutrition as the choices made by linear programming and hence, in reality, costs for meeting nutrient intake recommendations are likely to be higher than what has been calculated here. As indicated through household expenditure pattern, the tea consumption increases the total amount of expenditure allocated to nutritious foods at the household level.

KEY RECOMMENDATIONS

- The Minimum Cost of the Diet determines the lowest cost nutritious diet using locally available foods at the division and provincial level. The cost of this minimum nutritious diet is more consistent with the definition of food security "… access to sufficient safe and nutritious food that meets their dietary needs and food preferences …" than a calorie based food poverty line, as it takes into account dietary and nutrient needs of the household. The minimum cost of a nutritious diet, adjusted for key staples (i.e. staple food adjusted nutritious diet) reflects on local consumption, is recommended for use to complement current poverty lines that have been recently recalculated by the Government, to better understand access and affordability of nutritious foods to meet minimum nutrition requirements.
- Given the high level of quality of secondary data available in Pakistan, the Cost of the Diet analysis may be used in the future to routinely monitor the extent of household economic access to a nutritious diet. Using the current analysis, which is also based on secondary data, the cost of the diet could be updated with the latest market price data without need to re-analysis available consumption data through the Cost of the Diet software.
- Additional primary data collection to complement the existing secondary data (such as market price review and focus groups discussions) could be considered in areas identified with large percentages of households unable to afford a minimally nutritious diet. In these areas, more detailed and accurate information on seasonal prices should be collected to identify where further interventions may be required.

- As the analysis currently focuses on the household, it would be advisable to further analyse the individual cost of a staple-adjusted nutritious diet for key target groups who have higher nutrient needs than the general population, such as, pregnant and lactating women, adolescent girls and children aged 6-23 months. Specific interventions can be modelled within the Cost of the Diet tool to estimate their effectiveness in reducing the cost of the diet. Examples of potential interventions may include food fortification, introduction of specialized nutritious foods such as Wawa Mum or Acha Mum, conditional or unconditional cash transfers and /or vouchers for (subsidized) nutritious foods.

INTRODUCTION

1.1. Background

Situated in the northwest part of South Asia, Pakistan is the sixth most populous country in the world with an estimated population of approximately 195 million (PES 2015-2016). Pakistan is a federal parliamentary republic consisting of four provinces – Balochistan, Khyber Pakhtunkhwa, Punjab and Sindh – along with federally administrated Tribal Area (FATA), Gilgit Baltistan (GB), Azad Kashmir (AJK) and Islamabad. According to Pakistan Demographic Health Survey (2013-14), over 90% of the population lives in the four provinces with over 50% in Punjab Province (56%). Sindh is the second largest province, home to 23% of the population, followed by Khyber Pakhtunkhwa, KPK (13%) and Balochistan (5%).

Pakistan is exposed to numerous challenges; natural disasters, including earthquakes, floods, storms and droughts, in addition to a complex security situation, are all factors hindering economic growth. Formation of mega cities as a consequence of rapid and continuous urbanization has increased the vulnerability of local food production. In order to meet increasing demands of food, intensive cultivation and an increased utilization of fertilizers and pesticides have led to a deterioration of the land and water resources, leading to poor crop yields and, consequently, affecting the economy.

Based on international standards of poverty line (USD 2.00 a day, per person) for middle-income countries, 60 percent of the population in Pakistan lives below the poverty line (PES, 2013- 14). Rural poverty remains high in Pakistan with only 5 percent of the rural population in the highest wealth quintile compared to 55 percent of urban population (PDHS, 2013). Agriculture is the mainstay of Pakistan's economy and accounts for 20 percent of the GDP and employs 42.3 percent of the population. National production is fairly good with an estimated 2,470 kcal per person per day available at the national level (PES 2015-16). Assuming an average daily requirement per capita of 2,350 kcal, the national availability of calories exceeds the needs of the population. However, due to disparities in access and affordability, not all people are able to purchase and adequate amount of food to meet their daily requirement of 2,350 kcal. By using the Household Integrated Economic Survey 2013-14 data, Government of Pakistan has recently calculated the minimum cost to achieve the per capita daily requirement of 2,350 kcal at PKR 2,502 per month, which is set as the Pakistan Food Poverty Line. The latest figures from the Ministry of Planning, Development and Reform estimate that 30% of the Pakistan population lives below the poverty line established by using cost of basic needs method which takes into account both food and non-food expenditures (MPD&R, 2016)[2]. Similarly, recent report based

[2] Poverty in Pakistan: Raising the bar, Ministry of Planning, Development and Reform, Islamabad, 2016.

on analysis in four provinces (Punjab, KP, Sindh and Balochistan) and Islamabad capital territory shows prevalence of multidimensional poverty at 38% across these areas.[3]

The World Food Summit 1996 defined food security as existing "when all people at all times have access to sufficient, safe, and nutritious food to maintain a healthy and active life". Thus defined, food security is only ensured when nutritious food is consistently available, economically accessible to all individuals and properly utilized to meet the nutritional requirements and dietary needs of households. According to the Pakistan National Nutrition Survey (NNS, 2011), 58% households in Pakistan are food insecure. Rural households had higher levels of food insecurity (60.6%) compared to urban households (52.4%).

Access and affordability of a nutritious diet is a major concern in Pakistan with children and women of reproductive age at high risk of malnutrition. National Nutrition Survey 2011 report narrates very high prevalence of chronic malnutrition (stunting) in Pakistan, and indicates a serious public health concern with 43.7% of children stunted nationally. Additionally, the prevalence of wasting is 15.1% at the national level, which exceeds the WHO defined emergency threshold. The prevalence of wasting was found to be higher in rural areas (16.1%) than in urban areas (12.7%) with both urban and rural areas reaching critical levels of wasting. Based on recently conducted re-analysis of National Nutrition Survey (NNS 2011), Pakistan Demographic Household Survey (2012-2013) and Multiple Indicator Cluster Survey (Punjab MICS 2011), similar malnutrition indicators in children under five are revealed, it is found that 41 % of children are stunted whereas 16.7 % children are wasted nationally. The prevalence of wasting was found to be higher in rural areas (18.1%) than in urban areas (13.6%) with both urban and rural areas reaching critical levels of wasting (Nutrition in the Cities – Pakistan. Secondary Data Analysis for Nutrition Status of Urban Children, Ministry of Planning, Development & Reform and World Food Programme, Pakistan 2016). According to same source, micronutrient deficiencies as well as poor diet diversity are also highly prevalent in women of reproductive age, marginally higher in rural areas as compared with urban area.

Micronutrient deficiencies are a serious public health concern for both children and women in Pakistan, according to National Nutrition Survey 2011; 50% of non-pregnant woman are anemic whereas 51% of pregnant women were found anemic. Similarly, 42% non-pregnant women and 46% of pregnant women are found deficient in Vitamin A. The prevalence of micronutrient deficiencies in women are at alarming levels in both urban and rural areas but the situation is comparatively poorer in rural areas. Hypocalcaemia is highly prevalent with over half of women deficient in calcium. Similarly, levels of micronutrient deficiencies in children under five years are critically high and indicate a serious public health concern. In Pakistan, 62% of all children are

[3] Multi-dimensional poverty in Pakistan, 2016, Ministry of Planning, Development and Reform, and UNDP

anemic with 44% of anemia due to iron deficiency. Despite high coverage of vitamin A supplementation, 54% of children are vitamin A deficient with 21% severely affected (NNS 2011).

Poor nutrition status in children and women are largely attributed to poor dietary diversity. Findings from NNS shows that nationally only 7.3% of children between 6-23 months old consumed a minimum acceptable diet. Poor diet quality for these target groups may largely be responsible for the high prevalence of micronutrient deficiencies in Pakistan and significantly impact nutritious status.

1.2. The Cost of the Diet method and software

The Cost of the Diet (COD) is a method used to calculate the cheapest possible cost of a locally available hypothetical diet that satisfies all nutritional requirements (energy, protein, fat and micronutrients) of a household or individual. The Minimum Cost of the Diet is calculated using a linear programming tool, which optimizes (minimizes) the cost of the diet based on the price of all food items available under the constraint of meeting the nutrient requirements for a household of specific composition. Any other food basket at the same price will be less nutritious; similarly, any food basket of the same nutrient value will be more expensive. When combined with household income and expenditure data, the cost of the diet can be used to estimate the proportion of households that could theoretically afford the modeled nutritious diet. Members of households whose current food expenditure is below the cost of the calculated minimum nutritious diet are at higher risk of being malnourished.

A Cost of the Diet analysis is most useful when chronic malnutrition and micronutrient deficiencies have been identified as nutritional problems; such is the case in Pakistan. The Cost of Diet analysis establishes whether there is sufficient physical and economic ***access*** and ***affordability*** of nutritious foods. This is of crucial importance to understanding the variables impacting dietary consumption practices and behaviors, which directly impact nutrition status.

The results of COD analysis are used to inform programme design, through the identification of where and how access and affordability might affect dietary intake. The COD analysis can be conducted as a part of a baseline assessment as well as routine food and nutrition security surveillance where malnutrition is a chronic issue. The COD analysis can serve as an advocacy tool to promote the importance of food based nutrition interventions and to ensure that adequate food-based interventions meet the nutrient requirements of targeted populations.

1.3. Aims and objectives of the study

The aim of the study was to establish whether a nutritious diet can be achieved based on locally available foods to the households and whether the calculated nutritious diet is affordable based on actual household food expenditure patterns. The study set out to calculate a minimum cost of an energy only diet, nutritious diet, and staple adjusted nutritious diet by province and by

division, and to estimate the percentage of households able to afford the minimum calorie diet, the nutritious diet and the staple adjusted nutritious diet across Pakistan. Based on these results, the study aimed to identify priorities and devise suitable policy recommendations.

The study's objectives are as follows:

I. To calculate cost of the diet by division and by province;
II. To estimate the percentage of households able to afford a staple adjusted nutritious diet across Pakistan;
III. To identify priorities and devise tailored policy recommendations according to the segments of population identified.

2. METHODS

2.1. Minimum Cost of the Diet: energy only diet, nutritious diet and staple adjusted nutritious diet

The COD software was used to estimate the cost of an *energy only diet*, a *nutritious diet and a staple adjusted nutritious diet.* An *energy only diet* is a diet that meets only the average energy requirements of all the individuals of a defined household at the lowest cost, based on the cheapest sources of energy identified by the software. An energy only diet will not meet all the macronutrient and micronutrient requirements of an individual. A nutritious diet is a diet that meets the recommended intakes for energy, protein, fat and micronutrients (nine vitamins and four minerals) at the lowest cost. The hypothetical diet *does not* reflect the typical dietary habits, but it is useful to illustrate the extra cost of meeting specifications for micronutrients and macronutrients compared with a diet that only meets average energy needs. A *staple adjusted nutritious diet* is a minimum cost nutritious diet that contains a daily serving of the main staple. In Pakistan, the preferred staple of wheat was included for all household members except the infant child (12-23 months).

2.2. Sources of secondary data

The Household Integrated Economic Survey (HIES) was collected over a period of 11 months by the Pakistan Bureau of Statistics, between the period of August 2013 and June 2014. The survey collected information on economic indicators at household level, including food expenditure and consumption patterns. The data collected covered a total of 28 divisions across the provinces of Balochistan, Khyber Pakhtunkhwa, Punjab, Sindh, and Islamabad Capital Territory (ICT), and included urban and rural break down except for Islamabad. The key components of this survey utilized in the Cost of the Diet study for Pakistan were household food consumption and expenditure, and the average household size.

Consumer Price Index (CPI) data (2013-2014) was used as a source of price data for spinach which was not available in the HIES[4]. The lack of green leafy vegetables among the foods available in the HIES was deemed to be a limitation in calculating the cost of the diet, as these foods are important sources of vitamin A, vitamin C, folic acid, calcium and iron. The prices of food items included in the CPI were also compared to the HIES derived prices in order to ensure consistency in variation across seasons and commodities.

[4] The data are collected on a weekly basis from 76 markets across 40 urban centres by the Pakistan Bureau of Statistics. These data were used to derive the cost for a specific commodity that was not available in the HIES: *spinach*.

2.3. Food prices

In order to calculate the cost of a nutritious diet, it was necessary to establish the cost of 100g of food items available to households. The values of 58 food items (or groups of foods) were calculated based on the households' reported consumption of purchased foods and food expenditure (over a period of either a month or fourteen days) in the HIES. Foods that had been grouped were entered into the software as individual foods; for example, a single value for consumption and expenditure was recorded in the HIES for radish, turnip and carrot – the average calculated value for this group was applied to each food, therefore applying the same price per 100g to all three food items. Thus, a total of 78 foods were added to the software food list.

Consumption of food items expressed in liters was converted to grams using specific gravity reference values. Items expressed as the number of units consumed (e.g. number of eggs) were converted to a weight value using reference average weights for a single unit (e.g. average weight of a single egg). The average food prices for each item were calculated for all 28 divisions, as well as the averages for urban and rural areas (within each division). Average prices were also calculated at provincial level, also disaggregating by urban and rural area. Seasonal prices were also calculated based upon the date of the survey; surveyed households that were interviewed between October and February fell in the *Winter* season, whereas households interviewed between March and September fell in the *Summer* season.

2.4. Food composition tables

The nutrient composition of available foods is utilized to calculate a diet that meets nutrient requirements of a household. Nutritional information per 100g of 3,580 foods and supplements is an embedded component of the Cost of the Diet software. The database comprises of food composition tables from nine countries; of these, this study selected foods primarily from the India and Bangladesh tables, although also utilized the USDA, Egypt, Kenya, Mexico, Senegal, and Generic COD food composition tables. The foods were selected based on the most appropriate food item and its composition. A list of the foods from the HIES and the corresponding foods from the COD database can be found in *Appendix 1*.

2.5. Average household size and composition

Average household size was calculated for each division and province for both rural and urban areas. The household composition was based on a combination of individuals whose energy requirement was equivalent to (or closest to the value of) N x 2,350 kilocalories (where N is the average household size). An average consumption of 2,350 kilocalories per day was used as it represents the energy requirement for a normal healthy life prescribed by the Ministry of

Planning, Development and Reforms. Details of the household composition used for households between 5 – 9 individuals can be found in *Appendix 2*.

2.6. Affordability of diets

The cost of the nutritious diet was used as a threshold to estimate whether current households' expenditure on food is sufficient to afford a nutritious diet, here forth referred to as the *Nutritious Diet Threshold*. The same measurement with the inclusion of an adjustment for staple food preferences is referred to as the *Staple Adjusted Nutritious Diet Threshold*. Based on the energy only diet, also calculated using the COD software, a threshold for the affordability of an energy only diet was estimated, referred to as *Calorie Poverty Line*. In order to account for variation in household size and allow for comparison across divisions and provinces, per capita total food expenditure was calculated. Consequently, the estimated cost of the energy only, nutritious diet and staple adjusted nutritious diet were also adjusted by calculating a cost of the diet per capita.

The percentages of households that fell below these thresholds were calculated for all divisions. By applying the weights of each divisions to these percentages, the prevalence of nutrient and calorie poverty was calculated for the provinces. This allowed for a more accurate figure to be calculated based on the divisions thresholds and total food expenditure for each division. The results were categorized in three populations groups (Table 1):

***Table 1**. Population groups categorization based on affordability of energy only and nutritious diets.*

	Household group		
	A	**B**	**C**
Household food expenditure	Above the nutrient poverty line	Below nutrient poverty line, above food poverty line	Below the calorie poverty line
Diet affordability	Can afford nutritious diet	Can afford diet that meets energy, but not other nutrient needs	Cannot afford diet that meets either energy or nutrient needs
Likelihood of meeting nutrient requirements	More likely to have nutritious diet	Increased likelihood of (micro)nutrient deficiencies	High likelihood of dietary deficiencies
Type of policy intervention	Nutrition information	Micronutrient intervention, income assistance	Food/income assistance
***Examples* of interventions**	*Nutrition education campaign (this group may also benefit from staple food fortification)*	*Staple food fortification, home-fortification or SNF for <2 or <5, micronutrient supplementation*	*Social safety net interventions, incl. targeting specific groups with specific nutrition support*

Source: Geniez et al., 2014

In the above table; *Group A* represents households whose total food expenditure is above the minimum cost of a nutritious diet; *Group B* represents households whose current food spending is below the minimum cost of a nutritious diet or staple adjusted nutritious diet, but above the cost of a calorie sufficient diet; and *Group C* are households whose expenditure on food is below the minimum cost of a nutrient and calorie sufficient diet[5].

