

## Cost of Diet Analysis in Pakistan

### Introduction

The prevalence of undernutrition has shown little change in Pakistan over the last several years. The Pakistan Demographic Health Survey (PDHS, 2017-18) and National Nutrition Survey (NNS, 2018)<sup>1</sup> show 38% and 40% of children below five years of age are stunted, respectively. There are provincial differences, for example, in Multiple Indicator Cluster Surveys (MICS 2018-19), 50 % of children in Sindh province are stunted and 41% are underweight, while in Punjab (MICS 2017-18) these rates were 32% and 21% respectively.

Undernutrition persists due to household food insecurity and poor caregiving practices because of lack of knowledge and resources. This is partly due to political and economic structural challenges (University of Sussex, March 2013). The CoD analysis explores the economic constraints, food habits and behaviors that contribute to high levels of macronutrient and micronutrient deficiencies.

### Key Findings

Access to nutrient-rich foods is not the main obstacle in poor households to obtain a balanced diet. The software identified that recommended intakes of energy, protein, fat, all the nine vitamins and the four minerals can be met using foods available in local markets unless restricted by economic constraints and cultural practices. A previous CoD analysis in 2016 had revealed that micronutrient deficiencies as well as poor dietary diversity were highly prevalent in women of reproductive age (Table 1).

**Table 1: Prevalence of micronutrient deficiencies in children and women in 2018**

Micronutrient Deficiencies	Child (%)	Maternal (%)
Vitamin A deficiency	54.0	46.0
Anemia	62.0	51.0
Zinc deficiency	39.2	47.6

Children aged 12-23 months receive a significant amount of their energy, protein, fat, and micronutrient needs from breastmilk. Furthermore, the cost of a nutritious diet is meaningful when compared with the income and purchasing power of the poorest members of the community. An otherwise inexpensive diet may still be beyond the means of the very to buy and thus lead to the risk of undernutrition.

**Food habits nutritious diet (FHAB):** Meets recommended intakes for energy, protein, fat and 13 micronutrients based on typical dietary habits of households in the assessment district or livelihood zone

**Nutritious diet (NUT):** Meets recommended intakes for energy, protein, fat and 13 micronutrients

**Energy-only diet (EO):** Meets only recommended average energy specifications

**Macronutrient diet (MAC):** Meets recommended intakes for energy, protein and fat

### Salient Features

1. The CoD approach can guide program design and behavior change communication in terms of nutrition, food security, livelihoods, and social protection to impact policies.
2. Availability of nutrient-rich (NUT) foods is not a key barrier to poor households in obtaining a nutritious diet.
3. Some nutritious foods are taboo for pregnant women, and other easily available highly nutritious foods are not eaten due to local dietary practices.
4. Food habit nutritious (FHAB) diet is more expensive than the NUT diet, and energy only (EO) diet. However, expense and affordability vary depending on the livelihood and area of residence.
5. Among the micronutrients (vitamin B12, calcium, iron and etc.) those mainly coming from animal sources, are the hardest to meet using locally-available foods.
6. Breastmilk significantly contributes to the energy, protein, fat and micronutrient needs of even children aged 12–23 months.

Data on estimates of cash income are taken from HIES 2015–2016 conducted by the Pakistan Bureau of Statistics (HIES, 2017) (refer to table 3). Thus, the findings suggest very poor and poor households cannot afford the FHAB diet in almost all livelihood zones given their current levels of income. In some livelihood zones, only the wealthiest quintile can afford the FHAB diet. However, the software identified **recommended intakes of a nutritious diet that can be met using foods available in local markets** except if they are restricted by economic constraints and cultural practices.

**Table 2: Total household income and non-food expenditure**

PKR	Very poor	Poor	Middle	Better off	Wealthy
Annual Income	236,904	285,912	336,240	404,016	725,412
Annual Non-Food Expenditure	139,830	172,927	201,890	236,908	399,977

### Methodology

Cost of the Diet (CoD) analysis surveys were conducted as part of NNS 2018, total of 17 assessments in 17 different livelihood zones were conducted in the 12 districts across four provinces and three administrative regions (Azad Jammu and Kashmir, Gilgit-Baltistan and Islamabad Capital Territory) of Pakistan to understand cost impediments to a healthy diet.