2.7. Limitations of the study

The minimum cost of the diet analysis focuses on the purchasing power of households as a way to estimate the risk of malnutrition. However, eating habits and food preferences are not accounted for in this analysis nor is the intra-household distribution of food accounted for in the analysis. The ability to access and afford the staple adjusted nutritious diet calculated by the COD software does not imply that a nutritious diet is currently being consumed or that the modeled nutritious diet contains preferred foods. The COD software models only a theoretical diet based on available foods in the market and should not be reflective of actual consumption patterns. Dietary consumption surveys are necessary to determine actual eating patterns and food preferences in Pakistan.

A potential limitation of the study is that foods that are available locally, such as wild foods, are not accounted for in this analysis, as only the food items captured in the HIES could be included. Additionally, average prices for foods that were grouped in the HIES (such as radish, turnip and carrot) were applied to all food items within that group, consequently these do not reflect possible variations across the prices of these commodities. To address these potential limitations, all 78 foods were included in the final analysis, providing a sufficiently diverse list of foods that allowed for a nutritious diet to be calculated. To ensure that prices were within a reasonable and realistic range, each price was compared with CPI prices of commodities.

Due to limited secondary data available, the minimum Cost of the Diet analysis could not be carried out for the areas of FATA, Gilgit Baltistan and Azad Jammu and Kashmir. These areas were therefore excluded from the analysis. Further analysis could be carried out for the remaining regions to allow for an integral picture of the Cost of the Diet in Pakistan. Details of the underlying parameters and the limitations of the Cost of the Diet software and method can be found in *Appendix 3*.

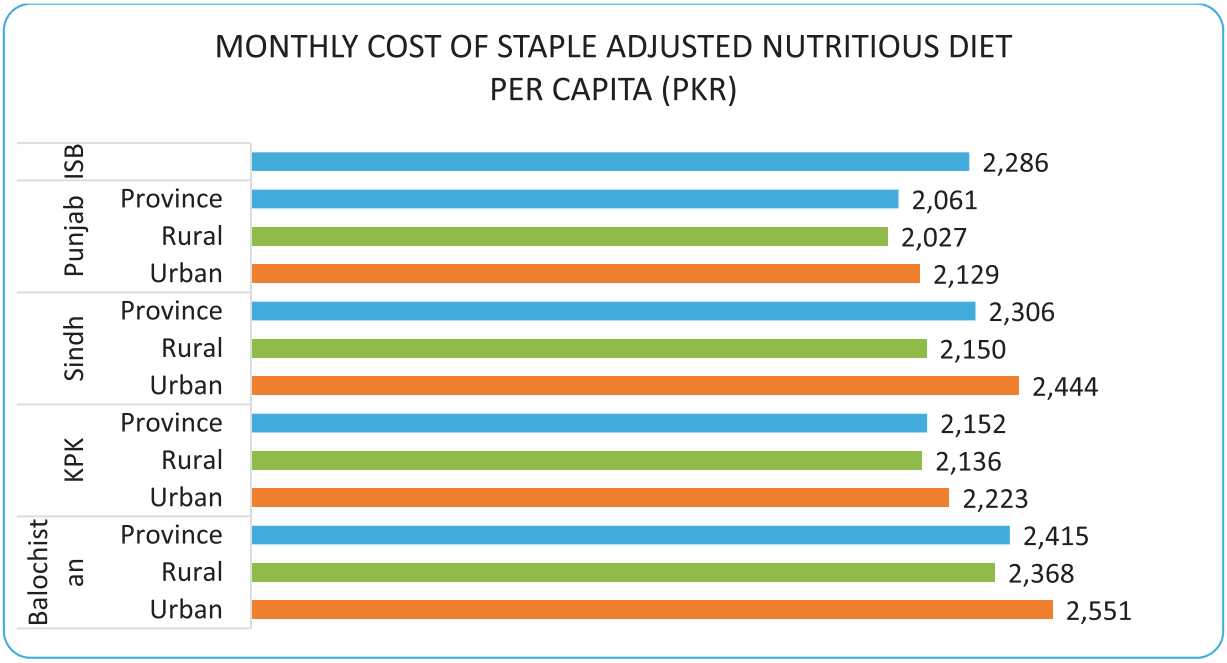
[5] Geniez *et al.*, 2014 "Integrating food poverty and minimum cost diet methods into a single framework: A case study using a Nepalese household expenditure survey." *Food and Nutrition Bulletin*, Vol. 35, no. 2, pp. 151 – 159

3. RESULTS

3.1. Cost of the Diet

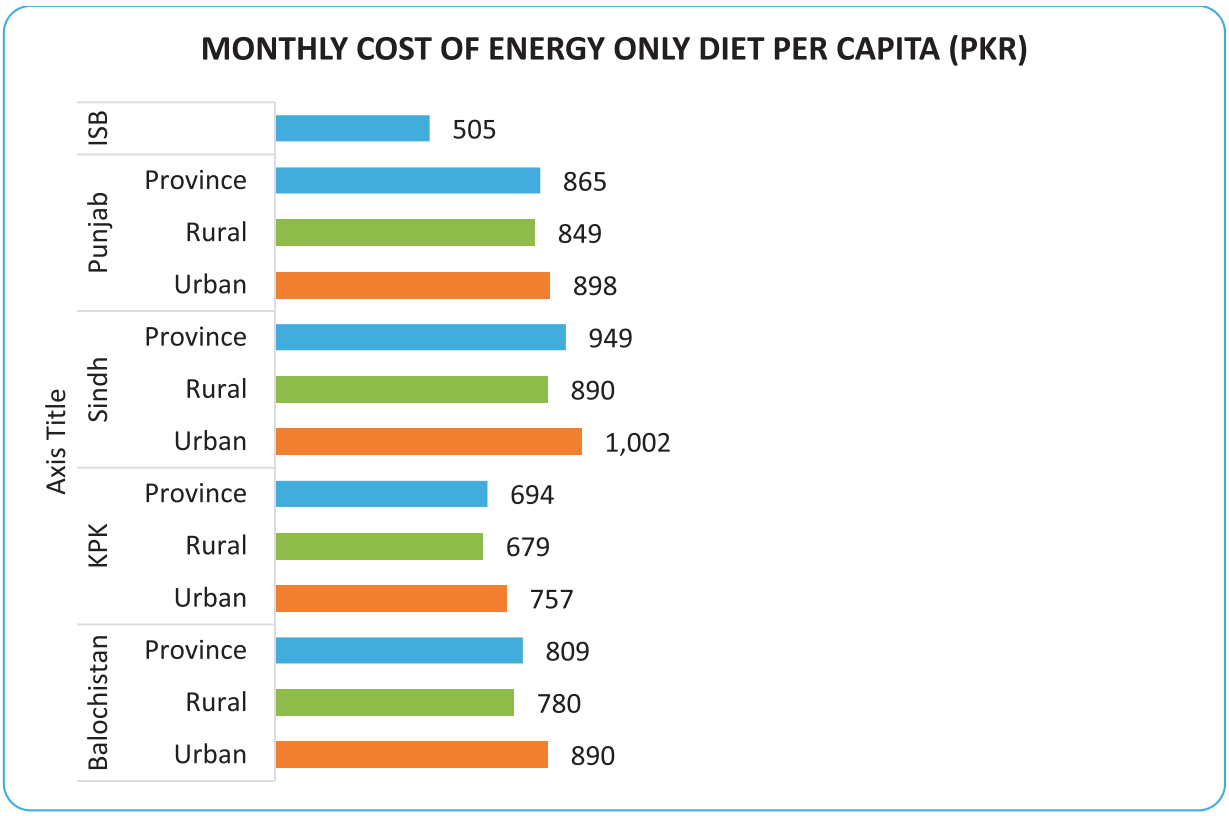
The cost of the staple adjusted nutritious diet varies between PKR 2,061 in Punjab to PKR 2,415 in Balochistan province (*Figure 1*). The cost of the staple adjusted nutritious diet is on average higher in urban areas compared to rural areas but there are relatively small differences between urban and rural for all provinces. The main food groups contributing to the diet (as a percentage of total cost) are dairy, grains, legumes and vegetables. A nutritious diet could be calculated across all provinces and areas for all individuals in the model household, indicating that there is a sufficient diversity of foods at the provincial urban and rural market level to allow for macro- and micronutrient requirements of individuals to be met. The combination of foods selected by the COD software and the percentage of nutrient requirements met are shown in detail in *Appendices 4* to *12*.

Figure 1. *Monthly minimum cost of the staple adjusted nutritious diet per capita across provinces by rural and urban area (PKR).*



The cost of the energy only (calorie sufficient) diet varies from PKR 505 per capita in Islamabad to PKR 949 per capita in Sindh Province (*Figure 2).* The cost of the energy only diet is on average higher in urban areas compared to rural areas at the provincial level, although these differences were relatively small. The main sources of energy identified by the software are maize, wheat and millet; the quantities and combinations of these foods utilized across divisions and provinces varies according to the cheapest sources of energy that the software was able to identify. Overall, these three commodities (maize, wheat and millet) provide the cheapest sources of calories.

Figure 2. *Monthly minimum cost of the energy only diet per capita across provinces by rural and urban area (PKR).*



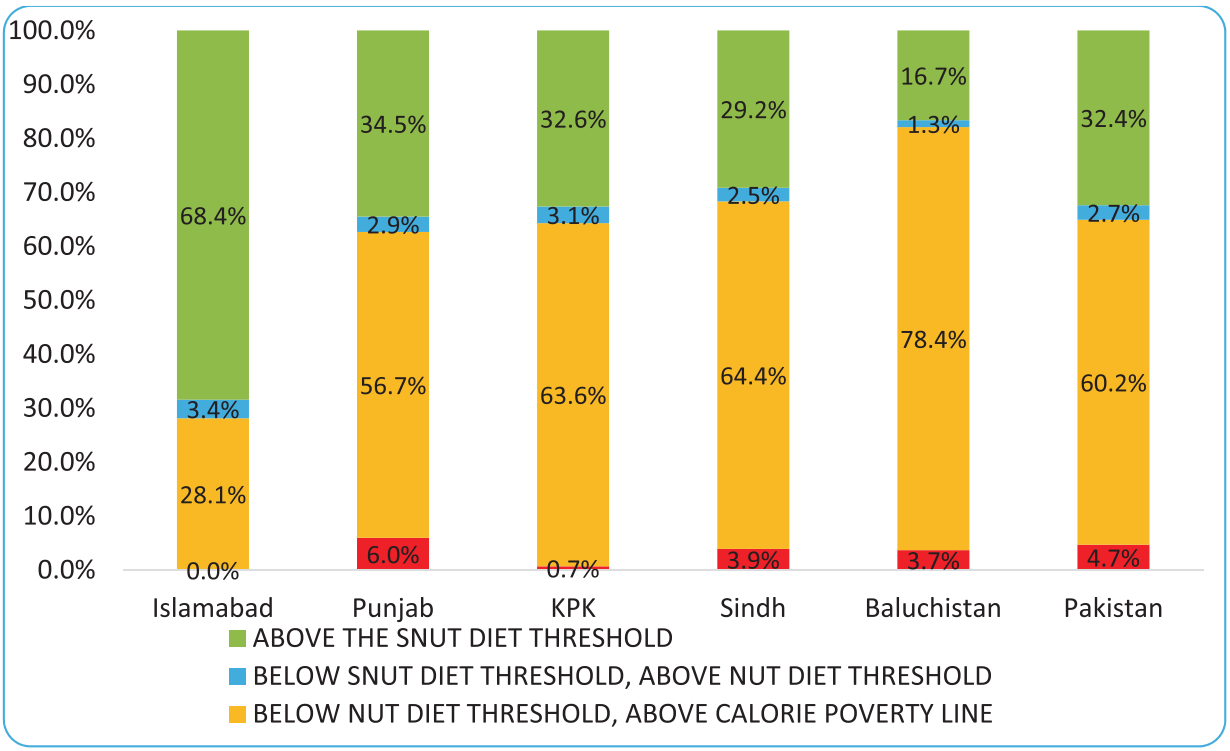
In addition to the provincial level results for urban and rural areas, the cost of the nutritious diet, staple adjusted nutritious diet and energy only diet for all 28 divisions and 4 provinces was calculated, also disaggregated by rural and urban area. The results for the divisions can be found in detail in *Appendix 13*.

3.2. Households below Staple Adjusted Nutritious Diet Threshold and Calorie Poverty Lines

At national level, the proportion of households that falls below the staple adjusted nutritious diet threshold is 67.6%, a total of 4.7% who lie below the calorie poverty line, therefore unable to meet a calorie sufficient diet *(Figure 3).*

The proportion of households that falls below both the staple adjusted nutrient threshold and the calorie poverty line varies across the provinces. The highest proportion of households below the staple adjusted nutrient threshold is currently in Balochistan, where 83.4 % of households' current food expenditure falls short of meeting the required amount needed to meet the minimum nutritious diet. While Balochistan has the highest percentage of households below the staple adjusted nutrient threshold, it has relatively low prevalence of households (3.7%) below the calorie poverty line.

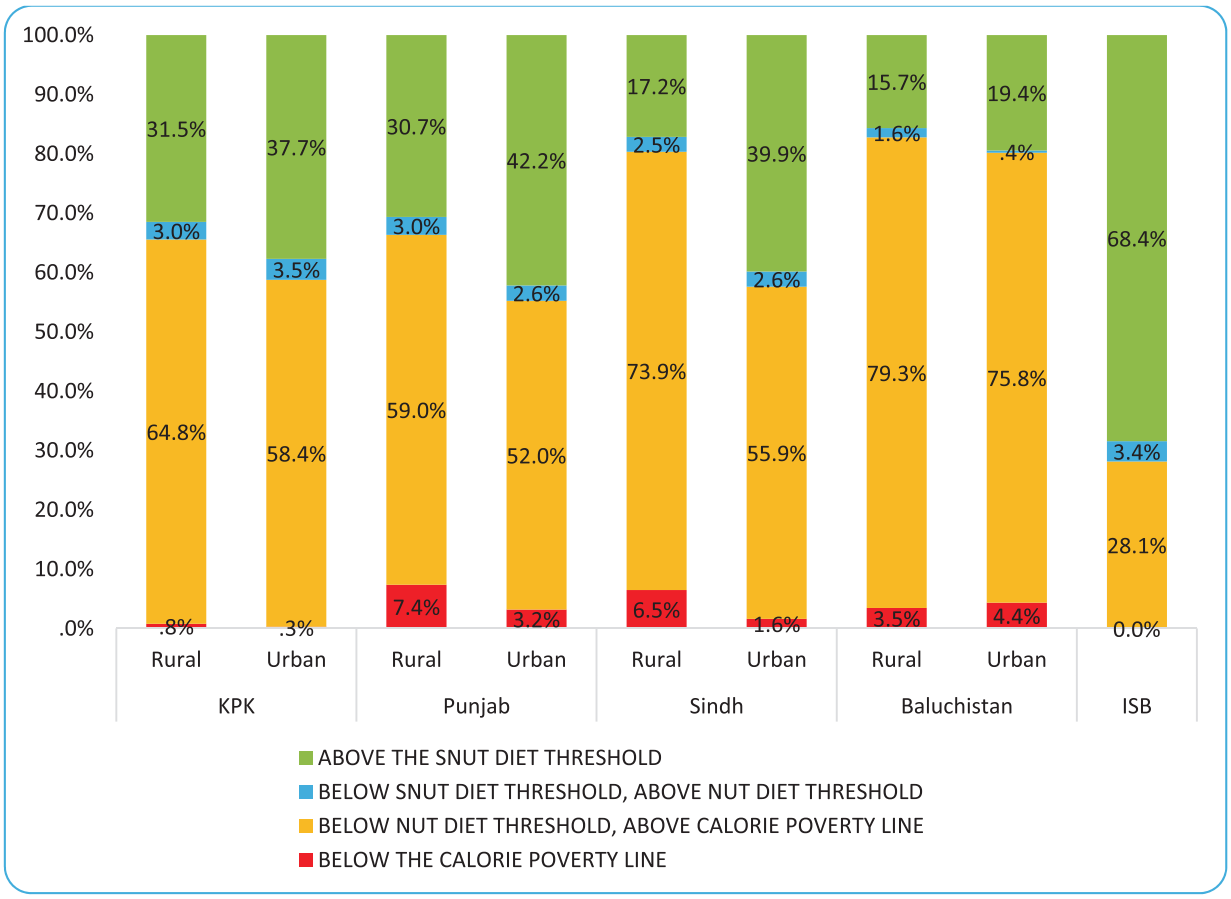
Figure 3. *Non-affordability of a staple adjusted nutritious diet, nutritious diet and energy only diet based on total household food expenditure at the provincial level (Proportion of Households)*



The prevalence of households below the staple adjusted nutrient threshold is over 65% for Punjab (65.6 %), Sindh (70.8 %) and for KPK (67.4 %). Of these provinces, the percentage of households below the calorie poverty line is low with the exception of Punjab where 6% of households fall below the calorie poverty line.

The lowest proportion of households below the staple adjusted nutrient threshold is in Islamabad with 31.5 % of households and no household reported spending below the calorie poverty line. There is a higher proportion of households below the staple adjusted nutrient threshold in rural areas compared to urban areas in all provinces (*Figure 4)*. Affordability analysis by division (rural and urban) and by expenditure quintiles by province and regions was calculated for nutritious diet and mapped *(Figure 5).* Full tables for the affordability analysis by province and regions can be found in *appendix* 14 whereas affordability analysis by division can be found in *Appendices 15*.

Figure 4. *Non-affordability of a staple adjusted nutritious diet, nutritious diet and energy only diet based on total household food expenditure at the provincial level at urban and rural areas (Proportion of Households)*



As the minimum cost of the diet (energy only and nutritious) does not account for dietary habits, the proportion of households that currently do not consume a nutritious diet is most likely higher than reported; the affordability analysis only considers the potential of purchasing adequate foods based on current food expenditure.

Figures 5 and 6 present the maps showing non-affordability of nutritious diet and non-affordability of staple-adjusted nutritious diet by Division, showing the geographic variation of the situation. As can be seen, the spatial pattern remains similar for both cases – showing concentration of highest non-affordability in Balochistan. The staple adjusted non-affordability shows more divisions in the high non-affordability category compared to the one without staple adjustments.

Figure 5. Non-affordability of a nutritious diet in Pakistan by division.

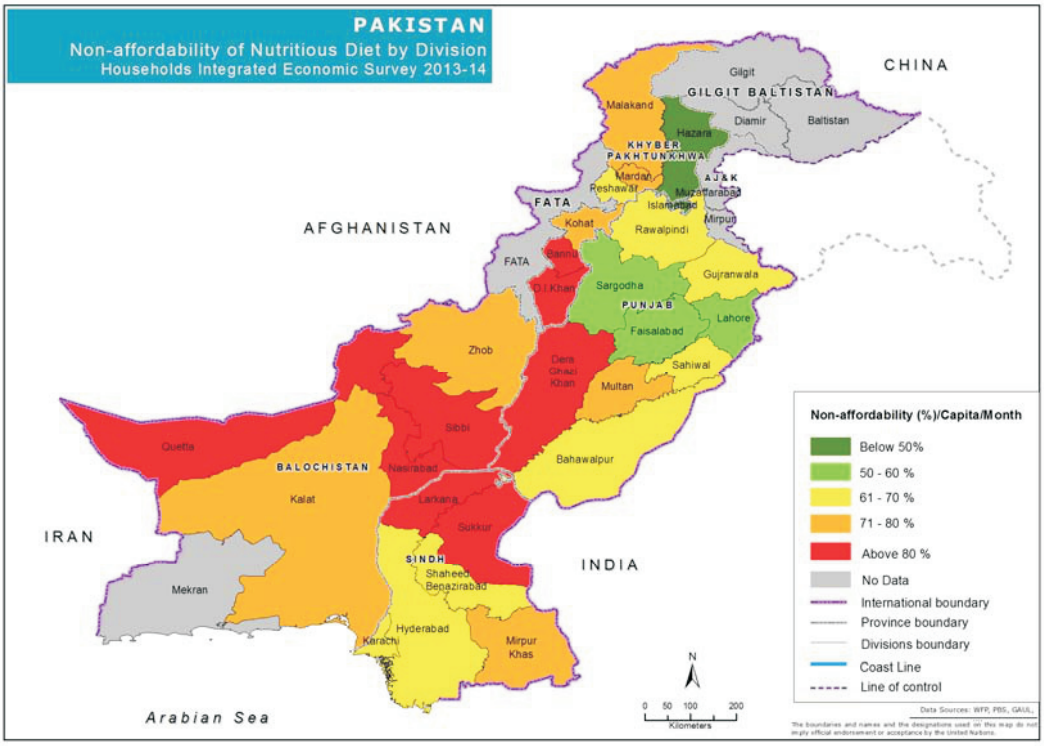
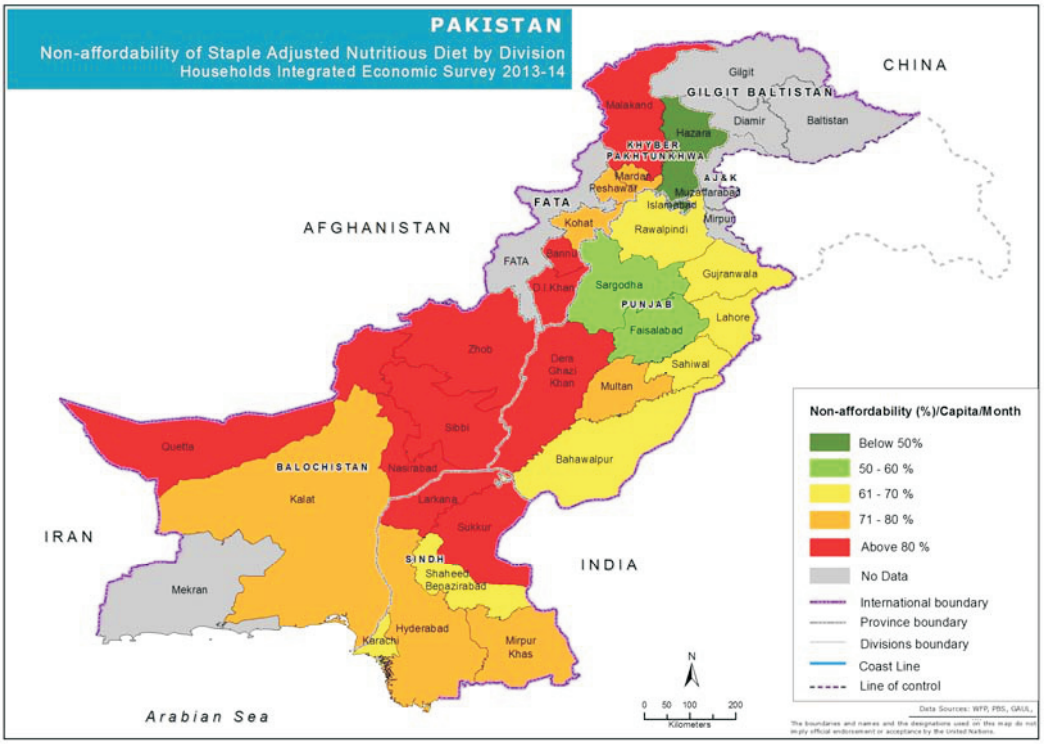


Figure 6. Non-affordability of Staple Adjusted Nutritious Diet in Pakistan by division.



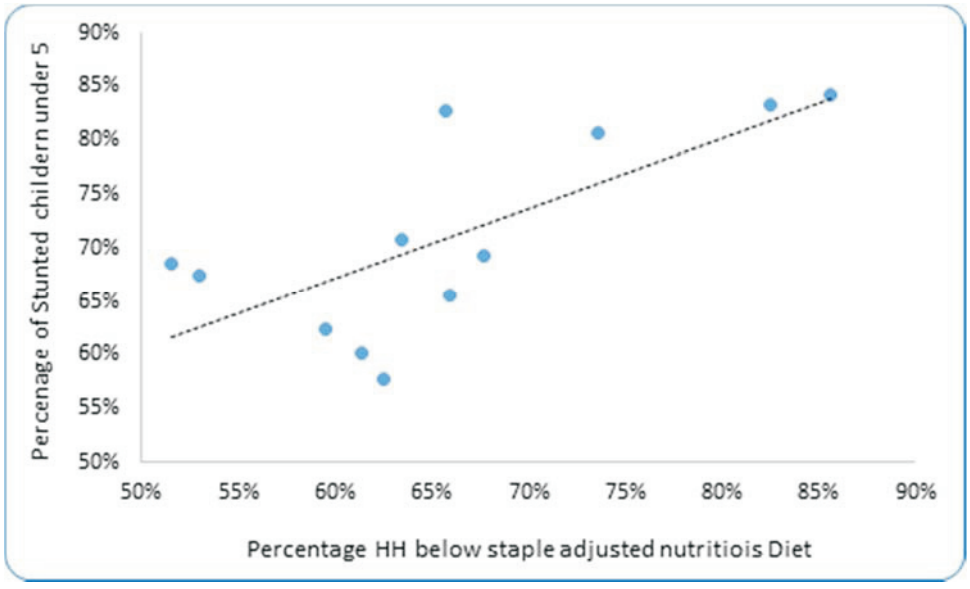
4. DISCUSSION AND CONCLUSION

4.1 Non-affordability of nutritious diet and malnutrition

The analysis indicates that more than two-third of the households (67.6 %) at the national level currently cannot afford a staple-adjusted nutritious diet. While non-affordability of a staple-adjusted nutritious diet is highest in rural areas, the prevalence is over 50% for both urban and rural areas in all Provinces. Even in Islamabad, prevalence of households not able to afford a nutritious diet is as high as 31.5 %.

According to a recent study 'Nutrition in the Cities' carried out by reanalyzing the available validated national datasets (NNS 2011, PDHS 2012-13 and MICS 2012) for the 28 divisions including Islamabad Capital Territory and four Provinces that are included in COD study it is revealed that the proportion of household that cannot afford a staple adjusted nutritious diet is positively correlated with stunting rates in the same areas (*Figure 7*). The relationship corroborates the need to consider economic access as a factor that hinders adequate dietary intake. In turn, this has clear implications on malnutrition and micronutrient deficiencies, currently highly prevalent across Pakistan's population, where 43.7% of children under five are stunted, and over half of all children are deficient in iron, zinc and vitamin A. Micronutrient deficiencies exist in other targeted groups, such as reproductive age women, and indicate that poor dietary diversity occurs at the household level as well as within the household.

Figure 7. Relationship between households who cannot afford a staple adjusted nutritious diet and the prevalence of stunting by province, rural province and urban province.



The lack of diversity in food consumption and high prevalence of micronutrient deficiencies are present across all wealth groups, therefore reinforcing the clear need for nutrition knowledge

and education, as well as efforts to close the affordability gap for households whose food expenditure falls below the nutritious diet threshold. Interventions to address the lack of diversity in food consumption include making nutritious foods more available and affordable with a focus on fortification of staple foods and of specialized infant foods targeted to supplement the nutrition needs of the most vulnerable populations.

4.2 Conclusion and recommendations

The cost of a staple adjusted nutritious diet calculated using the Minimum Cost of the Diet method would be more consistent with the definition of food security "…access to sufficient safe and nutritious food that meets their dietary needs and food preferences …" than a calorie poverty line, as it is currently calculated and used by the Government of Pakistan. Furthermore, the minimum staple adjusted nutritious diet threshold could complement current poverty lines, recently recalculated by the Government, in particular in relation to understanding patterns of malnutrition.

Given the high level of quality of secondary data available in Pakistan, the Cost of the Diet method could be used by the Government to monitor the extent of economic access to a nutritious diet, as it has been done in this analysis. The cost of the resulting staple adjusted nutritious diet could be updated with latest price data without need to remodel the results. Primary data collection (such as market prices, focus groups discussions) could be considered in areas identified more at "risk" of falling below the cost of a nutritious diet. Additionally, more detailed and accurate information on seasonal prices should be collected and used to identify critical points in the year when the availability of nutritious food is reduced.

Staple adjusted nutritious diet thresholds and calorie poverty lines can provide a refined framework for policy decision-making by categorizing vulnerable groups based on current food expenditure patterns against the calculated thresholds. As the analysis currently focuses on the household, it would be advisable to further analyse the individual cost of a staple-adjusted nutritious diet for key target groups, such as, pregnant and lactating women, adolescent girls and children under two years of age. In order to impact nutritional outcomes, it is essential that the nutrient needs for these target groups are adequately met.

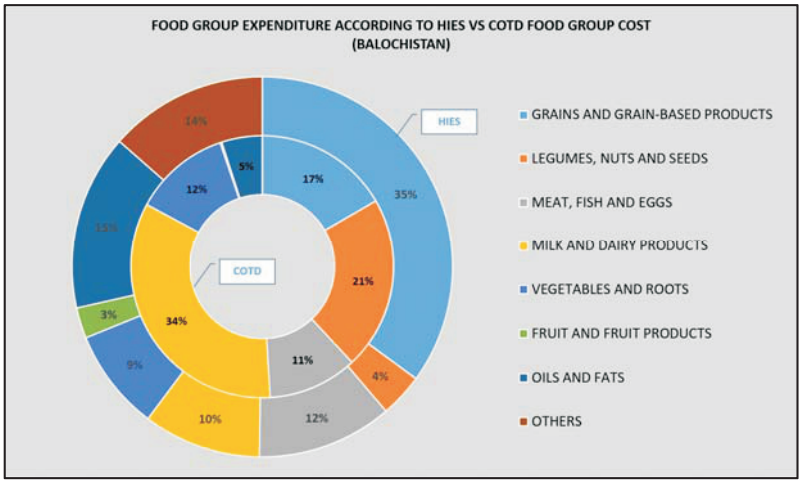
For this reason, a contextual analysis that takes into account the policy environment, local practices and other secondary data related to nutrition and nutrient intake needs is crucial. Such analysis would inform the selection of adequate intervention strategies to improve nutrient intake and identify potential entry points for delivering these interventions (for example, through the market or social protection programs). The *Fill the Nutrient Gap* approach is a framework developed to guide the analytical process. Suggested interventions such as fortified foods, SNFs, cash transfers or subsidized vouchers may be modelled within the Cost of the Diet tool to estimate their effectiveness in reducing the cost of a nutritious diet both at household as well as individual level. Additional recommendations may vary between wealth quintiles with a range of

suggested interventions, from promotion of dietary diversity and awareness of intra-household food sharing practices through behavior change communication to utilization of existing social safety nets to directly improve economic access to foods.