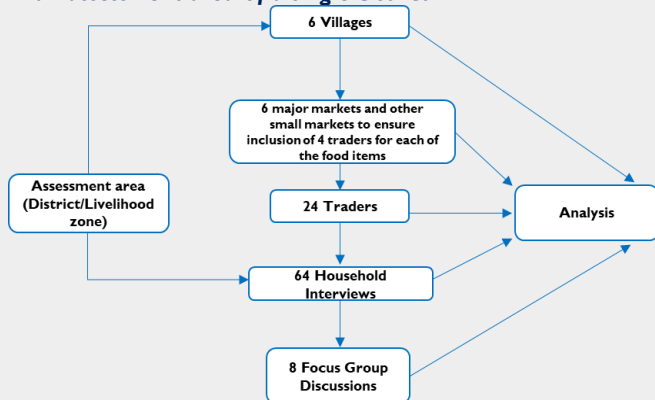
If there were two or more predominant livelihood zones in a district, separate CoD assessments were done, as people in a livelihood zone share broadly the same patterns of access to food (refer to table 1).

**Table 3: Assessment districts and livelihood zones**

	Province	District	Livelihood zones
1	Khyber Pakhtunkhwa (KP)	Charsadda Tank	Livestock Tank a. Agriculture b. Livestock/ poultry
2	Islamabad Capital Territory (ICT)	Islamabad	Employment/ labour (paid/unpaid)
3	Punjab	Faisalabad Rajapur	Agriculture Agriculture
4	Azad Jammu and Kashmir (AJK)	Haveli	a. Agriculture b. Livestock/ poultry
5	Balochistan	Loralai Naseerabad	Agriculture Agriculture
6	Sindh	Jacobabad Sanghar	Agriculture a. Agriculture b. Livestock/ poultry
7	Gilgit-Baltistan (GB)	Gilgit	a. Agriculture
8	Tribal Districts of KP (formerly known as the Federally Administered Tribal Areas)	Khyber	a. Agriculture b. Employment/ labour (paid/unpaid)

The study also included a qualitative aspect in which a total of 102 villages were visited from which weight and price data of foods available in the local markets were collected; 102 focus group discussions were conducted, and 816 mothers of children aged 6–23 months were interviewed (refer to figure).

**Figure 1: Villages, markets, traders, interviews and focus groups in an assessment area of a single district**



CoD software was used to calculate four types of diets that recommend intakes of energy, protein, fat and micronutrients based on specifications to limit the intake of foods and nutrients to avoid toxicity. The needs of individuals for energy, protein, and micronutrients were taken from a database embedded in the CoD software that specifies the estimated average requirement recommended by World Health Organization (WHO) and Food and Agriculture Organization (FAO) for individuals by age, sex and activity level. The four diets are presented below for the individual or family under discussion.

While all four diets are analyzed in the study, the focus is on the affordability of two key diets: NUT and FHAB, with additional discussion on EO diets.

## Strengths

- This was the first ever countrywide CoD study, based on primary data collection.
- The CoD approach and software can be used to guide programme design and behavior change communication in the areas of nutrition, food security, livelihoods, and social protection. It can also be used to impact policies and advocacy arguments on the cost of satisfying energy and nutrient standards.

## Limitations

- The quality of data would be enhanced by repeating this study over time to get longitudinal information about costs and expenses. This would also minimize recall biases by traders for prices and availability of foods across different seasons of the year.
- The sampling used by the study is not representative of Pakistan as it is not random and has selected districts with highest levels of undernutrition and as requested by each province.
- The cost of some food items that are produced at home and consumed might not be considered in the analysis as these were not quantified. This will result in actual cost of the diet being higher than was measured. This may be corrected with a household economic study.

## Recommendations

1. Dietary modification (food habits) can improve the quality, composition, and affordability of a nutritious diet as FHUT are more expensive than NUT. Cheap, nutritious and easily available options should be promoted through social behavioral change communication. This should be a part of all community based nutrition programs.
2. Social protection schemes may be scaled up to improve affordability of a nutritious diet with specific activities determined on the basis of district-specific household economic studies.
3. Continuation of breastfeeding to two years of age with appropriate complementary feeding may be promoted. However, it must also be recognized that this is an adaptation to child malnourishment in poverty and comes at a significant health cost to mothers.
4. Family planning services that support women in avoiding unwanted pregnancies and to allow spacing between children can help to reduce average family sizes and indirectly improve the nutrition of households.
5. Promoting the self-production of selected crops (such as wheat), vegetables (onions), livestock (poultry for eggs) among the poorest rural communities can help.

1 National Nutrition Survey 2018, <https://www.unicef.org/pakistan/reports/national-nutrition-survey-2018-key-findings-report>

2 Cost of Diet Report – Pakistan 2018, <https://www.unicef.org/pakistan/reports/cost-diet-analysis-report-pakistan>

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