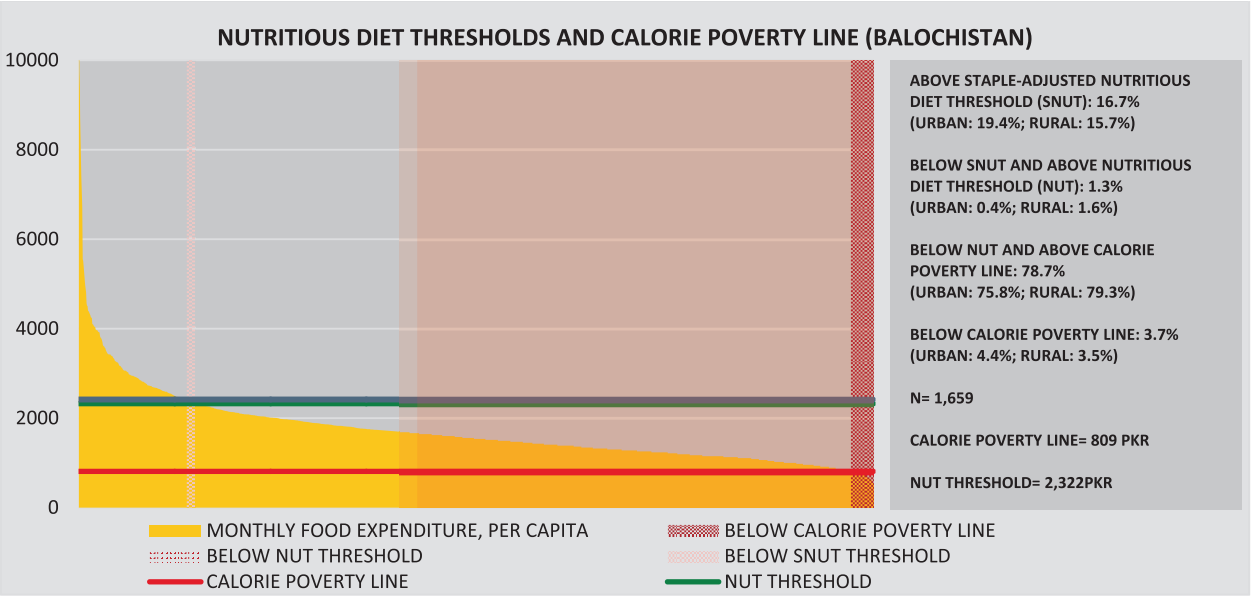
Provincial Overview for the Cost of the Diet Analysis

BALOCHISTAN PROVINCE

Balochistan is the most scarcely populated of all provinces with 5% of the total population. The prevalence of chronic malnutrition (stunting) is highest in this province, with 52% of children stunted and the prevalence of wasting is over the WHO severe threshold at 16.1 %. Micronutrient deficiencies are highly prevalent in children with 73.5 % vitamin A deficient, 39.5 % zinc deficient and 32.5 % iron deficient.

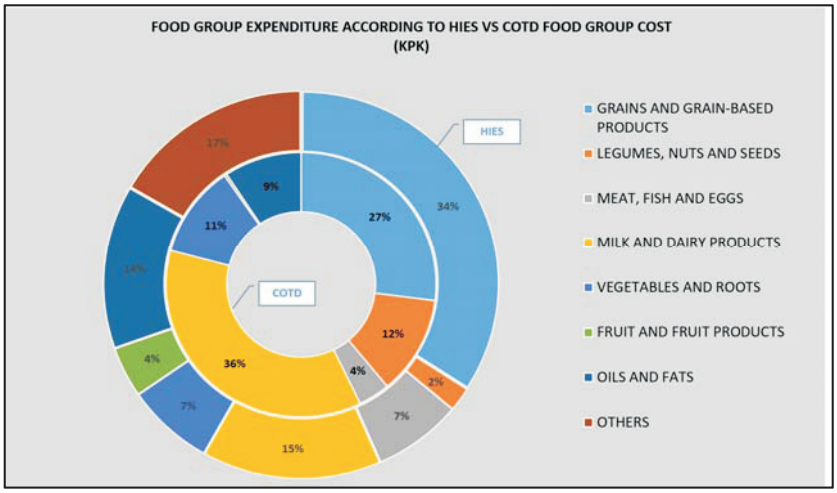


The monthly cost of the staple adjusted nutritious diet calculated is among the highest, at PKR 2,415 per capita. These findings are reflected in the high prevalence of households below the staple adjusted nutritious diet threshold, which is the highest across the country. A total of 83.4 % households spend below the required amount per capita necessary to meet the hypothetical staple adjusted nutritious diet. The food group analysis conducted to compare current food expenditure patterns against the proportion of food groups selected in the COD analysis, revealed that a high proportion of total food expenditure is allocated in Balochistan for "other" foods, which include sugars and confectionary, condiments and beverages (excluding water), which add little to no nutritional value. Actual expenditure as calculated through the HIES is reflected in consumption data with only 6% of women dietary diversity requirements.



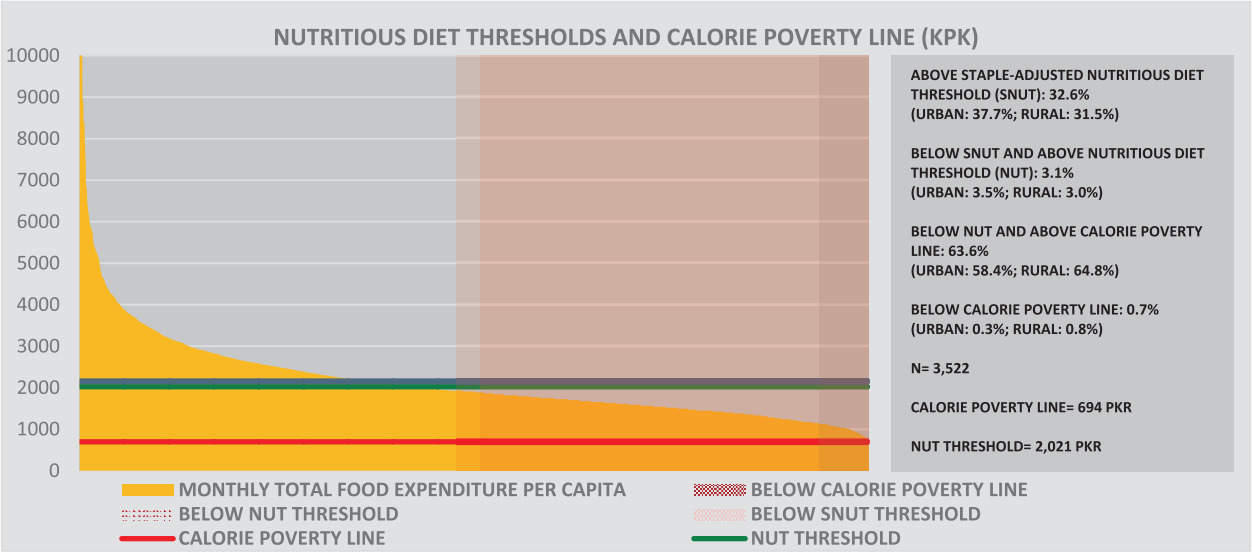
KHYBER PAKHTUNKHWA PROVINCE

Khyber Pakhtunkhwa (KPK) province is located in the northwest region of Pakistan, home to an estimated population of 28,349,038. Just under half of children under five (47.8%) are stunted, second highest only to Balochistan, and 17.3 % of children are wasted. Micronutrient deficiencies are highly prevalent in children with 68.5 % vitamin A deficient, 45.4 % zinc deficient and 26.4 iron deficient. While classified as high prevalence at 47.3 %, the prevalence of anemia is the lowest as compared to other provinces in Pakistan.



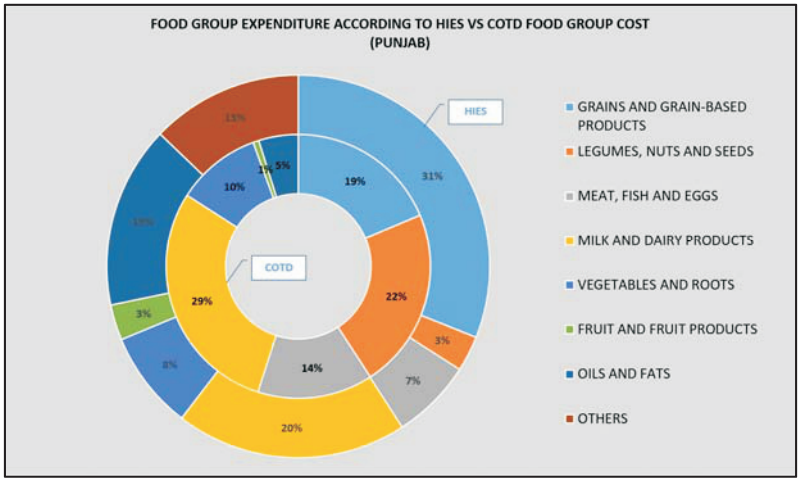
The monthly cost of the staple adjusted nutritious diet calculated is PKR 2,152 per capita. The prevalence of households below the staple adjusted nutritious diet threshold is 67.4 % with only 0.7% of households fall below the calorie poverty line.

The food group analysis shows current expenditure patterns against the proportion of food groups expressed as total cost in the COD analysis, revealing that a high proportion of total food expenditure is being used for “other” foods, which include sugars and confectionary, condiments and beverages (excluding water), which add little to no nutritional value. Staple grains such as wheat, comprise the majority of actual food expenditure while only 25% of that programmed through the COD software. Actual expenditure as calculated through the HIES is reflected in consumption data with only 6% of women meeting their minimum dietary diversity requirements.



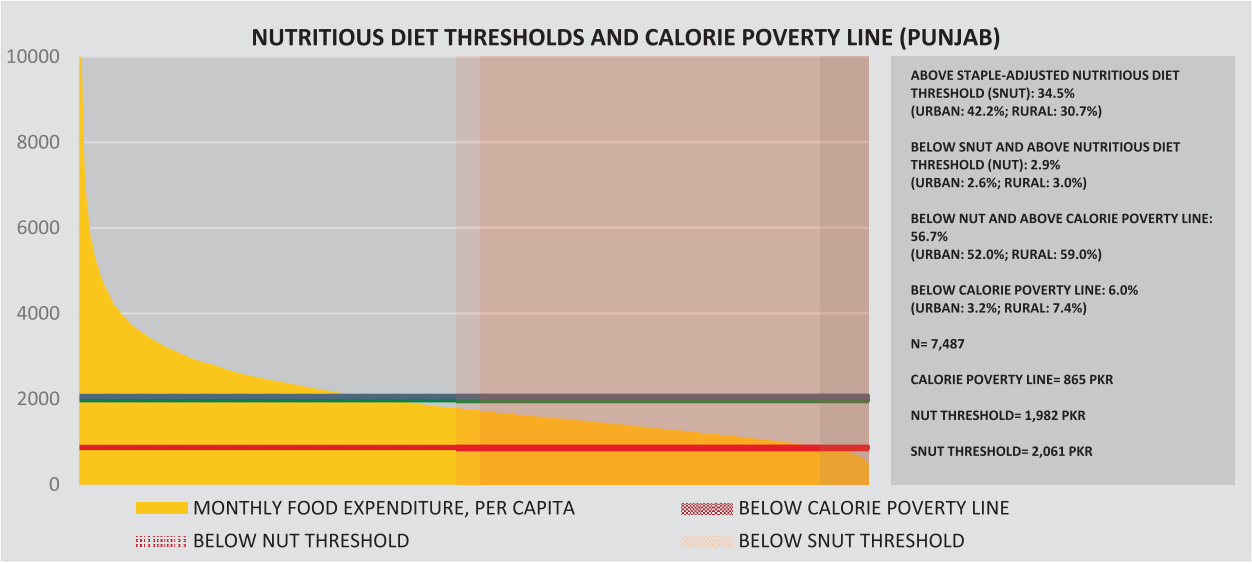
PUNJAB PROVINCE

The province of Punjab is located on the eastern border with India and is the most densely populated of all four provinces with 56% of the total population of Pakistan. The prevalence of chronic malnutrition (stunting) is the lowest in Pakistan at 39.2 % but still classified as high prevalence. Prevalence of wasting is 13.7. Micronutrient deficiencies are highly prevalent in children with 51 % vitamin A deficient, 38.4 % zinc deficient and 48.6 % are iron deficient which is highest as compared to other provinces in Pakistan. Additionally, the prevalence of anemia is at an alarming 60.3 % in Punjab.



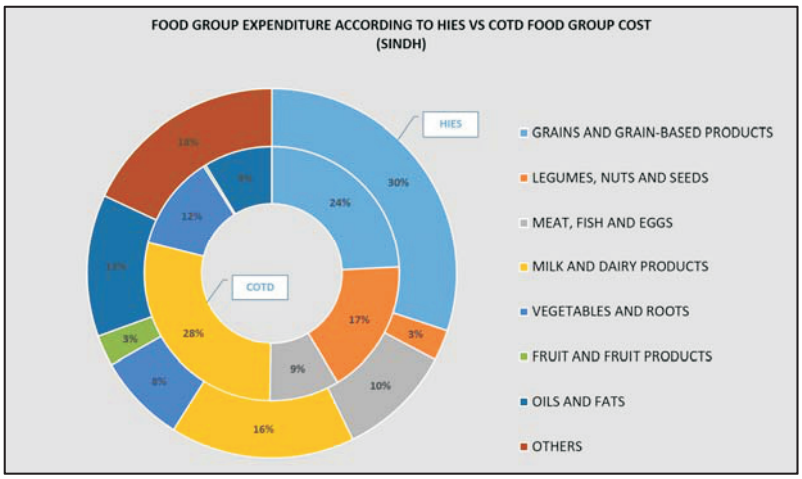
The monthly cost of the staple adjusted nutritious diet is calculated at PKR 2,061 per capita, which is the lowest cost amongst all provinces. The prevalence of households below the staple adjusted nutritious diet threshold is 65.6 % with 6% of all households falling below the calorie poverty line. The percentage of households below the calorie poverty line is the highest proportion across the four provinces.

Similarly to other provinces, the food group analysis reveals a high proportion of total food expenditure is being used for “other” foods, which include sugars and confectionary, condiments and beverages (excluding water), which add little to no nutritional value. A high proportion of total expenditure is also spent on wheat and oils and fats. Actual expenditure as calculated through the HIES is reflected in consumption data with only 4% of children and 5% of women meeting their minimum dietary diversity requirements.



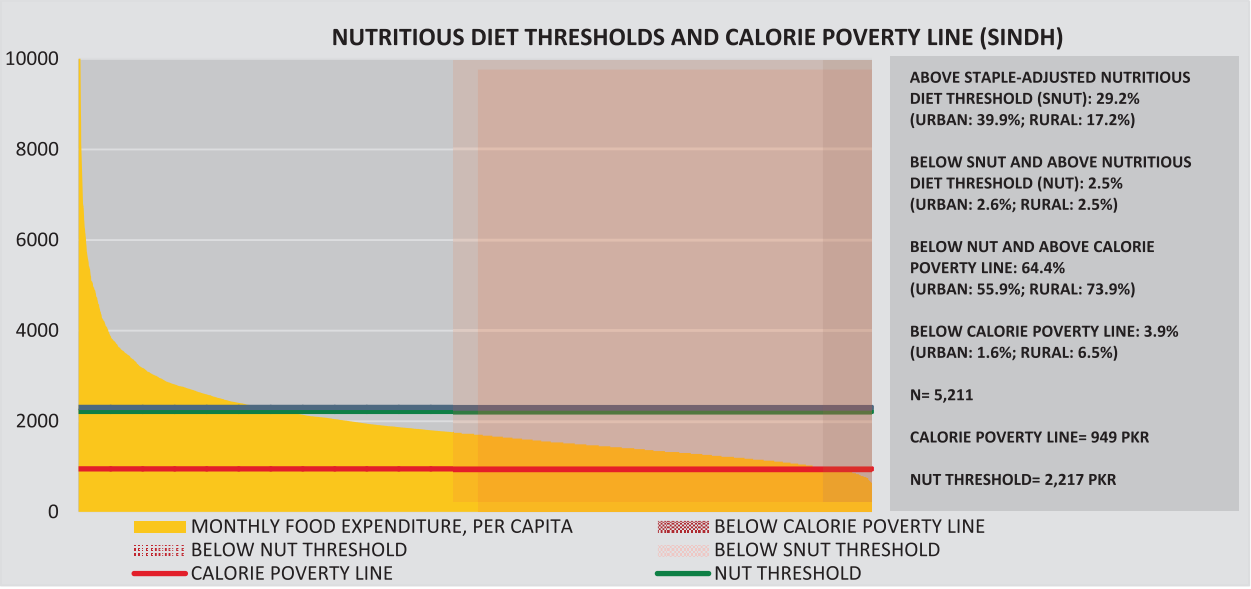
SINDH PROVINCE

The province of Sindh is located in the southeast of Pakistan, home to nearly a quarter (23%) of the total population of Pakistan. In Sindh, just under half of all children under five (49.8%) are chronically malnourished (stunted) and 17.5 % are wasted which is the highest prevalence in Pakistan. Micronutrient deficiencies are highly prevalent in children with 53.3 % vitamin A deficient, 38.6 % zinc deficient and 40.6 % iron deficient however Sindh has the highest level of anemia in children under five years of age at 72.5 % (NNS 2011)



The monthly cost of the staple adjusted nutritious diet calculated is PKR 2,306 per capita. The prevalence of households below the staple adjusted nutritious diet threshold is 70.8 % with 3.9 % of households falling below the calorie poverty line.

The food group analysis reveals similar trends to the other three provinces. The proportion of total food expenditure currently used for "other" foods, which include sugars and confectionary, condiments and beverages (excluding water), is currently high, especially considering that these foods are normally expensive and provide little to no nutrient value. Consumption of wheat and oils and fats is also high. Actual expenditure as calculated through the HIES is reflected in consumption data with only 3% of children and 3% of women meeting their minimum dietary diversity requirements.



APPENDICES

Appendix 1. A list of food items and food groups for which information was collected in the Household Integrated Economic Survey and CPI (*Spinach only*), matched with the foods form the COD database of food composition tables.

Foods	Code	Name of food in software	COD food composition tables
Milk (fresh & boiled)	1101	Milk, cow, full cream	*Egypt*
Lassi (buttermilk)	1102	Buttermilk	*India*
Milk (packed by milk plants)	1103	Milk, cow, whole, COD	*Generic COD*
Milk, Powdered (for adults & children)	1104	Milk, cow, powdered, whole	*Bangladesh*
Butter, Margarine, Cream,	1105	Butter, salted	*Bangladesh*
Cheese	1106	Cheese, white, half cream	*Egypt*
Curd / Yoghurt	1107	Milk, curds	*India*
Beef	1201	Beef	*India*
Mutton	1202	Lamb or mutton, meat, moderate fat, raw	*Bangladesh*
Chicken Meat (fresh, frozen)	1203	Chicken	*Egypt*
Eggs	1204	Egg, chicken, farmed, raw	*Bangladesh*
Other poultry birds (ducks, quail, turkey etc.)	1205	Poultry	*India*
Fish (fresh, frozen, dried)	1206	Fish	*India*
Prawns, Shrimps or Crabs (fresh, frozen, canned)	1207	Crustaceans, raw	*Senegal*
Banana	1301	Banana, ripe	*India*
Citrus fruits (Mosummi, Malta, Kinno etc.)	1302	Orange, COD	*Generic COD*
Apple	1303	Apple	*India*
Dates	1304	Dates	*Bangladesh*
Grapes	1305	Grapes, pale green	*India*
Mango	1306	Mango, ripe	*India*
Melon , Water melon, Garma, Sarda	1307	Melon, average	*Mexico*
		Watermelon, ripe	*Bangladesh*
Guava	1308	Guava, green	*Bangladesh*
Raisin, Dates, Apricot (dried),	1401	Dates, dried	*Bangladesh*
		Apricot, dried	*USDA*
Potato	1501	Potato	*India*
Onion	1502	Onion	*India*
Tomato	1503	Tomato, ripe	*India*
Cabbage, Cauliflower	1504	Cabbage, COD	*Generic COD*
		Cauliflower, raw	*Bangladesh*
Bitter Gourd, Lady finger, Brinjal, Cucumber* all	1505	Gourd, bitter	*India*
		Okra, raw	*India*
		Eggplant	*India*

Foods	Code	Name of food in software	COD food composition tables
		Cucumber, peeled, raw	*Bangladesh*
Tinda, Pumpkin, Bottle Gourd	1506	Gourd, bottle	*India*
		Pumpkin, raw	*Bangladesh*
Radish, Turnip, Carrot	1507	Radish, raw	*Bangladesh*
		Turnip, raw	*Bangladesh*
		Carrot, raw	*Bangladesh*
Peas, Moongra	1508	Peas, raw	*Bangladesh*
Salt (Simple ,rock and sea)	1601	Salt	*Bangladesh*
Salt (Iodised)	1602	Salt, iodized	*Kenya*
Chillies, red	1603	Chilly, red, dry	*Bangladesh*
Ginger	1605	Ginger root, raw	*India*
Garlic	1606	Garlic, raw	*India*
Sugar (Desi or Milled)	1701	Sugar, white	*Bangladesh*
Gur / Shakkar	1702	Jaggery, sugarcane, solid	*Bangladesh*
Honey (fresh or processed)	1703	Honey	*Bangladesh*
Carbonated beverages	1801	Beverage, carbonated	*Bangladesh*
Sugarcane juices, Other fresh juices,	1803	Sugarcane, juice	*India*
Wheat and Wheat flour	2101	Wheat, flour, white	*Bangladesh*
Rice and rice flour	2102	Rice, grain or flour	*India*
Maize, Barley, Jawar and Millet (Whole and Flour)	2103	Maize, grain or flour, local	*India*
		Barley, wholegrain, raw	*Bangladesh*
		Millet, pearl, flour, local	*Bangladesh*
		Sorghum, grain or flour, local	*India*
Suji, Maida, Besan	2104	Semolina, wheat, raw	*Bangladesh*
		Wheat, flour, white, refined	*Bangladesh*
		Chickpea, flour, besan	*USDA*
Gram Whole (Black and White)	2201	Bengal gram, whole, dried, raw	*Bangladesh*
Dal chana	2202	Bengal gram, dehulled, split, dried, raw	*Bangladesh*
Mash	2203	Pigeon pea	*India*
Moong	2204	Green gram, whole, dried, raw	*Bangladesh*
Masoor	2205	Lentil, raw	*USDA*
Desi Ghee	2301	Ghee, cow	*Bangladesh*
Vegetable Ghee	2302	Ghee, vegetable	*Bangladesh*
Cooking Oils,	2303	Oil, COD	*Generic COD*
Tea (black, green loose & packed)	2401	Tea, powder	*Bangladesh*
Coffee	2402	Coffee, powder	*Bangladesh*
Biscuits (Sweet & Saltish)	2501	Biscuit, sweet	*Bangladesh*
		Biscuit, salty	*India*
Tandoori Roti, Nan, Kulcha, Puri, Paratha	2505	Bread, ruti	*Bangladesh*
Tomato Ketchup/paste	2602	Tomato, paste	*USDA*

Appendix 2. Household members chosen from the WHO database of average energy specifications used to create families with an average per capita energy need of 2,350 Kcal.

		Number of household members				
		5	6	7	8	9
Individuals selected in HH composition	**Kcal/day**	**Individuals**	**Individuals**	**Individuals**	**Individuals**	**Individuals**
Child (either sex) 12-23 months	907	X	X	X	X	X
Child (either sex) 6-7 years	1,501		X			X
Child (either sex) 7-8 years	1,623					
Child (either sex) 8-9 years	1,764				X	X
Child (either sex) 9-10 years	1,916			X		
Child (either sex) 10-11 years	2,078	X		X	X	
Child (either sex) 11-12 years	2,245					
Child (either sex) 12-13 years	2,412				X	X
Child (either sex) 13-14 years	2,575			X		
Child (either sex) 14-15 years	2,720		X		X	X
Child (either sex) 16-17 years	2,913					X
Man, 30-59y, 55 kg, vigorously active	2,850	X	X	X	X	X
Woman, 30-59y, 50 kg, vigorously active; Lactation , 7-12 months	2,860	X	X	X	X	X
Woman, 60y, 50 kg, vigorously active	2,100	X	X	X	X	X
Total average energy specification (Kcal/day)		11,783	14,087	16,453	18,840	21,175

Appendix 3. Underlying parameters and limitations of the COD software

i. Recommended intakes for energy and micronutrients

The needs of individuals for energy are taken from a database embedded in the Cost of the Diet software that specifies the estimated average requirement (EAR) recommended by the WHO and FAO (2004) for individuals by age, sex and activity level. As this intake is based on the estimated average requirement, the probability that any given individual's requirement is met is 0.5 or 50%.

The needs of individuals for protein are taken from a database embedded in the software which specifies the safe individual intake recommended by the WHO and FAO (2007) for individuals by age and sex. This intake is defined as the 97.5th percentile of the distribution of individual requirements, so the probability that any given individual's protein requirement is met is 0.975 or 97.5%.

The needs of individuals for vitamins and minerals (collectively called micronutrients) are taken from a database embedded in the software which specifies the recommended nutrient intake (RNI) proposed by the WHO and FAO (2004) for individuals by age and sex. This intake is defined as the 97.5th percentile of the distribution of individual requirements, so the probability that any given individual's requirement is met is 0.975 or 97.5%. The recommended intake of vitamin A is specified as the recommended safe intake, as there are no adequate data to derive mean and standard deviations of intake (WHO/FAO, 2004).

The needs of individuals for fat are specified as 30% of total energy intake (WHO, 2008).

A diet selected by the Cost of Diet software which meets all of the requirements described above is called a 'nutritious' diet.

ii. The limitations of the Cost of the Diet software and method

It is useful to understand the limitations of the cost of the diet method before applying any analysis.

The software can identify a 'diet' that provides the recommended amounts of energy and micronutrients from a relatively small number of foods, but they would need to be eaten every day at every meal, which is unrealistic.

Because the actual requirements for micronutrients of any given individual cannot be known, the RNIs are set at two standard deviations above the average, to minimize the risk of deficiency. This means that when the mixture of foods selected by the Cost of the Diet software meets the RNIs of a family by 100%, the nutritional needs of 97% of all individuals will be exceeded. The result is that greater quantities of food are selected and at a higher cost than is necessary to meet the actual nutritional requirements of most individuals.

The needs for a number of nutrients are not taken into account by the software including iodine, vitamin D, essential amino acids and essential fatty acids. Iodine is not included because the amount in foods depends on the soil on which plants are grown or animals are reared, so no data are provided in food tables. Vitamin D is not included because requirements can be met by making vitamin D in skin exposed to ultra-violet light. And most food tables do not provide data on essential amino acids or fatty acids.

The cost of the diet method calculates amounts of food for a family based on the sum of recommended nutrient intakes, but food may not be distributed within a household based on nutrient needs.

The method does not take into account the additional energy, protein and nutrients needed by someone who is sick or convalescing as there are insufficient data for the calculations.

Appendix 4. The edible weight and cost of the foods selected for a family of 8 for the whole year for a nutritious diet with the percentage contributed by each food in terms of weight, cost, energy, protein and fat, the percentage contribution of each food for eight vitamins and four minerals and the percentage of the total target met for each nutrient, averaged across the seasons in the province of Balochistan rural.

Food List	Quantity (Kg)	% quantity	Cost (PKR)	% cost	energy	protein	% fat	% vit A	% vit C	% vit B1	% vit B2	% niacin	% vit B6	folic acid	vit B12	calcium	% iron	% zinc
Ata, sada, packet (Wheat, flour, white)	399	10.3	17,862	7.8	20.1	15.2	3.7	0.0	0.0	9.7	3.9	16.4	6.1	3.5	0.0	1.7	13.9	14.4
Breast milk	194	5.0	0	0.0	1.8	0.7	4.3	2.7	3.8	0.8	1.2	0.9	0.3	0.7	2.3	1.8	0.0	0.5
(Buttermilk)	453	11.7	29,786	12.9	2.3	5.5	0.5	0.1	2.2	3.4	11.6	4.2	2.8	1.0	21.4	18.2	0.0	4.2
(Carrot, raw)	3	0.1	120	0.1	0.0	0.0	0.0	0.8	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
(Chickpea, flour, besan)	6	0.2	446	0.2	0.3	0.5	0.2	0.0	0.0	0.5	0.1	0.1	0.5	1.1	0.0	0.1	0.3	0.4
Chola, shukna (Bengal gram, whole,	336	8.7	40,525	17.6	17.1	24.5	11.6	0.3	0.0	18.9	16.2	17.0	27.9	27.2	0.0	22.2	27.1	20.9
Cholar dal, vanga (Bengal gram, dehulled, split, dried, raw)	120	3.1	11,345	4.9	6.5	8.7	4.1	0.1	0.0	10.8	5.9	3.0	9.9	7.7	0.0	2.2	9.6	9.3
Dalda/Bonoshpati (Ghee, vegetable)	53	1.4	9,084	3.9	7.0	0.0	30.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1
Dheros (Okra, raw)	103	2.7	6,112	2.7	0.6	0.8	0.1	0.5	8.9	0.8	3.0	1.5	3.4	2.7	0.0	3.1	0.8	0.8
Jaab, gota (Barley, wholegrain, raw)	284	7.4	10,526	4.6	13.4	11.0	3.6	0.1	0.0	25.1	10.4	23.0	14.0	4.2	0.0	2.4	14.2	18.3
Lobon (Salt)	1	0.0	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(Milk, cow, full cream)	765	19.8	55,226	24.0	9.3	8.8	25.8	15.6	3.8	5.7	23.7	6.9	7.1	2.0	38.1	28.7	1.6	7.1
Mistikumra (Pumpkin, raw)	147	3.8	7,635	3.3	0.4	0.7	0.3	14.9	15.3	1.9	1.6	1.2	1.4	1.0	0.0	2.5	0.9	0.4
Murgir dim, farm er (Egg, chicken,	118	3.1	24,176	10.5	2.4	6.1	6.1	5.4	0.0	4.1	8.6	4.2	2.7	2.6	38.1	0.0	8.3	6.5
(Oil, CotD)	6	0.1	957	0.4	0.7	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(Orange, CotD)	< 1	0.0	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Palong shak (Spinach, raw)	526	13.6	11,786	5.1	2.0	5.6	1.5	59.2	54.9	3.0	8.6	7.6	15.9	44.5	0.0	15.4	10.8	11.0
Peyara, bivinno variety, kancha	10	0.3	525	0.2	0.1	0.0	0.0	0.1	10.9	0.4	0.2	0.1	0.2	0.2	0.0	0.1	0.1	0.1
(Salt, iodized)	5	0.1	119	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
(Sorghum, grain or flour, local)	329	8.5	4,086	1.8	15.9	11.9	4.5	0.3	0.0	14.9	4.8	14.0	7.7	1.6	0.0	1.6	12.3	6.1
Total	3,858	100	230,330	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
% target met					100	260	100	210	161	169	170	234	176	213	126	100	117	224

Appendix 5. The edible weight and cost of the foods selected for a family of 8 for the whole year for a nutritious diet with the percentage contributed by each food in terms of weight, cost, energy, protein and fat, the percentage contribution of each food for eight vitamins and four minerals and the percentage of the total target met for each nutrient, averaged across the seasons in the province of Balochistan urban.

Food List	Quantity (Kg)	quantity	Cost (PKR)	% cost	% energy	% protein	% fat	% vit A	% vit C	% vit B1	% vit B2	% niacin	% vit B6	folic acid	vit B12	calcium	% iron	% zinc
Ata, sada, packet (Wheat, flour, white)	399	10.0	18,023	8.6	20.1	15.4	3.7	0.0	0.0	8.6	3.8	15.2	6.0	3.5	0.0	1.7	14.4	13.0
Breast milk	194	4.8	0	0.0	1.8	0.7	4.3	2.7	3.8	0.7	1.2	0.8	0.3	0.7	2.2	1.8	0.0	0.5
(Buttermilk)	974	24.3	29,231	13.9	5.0	12.1	1.1	0.3	4.8	6.5	23.7	8.4	5.9	2.1	43.0	39.1	0.0	8.2
(Chickpea, flour, besan)	29	0.7	2,447	1.2	1.7	2.4	1.1	0.0	0.0	2.4	0.5	0.5	2.2	5.6	0.0	0.4	1.4	1.7
Chola, shukna (Bengal gram, whole,	236	5.9	29,196	13.9	12.0	17.5	8.2	0.2	0.0	11.8	10.9	11.1	19.1	19.3	0.0	15.6	19.8	13.3
Cholar dal, vanga (Bengal gram, dehulled, split, dried, raw)	120	3.0	10,964	5.2	6.5	8.8	4.1	0.1	0.0	9.6	5.6	2.8	9.7	7.8	0.0	2.2	10.0	8.5
Dalda/Bonoshpati (Ghee, vegetable)	76	1.9	12,802	6.1	10.0	0.0	43.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
Dheros (Okra, raw)	59	1.5	3,671	1.7	0.3	0.5	0.1	0.3	5.0	0.4	1.6	0.8	1.9	1.5	0.0	1.8	0.5	0.4
Gajor (Carrot, raw)	32	0.8	1,519	0.7	0.2	0.1	0.0	2.9	0.2	0.2	0.5	0.3	0.6	0.2	0.0	0.3	0.1	0.0
Jaab, gota (Barley, wholegrain, raw)	484	12.1	18,053	8.6	22.8	19.1	6.2	0.1	0.0	38.0	16.8	36.3	23.3	7.2	0.0	4.1	25.0	28.3
Lobon (Salt)	1	0.0	13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(Maize, grain or flour, local)	135	3.4	4,739	2.3	7.1	4.0	2.8	0.9	0.0	8.8	4.7	5.9	6.1	1.5	0.0	0.3	4.5	5.1
(Milk, cow, full cream)	372	9.3	27,838	13.2	4.5	4.3	12.5	7.7	1.8	2.5	11.0	3.1	3.4	1.0	17.3	13.9	0.8	3.1
Mistikumra (Pumpkin, raw)	180	4.5	10,550	5.0	0.5	0.9	0.3	18.5	18.6	2.1	1.9	1.4	1.7	1.3	0.0	3.0	1.2	0.4
Murgir dim, farm er (Egg, chicken,	124	3.1	25,090	11.9	2.5	6.6	6.4	5.7	0.0	3.8	8.7	4.1	2.8	2.7	37.4	0.0	9.1	6.2
(Oil, CotD)	6	0.1	948	0.5	0.7	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Palong shak (Spinach, raw)	529	13.2	12,409	5.9	2.0	5.7	1.5	60.4	55.1	2.6	8.3	7.1	15.6	45.1	0.0	15.5	11.3	10.0
Peyara, bivinno variety, kancha	9	0.2	470	0.2	0.1	0.0	0.0	0.1	10.6	0.3	0.1	0.1	0.2	0.2	0.0	0.1	0.1	0.1
(Poultry)	4	0.1	654	0.3	0.1	0.3	0.1	0.0	0.0	0.0	0.1	0.3	0.2	0.0	0.1	0.0	0.2	0.2
(Salt, iodized)	1	0.0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(Sorghum, grain or flour, local)	43	1.1	1,631	0.8	2.1	1.6	0.6	0.0	0.0	1.7	0.6	1.7	1.0	0.2	0.0	0.2	1.7	0.7
Total	4,007	100	210,276	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
% target met					100	256	100	207	161	190	178	252	180	211	135	100	112	247

Appendix 6. The edible weight and cost of the foods selected for a family of 7 for the whole year for a nutritious diet with the percentage contributed by each food in terms of weight, cost, energy, protein and fat, the percentage contribution of each food for eight vitamins and four minerals and the percentage of the total target met for each nutrient, averaged across the seasons in the province of Khyber Pakhtunkhwa rural.

Food List	Quantity (Kg)	% quantity	Cost (PKR)	% cost	energy	protein	% fat	% vit A	% vit C	% vit B1	% vit B2	% niacin	% vit B6	% folic acid	% vit B12	% calcium	% iron	% zinc
Ata, sada, packet (Wheat, flour, white)	344	9.8	14,340	9.4	19.9	16.8	3.8	0.0	0.0	8.4	4.0	14.9	6.7	4.5	0.0	1.7	16.9	13.7
Breast milk	194	5.5	0	0.0	2.1	0.9	5.0	4.0	5.2	0.8	1.5	0.9	0.4	1.1	3.1	2.1	0.0	0.6
(Buttermilk)	1341	38.2	53,674	35.0	7.8	21.0	1.8	0.5	8.9	10.1	40.8	13.1	10.6	4.3	84.5	63.6	0.0	13.8
(Carrot, raw)	3	0.1	102	0.1	0.0	0.0	0.0	1.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
(Chickpea, flour, besan)	29	0.8	2,060	1.3	1.9	3.0	1.3	0.0	0.0	2.6	0.7	0.6	2.8	8.2	0.0	0.5	1.8	2.1
Chola, shukna (Bengal gram, whole, dried, raw)	106	3.0	11,813	7.7	6.2	10.0	4.3	0.1	0.0	6.0	6.1	5.7	11.2	12.8	0.0	8.3	12.1	7.3
Cholar dal, vanga (Bengal gram, dehulled, split, dried, raw)	64	1.8	5,263	3.4	4.0	6.0	2.6	0.1	0.0	5.8	3.8	1.7	6.7	6.1	0.0	1.4	7.3	5.5
Dalda/Bonoshpati (Ghee, vegetable)	99	2.8	16,053	10.5	14.8	0.0	65.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.2	0.1
Gajor (Carrot, raw)	26	0.8	858	0.6	0.2	0.1	0.0	3.6	0.3	0.2	0.5	0.3	0.7	0.3	0.0	0.3	0.1	0.1
Jaab, gota (Barley, wholegrain, raw)	535	15.3	19,417	12.7	28.9	26.8	7.9	0.2	0.0	47.3	23.2	45.4	33.5	11.8	0.0	5.4	37.7	38.2
(Maize, grain or flour, local)	158	4.5	5,757	3.8	9.6	5.9	3.8	1.5	0.0	11.6	6.9	7.8	9.4	2.6	0.0	0.4	7.2	7.3
Mistikumra (Pumpkin, raw)	179	5.1	7,790	5.1	0.5	1.2	0.4	26.9	25.0	2.4	2.3	1.6	2.2	1.9	0.0	3.6	1.6	0.5
Murgir dim, farm er (Egg, chicken,	28	0.8	5,872	3.8	0.7	1.9	1.7	1.9	0.0	1.0	2.5	1.0	0.8	0.9	12.2	0.0	2.8	1.7
Palong shak (Spinach, raw)	359	10.2	8,622	5.6	1.6	4.9	1.2	59.8	50.4	2.0	7.0	5.5	13.8	45.1	0.0	12.4	10.4	8.3
Peyara, bivinno variety, kancha	7	0.2	475	0.3	0.1	0.0	0.0	0.1	10.2	0.3	0.1	0.1	0.1	0.2	0.0	0.0	0.1	0.1
(Sorghum, grain or flour, local)	33	0.9	1,197	0.8	1.8	1.5	0.5	0.0	0.0	1.5	0.6	1.5	1.0	0.2	0.0	0.2	1.7	0.7
Total	3,506	100	153,292	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
% target met					100	234	100	162	135	194	164	260	158	166	109	100	109	238

Appendix 7. The edible weight and cost of the foods selected for a family of 7 for the whole year for a nutritious diet with the percentage contributed by each food in terms of weight, cost, energy, protein and fat, the percentage contribution of each food for eight vitamins and four minerals and the percentage of the total target met for each nutrient, averaged across the seasons in the province of Khyber Pakhtunkhwa urban

Food List	Quantity (Kg)	% quantity	Cost (PKR)	% cost	energy	protein	% fat	% vit A	% vit C	% vit B1	% vit B2	% niacin	% vit B6	folic acid	vit B12	calcium	% iron	% zinc
Ata, sada, packet (Wheat, flour, white)	606	18.3	25,473	14.4	35.1	29.0	6.6	0.0	0.0	18.3	7.4	28.0	11.8	7.1	0.0	3.0	27.9	25.3
Breast milk	194	5.9	0	0.0	2.1	0.9	5.0	3.9	4.9	1.0	1.5	1.0	0.4	1.0	3.4	2.1	0.0	0.6
(Buttermilk)	471	14.2	23,758	13.4	2.7	7.2	0.6	0.2	3.0	4.4	14.8	4.9	3.7	1.4	32.5	22.4	0.0	5.1
(Carrot, raw)	2	0.1	66	0.0	0.0	0.0	0.0	0.8	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
(Chickpea, flour, besan)	8	0.2	576	0.3	0.5	0.8	0.4	0.0	0.0	0.9	0.2	0.2	0.8	2.0	0.0	0.1	0.5	0.6
Chini, sada (Sugar, white)	8	0.2	461	0.3	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chola, shukna (Bengal gram, whole, dried, raw)	237	7.2	24,411	13.8	13.8	21.8	9.5	0.3	0.0	16.7	14.2	13.5	25.0	25.9	0.0	18.6	25.4	17.1
Cholar dal, vanga (Bengal gram, dehulled, split, dried, raw)	33	1.0	2,662	1.5	2.1	3.0	1.3	0.0	0.0	3.7	2.0	0.9	3.5	2.8	0.0	0.7	3.5	3.0
Dalda/Bonoshpati (Ghee, vegetable)	62	1.9	9,885	5.6	9.3	0.0	41.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
Dheros (Okra, raw)	159	4.8	7,404	4.2	1.0	1.5	0.2	1.2	17.6	1.5	5.7	2.6	6.7	5.6	0.0	5.7	1.7	1.4
Jaab, gota (Barley, wholegrain, raw)	363	11.0	13,385	7.6	19.6	17.8	5.4	0.2	0.0	40.0	16.4	33.0	22.8	7.2	0.0	3.6	24.0	27.2
(Maize, grain or flour, local)	18	0.5	937	0.5	1.1	0.7	0.4	0.2	0.0	1.6	0.8	1.0	1.1	0.3	0.0	0.0	0.8	0.9
(Milk, cow, full cream)	659	19.9	48,006	27.1	9.2	9.5	25.9	19.6	4.2	6.2	25.2	6.6	7.8	2.3	47.9	29.3	1.9	7.1
Mistikumra (Pumpkin, raw)	69	2.1	2,628	1.5	0.2	0.4	0.1	10.1	9.2	1.1	0.9	0.6	0.8	0.6	0.0	1.4	0.6	0.2
Murgir dim, farm er (Egg, chicken,	34	1.0	6,935	3.9	0.8	2.2	2.1	2.3	0.0	1.5	3.1	1.4	1.0	1.0	16.1	0.0	3.2	2.2
Palong shak (Spinach, raw)	373	11.3	9,698	5.5	1.6	5.0	1.2	61.2	50.2	2.6	7.6	6.1	14.3	42.5	0.0	12.9	10.2	9.0
Peyara, bivinno variety, kancha	7	0.2	473	0.3	0.1	0.0	0.0	0.1	10.8	0.4	0.2	0.1	0.2	0.2	0.0	0.1	0.1	0.1
(Sorghum, grain or flour, local)	3	0.1	106	0.1	0.2	0.1	0.0	0.0	0.0	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1
Total	3,308	100	176,861	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
% target met					100	239	100	165	141	156	158	243	158	183	100	100	116	228

Appendix 8. The edible weight and cost of the foods selected for a family of 6 for the whole year for a nutritious diet with the percentage contributed by each food in terms of weight, cost, energy, protein and fat, the percentage contribution of each food for eight vitamins and four minerals and the percentage of the total target met for each nutrient, averaged across the seasons in the province of Punjab rural.

Food List	Quantity (Kg)	% quantity	Cost (PKR)	% cost	energy	protein	% fat	% vit A	% vit C	% vit B1	% vit B2	% niacin	% vit B6	% folic acid	% vit B12	% calcium	% iron	% zinc
Ata, sada, packet (Wheat, flour, white)	630	22.7	23,753	16.0	42.5	32.4	8.0	0.0	0.0	24.4	9.0	38.5	14.5	7.9	0.0	3.9	30.7	30.4
Breast milk	194	7.0	0	0.0	2.5	1.0	5.9	4.3	5.7	1.2	1.8	1.3	0.4	1.0	3.0	2.6	0.0	0.7
(Buttermilk)	320	11.6	12,819	8.6	2.2	5.3	0.5	0.1	2.3	3.9	11.8	4.4	3.0	1.0	19.3	18.9	0.0	4.0
(Carrot, raw)	< 1	0.0	24	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(Chickpea, flour, besan)	2	0.1	114	0.1	0.1	0.2	0.1	0.0	0.0	0.2	0.0	0.0	0.2	0.4	0.0	0.0	0.1	0.1
Chini, sada (Sugar, white)	2	0.1	124	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chola, shukna (Bengal gram, whole,	218	7.9	22,700	15.3	14.9	21.5	10.2	0.3	0.0	19.7	15.2	16.5	27.1	25.6	0.0	21.3	24.7	18.2
Cholar dal, vanga (Bengal gram, dehulled, split, dried, raw)	119	4.3	9,072	6.1	8.7	11.7	5.6	0.2	0.0	17.2	8.5	4.4	14.9	11.1	0.0	3.2	13.5	12.5
Dalda/Bonoshpati (Ghee, vegetable)	45	1.6	7,565	5.1	7.8	0.0	34.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1
Dheros (Okra, raw)	73	2.6	3,616	2.4	0.6	0.7	0.1	0.6	9.3	0.9	3.1	1.6	3.6	2.8	0.0	3.2	0.8	0.8
Gajor (Carrot, raw)	27	1.0	725	0.5	0.2	0.1	0.1	3.9	0.3	0.4	0.6	0.5	0.8	0.3	0.0	0.3	0.1	0.1
Jaab, gota (Barley, wholegrain, raw)	89	3.2	3,628	2.4	5.6	4.7	1.5	0.0	0.0	12.6	4.7	10.7	6.6	1.9	0.0	1.1	6.2	7.7
(Maize, grain or flour, local)	8	0.3	338	0.2	0.6	0.3	0.2	0.1	0.0	1.0	0.4	0.6	0.6	0.1	0.0	0.0	0.4	0.5
(Milk, cow, full cream)	524	18.9	29,326	19.7	8.6	8.1	24.0	17.2	3.8	6.3	23.5	7.0	7.3	2.0	33.2	28.9	1.6	6.5
Mistikumra (Pumpkin, raw)	31	1.1	1,312	0.9	0.1	0.2	0.1	5.0	4.7	0.6	0.5	0.4	0.4	0.3	0.0	0.8	0.3	0.1
Mungkalai (Green gram, whole, dried,	10	0.4	1,358	0.9	0.6	1.2	0.1	0.0	0.0	1.5	1.1	1.1	1.2	0.9	0.0	0.7	1.1	0.9
Murgir dim, farm er (Egg, chicken,	109	3.9	21,611	14.5	2.9	7.6	7.6	8.0	0.0	6.0	11.5	5.7	3.8	3.4	44.5	0.0	10.7	8.0
(Orange, CotD)	27	1.0	658	0.4	0.2	0.1	0.0	0.0	9.9	0.7	0.3	0.2	0.4	0.5	0.0	0.5	0.0	0.1
Palong shak (Spinach, raw)	330	11.9	9,374	6.3	1.7	4.7	1.2	59.8	51.1	3.0	7.8	7.1	15.0	40.4	0.0	14.2	9.5	9.2
Peyara, bivinno variety, kancha	8	0.3	374	0.3	0.1	0.0	0.0	0.1	12.8	0.5	0.2	0.1	0.2	0.2	0.0	0.1	0.1	0.1
(Salt, iodized)	2	0.1	44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	2,769	100	148,534	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
% target met					100	255	102	177	144	151	166	231	165	212	143	100	109	244

Appendix 9. The edible weight and cost of the foods selected for a family of 6 for the whole year for a nutritious diet with the percentage contributed by each food in terms of weight, cost, energy, protein and fat, the percentage contribution of each food for eight vitamins and four minerals and the percentage of the total target met for each nutrient, averaged across the seasons in the province of Punjab urban.

Food List	Quantity (Kg)	quantity	Cost (PKR)	% cost	energy	protein	% fat	% vit A	% vit C	% vit B1	% vit B2	% niacin	% vit B6	% folic acid	% vit B12	% calcium	% iron	% zinc
Ata, sada, packet (Wheat, flour, white)	558	20.3	22,378	14.3	37.7	29.0	7.2	0.0	0.0	21.0	7.6	35.0	11.9	6.7	0.0	3.4	26.7	27.0
Breast milk	194	7.1	0	0.0	2.5	1.0	5.9	4.0	5.4	1.2	1.7	1.3	0.4	1.0	3.1	2.6	0.0	0.7
(Buttermilk)	11	0.4	719	0.5	0.1	0.2	0.0	0.0	0.1	0.1	0.4	0.2	0.1	0.0	0.7	0.7	0.0	0.1
Chini, sada (Sugar, white)	10	0.4	560	0.4	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Chola, shukna (Bengal gram, whole,	240	8.7	24,573	15.7	16.3	23.9	11.3	0.3	0.0	20.9	16.1	18.6	27.7	26.9	0.0	23.4	26.7	20.1
Cholar dal, vanga (Bengal gram, dehulled, split, dried, raw)	147	5.3	10,689	6.8	10.7	14.5	6.9	0.2	0.0	20.5	10.0	5.6	16.9	13.0	0.0	3.9	16.3	15.3
Dalda/Bonoshpati (Ghee, vegetable)	27	1.0	4,724	3.0	4.8	0.0	21.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Dheros (Okra, raw)	121	4.4	6,557	4.2	0.9	1.3	0.2	0.9	14.6	1.4	4.9	2.7	5.6	4.4	0.0	5.4	1.4	1.3
Gajor (Carrot, raw)	58	2.1	1,882	1.2	0.4	0.3	0.1	7.7	0.6	0.7	1.2	1.0	1.7	0.5	0.0	0.7	0.3	0.1
Gur, Akh (Jaggery, sugarcane, solid)	12	0.4	918	0.6	0.9	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.5	0.2	0.0
Jaab, gota (Barley, wholegrain, raw)	67	2.4	2,850	1.8	4.2	3.5	1.2	0.0	0.0	9.1	3.4	8.2	4.6	1.4	0.0	0.8	4.6	5.8
(Maize, grain or flour, local)	47	1.7	2,003	1.3	3.3	1.9	1.3	0.4	0.0	5.3	2.4	3.4	3.0	0.7	0.0	0.1	2.1	2.6
(Milk, cow, full cream)	784	28.5	49,352	31.5	12.8	12.3	36.1	23.6	5.4	9.1	33.8	10.8	10.2	2.8	52.4	43.3	2.3	9.8
Mistikumra (Pumpkin, raw)	5	0.2	246	0.2	0.0	0.0	0.0	0.7	0.7	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0
Mula (Radish, raw)	9	0.3	242	0.2	0.0	0.0	0.0	0.0	1.1	1.1	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.1
Murgir dim, farm er (Egg, chicken,	101	3.7	19,137	12.2	2.7	7.2	7.1	6.8	0.0	5.4	10.3	5.4	3.3	3.1	43.7	0.0	9.8	7.5
(Orange, CotD)	16	0.6	464	0.3	0.1	0.1	0.0	0.0	5.6	0.4	0.2	0.1	0.2	0.3	0.0	0.3	0.0	0.1
Palong shak (Spinach, raw)	331	12.0	8,817	5.6	1.7	4.8	1.3	55.1	48.3	2.9	7.5	7.3	13.9	38.7	0.0	14.3	9.4	9.3
Peyara, bivinno variety, kancha	12	0.4	613	0.4	0.1	0.1	0.0	0.2	18.5	0.7	0.3	0.2	0.3	0.3	0.0	0.1	0.1	0.1
(Salt, iodized)	2	0.1	54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	2,750	100	156,777	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
% target met					100	252	101	192	153	156	173	225	177	222	136	100	111	244

Appendix 10. The edible weight and cost of the foods selected for a family of 6 for the whole year for a nutritious diet with the percentage contributed by each food in terms of weight, cost, energy, protein and fat, the percentage contribution of each food for eight vitamins and four minerals and the percentage of the total target met for each nutrient, averaged across the seasons in the province of Sindh rural.

Food List	Quantity (Kg)	% quantity	Cost (PKR)	% cost	energy	protein	% fat	% vit A	% vit C	% vit B1	% vit B2	% niacin	% vit B6	folic acid	vit B12	calcium	% iron	% zinc
Ata, sada, packet (Wheat, flour, white)	503	13.2	21,350	13.7	29.1	25.3	5.5	0.0	0.0	13.9	6.1	23.4	10.0	6.5	0.0	2.5	26.0	21.1
Breast milk	194	5.1	0	0.0	2.1	1.0	5.0	4.0	5.0	0.9	1.5	1.0	0.4	1.1	3.2	2.1	0.0	0.6
(Buttermilk)	1270	33.4	46,762	30.1	7.4	20.5	1.7	0.5	8.1	10.9	40.0	13.4	10.2	4.1	82.9	60.3	0.0	13.8
(Carrot, raw)	3	0.1	90	0.1	0.0	0.0	0.0	0.9	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
(Chickpea, flour, besan)	12	0.3	962	0.6	0.8	1.3	0.5	0.0	0.0	1.3	0.3	0.2	1.2	3.4	0.0	0.2	0.8	0.9
Chola, shukna (Bengal gram, whole,	140	3.7	13,966	9.0	8.2	13.5	5.6	0.2	0.0	9.0	8.3	8.0	15.1	16.8	0.0	11.0	16.8	10.1
Cholar dal, vanga (Bengal gram, dehulled, split, dried, raw)	39	1.0	3,509	2.3	2.5	3.8	1.6	0.1	0.0	4.0	2.4	1.1	4.2	3.7	0.0	0.8	4.7	3.5
Dalda/Bonoshpati (Ghee, vegetable)	99	2.6	15,815	10.2	14.8	0.0	65.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.3	0.1
Gajor (Carrot, raw)	123	3.2	4,547	2.9	0.7	0.5	0.2	16.5	1.1	1.2	2.3	1.6	3.3	1.2	0.0	1.2	0.6	0.2
(Gourd, bottle)	413	10.9	4,895	3.1	1.4	1.8	0.8	2.5	15.9	3.6	3.7	3.1	5.8	5.4	0.0	4.3	2.3	4.5
Jaab, gota (Barley, wholegrain, raw)	299	7.9	13,309	8.6	16.2	15.4	4.4	0.1	0.0	30.2	13.4	27.4	19.2	6.6	0.0	3.0	22.2	22.4
(Maize, grain or flour, local)	239	6.3	10,585	6.8	14.4	9.2	5.7	2.3	0.0	20.0	10.7	12.7	14.4	3.9	0.0	0.6	11.4	11.6
Mistikumra (Pumpkin, raw)	69	1.8	3,518	2.3	0.2	0.5	0.1	10.4	9.3	1.0	0.9	0.6	0.8	0.7	0.0	1.4	0.7	0.2
Murgir dim, farm er (Egg, chicken,	31	0.8	6,221	4.0	0.7	2.1	1.8	2.1	0.0	1.2	2.8	1.2	0.9	1.0	13.7	0.0	3.2	2.0
Palong shak (Spinach, raw)	361	9.5	9,672	6.2	1.6	5.1	1.2	60.4	48.9	2.3	7.3	5.9	14.2	45.4	0.0	12.5	11.0	8.8
Peyara, bivinno variety, kancha	8	0.2	383	0.2	0.1	0.0	0.0	0.1	11.6	0.4	0.2	0.1	0.2	0.3	0.0	0.1	0.1	0.1
Total	3,802	100	155,583	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
% target met					100	227	100	161	140	170	158	241	155	166	106	100	103	227

Appendix 11. The edible weight and cost of the foods selected for a family of 6 for the whole year for a nutritious diet with the percentage contributed by each food in terms of weight, cost, energy, protein and fat, the percentage contribution of each food for eight vitamins and four minerals and the percentage of the total target met for each nutrient, averaged across the seasons in the province of Sindh urban.

Food List	Quantity (Kg)	% quantity	Cost (PKR)	% cost	energy	protein	% fat	% vit A	% vit C	% vit B1	% vit B2	% niacin	% vit B6	folic acid	vit B12	calcium	% iron	% zinc
Ata, sada, packet (Wheat, flour, white)	658	23.8	29,070	17.7	44.4	33.2	8.5	0.0	0.0	26.8	10.0	43.6	16.2	8.9	0.0	4.0	33.1	32.8
(Banana, ripe)	1	0.1	43	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Breast milk	194	7.0	0	0.0	2.5	1.0	6.0	5.1	6.6	1.3	1.9	1.4	0.4	1.1	2.9	2.6	0.0	0.8
(Buttermilk)	886	32.0	43,786	26.7	6.0	14.3	1.4	0.5	7.6	11.2	34.8	13.3	8.8	3.0	51.0	52.4	0.0	11.4
(Carrot, raw)	3	0.1	146	0.1	0.0	0.0	0.0	1.4	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0
(Chickpea, flour, besan)	11	0.4	849	0.5	0.8	1.1	0.6	0.0	0.0	1.6	0.3	0.3	1.3	3.2	0.0	0.2	0.7	1.0
Chini, sada (Sugar, white)	15	0.5	837	0.5	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Chola, shukna (Bengal gram, whole,	229	8.3	24,608	15.0	15.6	22.1	10.9	0.4	0.0	21.7	17.0	18.7	30.3	28.6	0.0	22.3	26.7	19.7
Cholar dal, vanga (Bengal gram, dehulled, split, dried, raw)	153	5.5	13,024	7.9	11.2	14.7	7.3	0.3	0.0	23.2	11.6	6.1	20.3	15.2	0.0	4.1	17.8	16.5
Dalda/Bonoshpati (Ghee, vegetable)	65	2.4	10,756	6.5	11.4	0.0	51.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1
Gajor (Carrot, raw)	105	3.8	4,846	3.0	0.7	0.5	0.2	18.3	1.3	1.5	2.5	2.0	3.5	1.1	0.0	1.3	0.5	0.2
Mistikumra (Pumpkin, raw)	44	1.6	2,721	1.7	0.2	0.3	0.1	8.6	7.9	1.0	0.7	0.6	0.7	0.5	0.0	1.1	0.4	0.2
Mungkalai (Green gram, whole, dried,	10	0.3	1,239	0.8	0.6	1.1	0.1	0.0	0.0	1.4	1.0	1.0	1.2	0.9	0.0	0.6	1.0	0.8
Murgir dim, farm er (Egg, chicken,	118	4.3	22,673	13.8	3.2	8.1	8.4	10.3	0.0	6.8	13.2	6.7	4.4	4.0	46.1	0.0	12.0	8.9
(Oil, CotD)	5	0.2	859	0.5	0.9	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Palong shak (Spinach, raw)	253	9.1	7,901	4.8	1.3	3.6	1.0	54.8	45.8	2.4	6.4	5.9	12.2	33.0	0.0	10.9	7.5	7.3
Peyara, bivinno variety, kancha	16	0.6	818	0.5	0.2	0.1	0.1	0.3	30.5	1.0	0.4	0.3	0.4	0.5	0.0	0.1	0.1	0.2
(Salt, iodized)	2	0.1	43	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	2,766	100	164,222	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
% target met					100	260	100	148	123	143	156	213	154	198	150	100	106	237

Appendix 12. The edible weight and cost of the foods selected for a family of 6 for the whole year for a nutritious diet with the percentage contributed by each food in terms of weight, cost, energy, protein and fat, the percentage contribution of each food for eight vitamins and four minerals and the percentage of the total target met for each nutrient, averaged across the seasons in Islamabad.

Food List	Quantity (Kg)	quantity	Cost (PKR)	% cost	energy	protein	% fat	% vit A	% vit C	% vit B1	% vit B2	% niacin	% vit B6	folic acid	vit B12	calcium	% iron	% zinc
Ata, sada, packet (Wheat, flour, white)	675	23.7	29,345	16.8	45.6	34.8	8.7	0.0	0.0	28.1	9.7	42.9	14.1	6.9	0.0	4.2	31.3	33.0
Breast milk	194	6.8	0	0.0	2.5	1.0	5.9	3.1	3.9	1.3	1.8	1.3	0.4	0.8	3.6	2.6	0.0	0.7
(Carrot, raw)	1	0.0	36	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(Chickpea, flour, besan)	2	0.1	160	0.1	0.2	0.2	0.1	0.0	0.0	0.3	0.1	0.1	0.2	0.5	0.0	0.0	0.1	0.2
Chini, sada (Sugar, white)	19	0.7	1,070	0.6	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Chola, shukna (Bengal gram, whole, dried, raw)	223	7.8	28,505	16.4	15.2	22.1	10.6	0.2	0.0	21.6	15.7	17.5	25.2	21.3	0.0	21.8	24.1	18.9
Cholar dal, vanga (Bengal gram, dehulled, split, dried, raw)	144	5.0	10,881	6.2	10.5	14.1	6.8	0.2	0.0	22.2	10.3	5.5	16.2	10.9	0.0	3.9	15.4	15.1
Dalda/Bonoshpati (Ghee, vegetable)	34	1.2	5,922	3.4	6.0	0.0	26.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0
Dheros (Okra, raw)	260	9.1	13,680	7.8	2.0	2.7	0.3	1.6	22.7	3.3	11.0	5.8	11.7	8.0	0.0	11.6	2.8	2.8
(Milk, cow, full cream)	582	20.4	45,333	26.0	9.5	9.1	26.9	13.9	2.9	7.5	26.3	8.1	7.4	1.8	44.8	32.2	1.7	7.3
Mistikumra (Pumpkin, raw)	128	4.5	5,359	3.1	0.4	0.9	0.3	15.3	13.5	2.9	2.0	1.6	1.6	1.1	0.0	3.2	1.1	0.4
Mungkalai (Green gram, whole, dried,	10	0.4	1,325	0.8	0.6	1.2	0.1	0.0	0.0	1.6	1.1	1.1	1.1	0.8	0.0	0.7	1.0	0.9
Murgir dim, farm er (Egg, chicken,	103	3.6	19,545	11.2	2.8	7.3	7.3	5.5	0.0	6.1	11.0	5.6	3.2	2.6	51.5	0.0	9.7	7.7
(Oil, CotD)	6	0.2	1,012	0.6	1.0	0.0	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Palong shak (Spinach, raw)	455	16.0	11,604	6.7	2.3	6.6	1.7	59.9	48.2	4.4	10.9	10.2	18.7	45.2	0.0	19.6	12.5	12.8
Peyara, bivinno variety, kancha	8	0.3	423	0.2	0.1	0.0	0.0	0.1	8.8	0.5	0.2	0.1	0.2	0.2	0.0	0.1	0.1	0.1
(Salt, iodized)	3	0.1	66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Total	2,847	100	174,266	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
% target met					100	254	101	243	211	140	165	222	182	261	118	100	115	242

Appendix 13. Annual and monthly minimum cost of the energy only, nutritious and staple adjusted nutritious diets by division, disaggregated by urban and rural area. Minimum cost of the diet was calculated for a households based on the average household size and per capita (PKR).

			Energy only diet		*Nutritious diet*		*Staple-adjusted Nutritious diet*		
Division	*Region*	*Average household size*	*Average monthly cost per capita*	*Annual Cost per capita*	*Average monthly cost per capita*	*Annual Cost per capita*	*Average monthly cost per capita*	*Annual Cost per capita*	Limiting Micro-nutrients (RNI met by 100%)
Kalat	Division	6	929	11,143	2,072	24,864	2,155	25,858	Calcium
	Rural	6	890	10,684	1,991	23,895	2,071	24,851	Calcium
	Urban	6	1,055	12,656	2,338	28,053	2,431	29,175	Calcium
Nasirabad	Division	8	802	9,627	2,368	28,421	2,463	29,558	Calcium
	Rural	8	757	9,084	2,292	27,509	2,384	28,610	Calcium
	Urban	8	983	11,796	2,672	32,061	2,779	33,343	Calcium
Quetta	Division	9	781	9,367	2,388	28,660	2,484	29,806	Calcium
	Rural	9	767	9,202	2,328	27,937	2,421	29,054	Calcium
	Urban	9	803	9,631	2,485	29,818	2,584	31,011	Calcium
Sibi	Division	8	710	8,519	2,507	30,085	2,607	31,288	Calcium, Vitamin B12
	Rural	8	668	8,021	2,484	29,809	2,583	31,002	Calcium
	Urban	8	967	11,606	2,649	31,789	2,755	33,061	Calcium
Zhob	Division	9	753	9,032	2,402	28,826	2,498	29,979	Calcium
	Rural	9	740	8,884	2,450	29,399	2,548	30,575	Calcium
	Urban	9	815	9,774	2,163	25,954	2,249	26,993	Calcium
Islamabad	Division	6	505	6,062	2,198	26,375	2,286	27,430	Calcium, Vitamin B12
Bannu	Division	9	501	6,006	2,554	30,651	2,656	31,877	-
	Rural	9	479	5,750	2,561	30,733	2,663	31,962	-
	Urban	8	727	8,726	2,482	29,788	2,582	30,979	-
D.I. Khan	Division	9	815	9,782	2,116	25,392	2,201	26,408	Calcium
	Rural	9	814	9,771	2,107	25,285	2,191	26,297	Calcium
	Urban	7	821	9,851	2,177	26,120	2,264	27,164	Calcium

Hazara	Division	6	776	9,314	1,842	22,109	1,916	22,994	Calcium
	Rural	6	776	9,317	1,833	21,990	1,906	22,870	Calcium
	Urban	6	774	9,288	1,927	23,123	2,004	24,048	Calcium
Kohat	Division	8	589	7,064	2,083	24,998	2,174	26,088	Calcium, Vitamin B12
	Rural	8	526	6,312	2,078	24,931	2,161	25,928	Calcium
	Urban	7	815	9,781	2,103	25,240	2,222	26,666	Calcium, Vitamin B12
Malakand	Division	7	616	7,390	1,979	23,743	2,144	25,733	Calcium
	Rural	7	610	7,325	1,971	23,653	2,137	25,639	Calcium
	Urban	7	684	8,205	2,073	24,881	2,243	26,917	Calcium, Vitamin B12
Mardan	Division	7	694	8,330	2,022	24,264	2,190	26,275	Calcium, Vitamin B12
	Rural	7	662	7,941	2,007	24,082	2,174	26,085	Calcium, Vitamin B12
	Urban	7	812	9,739	2,077	24,923	2,247	26,960	Calcium, Vitamin B12
Peshawar	Division	7	736	8,835	2,069	24,824	2,238	26,857	Calcium, Vitamin B12
	Rural	7	737	8,842	2,062	24,747	2,231	26,776	Calcium, Vitamin B12
	Urban	7	735	8,825	2,077	24,927	2,247	26,964	Calcium, Vitamin B12
Bhawalpur	Division	6	789	9,466	1,804	21,644	1,876	22,510	Calcium
	Rural	6	796	9,547	1,814	21,763	1,886	22,634	Calcium
	Urban	6	768	9,213	1,773	21,272	1,844	22,123	Calcium
D.G.Khan	Division	7	829	9,953	1,902	22,826	1,978	23,739	Calcium
	Rural	7	813	9,757	1,884	22,604	1,959	23,509	Calcium, Vitamin B12
	Urban	7	896	10,755	1,978	23,732	2,057	24,681	Calcium
Faisalabad	Division	6	829	9,951	1,879	22,552	1,954	23,454	Calcium
	Rural	6	827	9,929	1,842	22,102	1,916	22,986	Calcium
	Urban	6	832	9,987	1,941	23,295	2,019	24,227	Calcium
Gujranwala	Division	6	912	10,949	2,148	25,780	2,234	26,811	Calcium
	Rural	6	900	10,796	2,126	25,517	2,211	26,537	Calcium
	Urban	6	938	11,252	2,192	26,303	2,280	27,355	Calcium
Lahore	Division	6	858	10,295	2,052	24,624	2,134	25,609	Calcium
	Rural	6	766	9,194	2,022	24,268	2,103	25,239	Calcium
	Urban	6	934	11,208	2,077	24,920	2,160	25,917	Calcium

Multan	Division	6	872	10,463	1,903	22,839	1,979	23,753	Calcium
	Rural	6	863	10,358	1,873	22,477	1,948	23,376	Calcium, Vitamin B12
	Urban	6	896	10,752	1,986	23,835	2,066	24,788	Calcium
Rawalpindi	Division	6	989	11,872	2,198	26,373	2,286	27,428	Calcium
	Rural	6	990	11,877	2,161	25,929	2,247	26,966	Calcium, Vitamin B12
	Urban	6	989	11,863	2,261	27,136	2,352	28,222	Calcium, Vitamin B12
Sahiwal	Division	6	837	10,038	1,916	22,987	1,992	23,907	Calcium
	Rural	6	838	10,055	1,910	22,915	1,986	23,832	Calcium
	Urban	6	831	9,977	1,937	23,247	2,015	24,177	Calcium
Sargodha	Division	6	871	10,449	1,933	23,192	2,010	24,120	Calcium
	Rural	6	872	10,470	1,906	22,872	1,982	23,786	Calcium
	Urban	6	864	10,367	2,036	24,432	2,117	25,409	Calcium
Hyderabad	Division	6	887	10,639	1,993	23,921	2,073	24,878	Calcium
	Rural	6	844	10,126	1,916	22,988	1,992	23,907	Calcium
	Urban	6	982	11,785	2,167	26,006	2,254	27,046	Calcium
Karachi	Division	5	1,013	12,159	2,386	28,628	2,481	29,773	Calcium
	Rural	6	984	11,807	2,236	26,827	2,325	27,901	Calcium
	Urban	5	1,016	12,192	2,399	28,793	2,495	29,945	Calcium
Larkana	Division	7	941	11,292	2,184	26,212	2,272	27,261	Calcium, Vitamin B12
	Rural	7	926	11,111	2,116	25,394	2,201	26,410	Calcium
	Urban	8	976	11,708	2,341	28,093	2,435	29,217	Calcium
Mir Pur Khas	Division	6	858	10,290	2,067	24,807	2,150	25,799	Calcium
	Rural	6	841	10,097	2,054	24,649	2,136	25,635	Calcium
	Urban	6	933	11,200	2,129	25,550	2,214	26,572	Calcium
Shaheed Benazir Abad	Division	6	906	10,874	1,987	23,843	2,066	24,797	Calcium
	Rural	6	902	10,822	1,974	23,684	2,053	24,631	Calcium
	Urban	5	931	11,171	2,063	24,752	2,145	25,742	Calcium
Sukkur	Division	8	952	11,421	2,310	27,719	2,402	28,827	Calcium, Vitamin B12
	Rural	8	948	11,373	2,292	27,499	2,383	28,599	Calcium
	Urban	7	961	11,535	2,353	28,235	2,447	29,364	Calcium, Vitamin B12

Appendix 14. Affordability analysis by province and region. The table below is a summary of the percentage of the population that falls below the thresholds.

Province	Total expenditure quintiles	Affordability analysis-Population groups			
		Above the SNUT diet threshold	**Below SNUT diet threshold, above nut diet threshold**	**Below nut diet threshold, above calorie poverty line**	**Below the calorie poverty line**
KPK	*Poorest Quintile*	26.5%	3.4%	68.1%	2.0%
	Second Quintile	25.1%	1.9%	72.4%	.5%
	Third Quintile	29.4%	3.2%	67.4%	0.0%
	Fourth Quintile	34.7%	3.6%	61.1%	.6%
	Richest Quintile	47.5%	3.3%	48.9%	.4%
Punjab	*Poorest Quintile*	18.9%	2.0%	62.4%	16.8%
	Second Quintile	22.1%	2.4%	67.8%	7.7%
	Third Quintile	27.4%	3.2%	65.8%	3.7%
	Fourth Quintile	41.0%	4.0%	54.0%	1.0%
	Richest Quintile	63.2%	2.7%	33.3%	.8%
Sindh	*Poorest Quintile*	19.5%	1.6%	68.5%	10.4%
	Second Quintile	17.6%	1.6%	75.1%	5.7%
	Third Quintile	21.0%	2.6%	73.9%	2.5%
	Fourth Quintile	28.3%	3.0%	67.7%	1.0%
	Richest Quintile	59.3%	4.0%	36.8%	0.0%
Baluchistan	*Poorest Quintile*	12.4%	1.8%	77.8%	8.0%
	Second Quintile	10.4%	.3%	86.8%	2.5%
	Third Quintile	14.5%	.5%	80.9%	4.1%
	Fourth Quintile	12.9%	1.7%	83.2%	2.2%
	Richest Quintile	33.0%	2.0%	63.4%	1.7%
Islamabad	*Poorest Quintile*	66.4%	0.0%	33.6%	0.0%
	Second Quintile	69.0%	0.0%	31.0%	0.0%
	Third Quintile	39.3%	7.9%	52.8%	0.0%
	Fourth Quintile	66.7%	9.4%	23.9%	0.0%
	Richest Quintile	100.0%	0.0%	0.0%	0.0%
Region					
Rural	*Poorest Quintile*	18.5%	2.0%	64.3%	15.3%
	Second Quintile	18.0%	2.2%	71.6%	8.2%
	Third Quintile	21.9%	2.7%	71.7%	3.7%
	Fourth Quintile	31.1%	3.8%	63.3%	1.7%
	Richest Quintile	48.8%	3.3%	47.1%	.8%
Urban	*Poorest Quintile*	24.1%	2.0%	66.6%	7.2%
	Second Quintile	27.0%	1.9%	68.2%	2.9%
	Third Quintile	30.9%	2.7%	65.2%	1.2%
	Fourth Quintile	47.2%	3.8%	48.4%	.6%
	Richest Quintile	73.5%	2.7%	23.6%	.2%

Appendix 15. Affordability analysis by divisions. The table below is a summary of the percentage of the population that falls below the thresholds.

		Affordability analysis-Population groups			
Division	Region	**Above the SNUT diet threshold**	**Below SNUT diet threshold, above nut diet threshold**	**Below nut diet threshold, above calorie poverty line**	**Below the calorie poverty line**
Kalat	Division	22.0%	1.2%	69.6%	7.2%
	Rural	20.4%	1.5%	69.5%	8.6%
	Urban	27.4%	0.0%	70.1%	2.5%
Nasirabad	Division	11.9%	2.2%	85.7%	.3%
	Rural	11.7%	2.3%	85.9%	0.0%
	Urban	12.4%	1.5%	84.6%	1.5%
Quetta	Division	14.3%	.4%	80.4%	4.8%
	Rural	10.2%	.7%	85.4%	3.8%
	Urban	21.0%	0.0%	72.5%	6.5%
Sibi	Division	14.8%	2.0%	82.2%	1.0%
	Rural	15.4%	1.7%	82.9%	0.0%
	Urban	11.3%	4.1%	77.5%	7.1%
Zhob	Division	19.7%	1.8%	77.3%	1.3%
	Rural	22.0%	2.1%	74.3%	1.5%
	Urban	7.9%	0.0%	92.1%	0.0%
Islamabad	Division	68.4%	3.4%	28.1%	0.0%
	Rural	82.2%	0.0%	17.8%	0.0%
	Urban	59.9%	5.5%	34.5%	0.0%
Bannu	Division	4.1%	0.0%	95.0%	1.0%
	Rural	3.9%	0.0%	95.1%	1.0%
	Urban	6.2%	0.0%	93.8%	0.0%
D.I.K	Division	11.3%	2.1%	78.7%	7.8%
	Rural	8.7%	1.4%	81.8%	8.1%
	Urban	29.3%	6.8%	58.0%	6.0%
Hazara	Division	74.9%	3.8%	21.3%	0.0%
	Rural	74.2%	4.0%	21.8%	0.0%
	Urban	80.8%	1.6%	17.6%	0.0%
Kohat	Division	21.2%	2.6%	76.3%	0.0%
	Rural	19.1%	2.2%	78.6%	0.0%
	Urban	28.5%	3.7%	67.8%	0.0%
Malakand	Division	19.0%	2.5%	78.5%	0.0%
	Rural	17.8%	2.4%	79.8%	0.0%
	Urban	34.6%	3.6%	61.9%	0.0%
Mardan	Division	25.3%	3.4%	71.0%	.4%
	Rural	25.4%	3.3%	70.8%	.5%
	Urban	25.0%	3.5%	71.6%	0.0%
Peshawar	Division	25.9%	4.2%	69.9%	0.0%
	Rural	19.3%	4.5%	76.2%	0.0%

	Urban	34.7%	3.8%	61.5%	0.0%
Bhawalpur	Division	31.2%	2.8%	62.2%	3.8%
	Rural	26.9%	2.9%	66.4%	3.8%
	Urban	44.5%	2.7%	49.2%	3.6%
D.G.Khan	Division	16.1%	2.0%	62.4%	19.6%
	Rural	15.1%	1.8%	60.4%	22.7%
	Urban	19.9%	2.8%	70.3%	6.9%
Faisalabad	Division	46.0%	3.0%	48.8%	2.2%
	Rural	43.7%	3.3%	51.0%	2.0%
	Urban	49.7%	2.5%	45.1%	2.6%
Gujranwala	Division	32.1%	3.1%	58.0%	6.9%
	Rural	30.1%	3.6%	58.9%	7.4%
	Urban	36.0%	2.0%	56.2%	5.8%
Lahore	Division	39.2%	2.6%	54.9%	3.3%
	Rural	32.5%	3.1%	58.2%	6.3%
	Urban	44.7%	2.2%	52.2%	.8%
Multan	Division	25.4%	3.7%	59.3%	11.6%
	Rural	19.4%	3.2%	64.0%	13.4%
	Urban	41.7%	5.1%	46.6%	6.6%
Rawalpindi	Division	37.3%	2.7%	57.2%	2.9%
	Rural	35.9%	2.6%	58.4%	3.1%
	Urban	39.6%	2.8%	55.1%	2.5%
Sahiwal	Division	35.3%	3.3%	56.0%	5.4%
	Rural	33.9%	3.6%	56.5%	5.9%
	Urban	40.4%	2.1%	54.2%	3.3%
Sargodha	Division	41.4%	2.5%	53.9%	2.1%
	Rural	39.6%	2.7%	55.6%	2.1%
	Urban	48.6%	2.0%	47.2%	2.2%
Hyderabad	Division	28.2%	3.1%	61.3%	7.4%
	Rural	19.5%	2.8%	67.8%	9.9%
	Urban	47.7%	3.8%	46.8%	1.7%
Karachi	Division	37.6%	2.0%	57.9%	2.5%
	Rural	13.5%	2.4%	76.1%	8.0%
	Urban	39.8%	2.0%	56.2%	2.0%
Larkana	Division	15.9%	2.7%	79.2%	2.1%
	Rural	7.5%	1.5%	88.0%	3.0%
	Urban	35.3%	5.6%	59.2%	0.0%
Mir Pur Khas	Division	25.5%	3.0%	65.8%	5.8%
	Rural	22.0%	2.7%	68.4%	7.0%
	Urban	42.0%	4.4%	53.6%	0.0%
Shaheed Benazir Abad	Division	36.3%	3.3%	55.0%	5.3%
	Rural	34.2%	3.9%	55.6%	6.3%
	Urban	48.3%	0.0%	51.7%	0.0%
Sukkur	Division	14.3%	2.4%	80.8%	2.5%
	Rural	9.1%	2.2%	85.7%	3.0%
	Urban	26.6%	3.1%	69.2%	1.2%

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