

The Minimum Cost of a Nutritious Diet in El Salvador

Edytha Alfaro, SOWER Scholar; Luis Sandoval, Carlos Carpio, PhD;
Department of Agricultural and Applied Economics, Texas Tech University



Introduction

- The World Food Summit of 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”.
- One of the pillars of food security is *food access*, which according to the World Health Organization is *having sufficient resources to obtain appropriate food for a nutritious diet*.
- The poverty conditions of El Salvador seriously affect this pillar. According to the Economy Ministry of El Salvador 31.9% of households live in poverty conditions (Economy Ministry, 2015).
- The Minimum Cost of a Nutritious Diet (MCND) is the cost of the theoretical, simulated diet (food basket) which satisfies all nutritional requirements of a modeled family at the minimal possible cost, based on food products availability, prices, and nutritional content (World Food Programme, 2013).

Objectives

- To estimate the minimum cost diet and its composition for the representative Salvadorian household.
- To compare the minimum cost diet and the cost of the “basic food basket” which is a fixed basket of food items used by the government to calculate consumer price indices.
- To use the minimum cost diet to measure the incidence of food insecurity in the country.

Methodology

The representative household was defined to be composed of four members: 1 male adult, 1 female adult, 1 teenager male and 1 teenager female.

We follow a three steps approach for the analysis:

- Data collection of prices and nutritional composition of food products (Figure 1) and nutritional requirements (Table 1 and Figure 1).
- Data analysis using mathematical linear program techniques (Figure 2).
- Classification of households by their food security status. Households were classified as food insecure if MCND is more than 70% of households’ income.

A total of 53 food items (X_{iS}) and 15 nutrients (N_{jS}) were used for this research.

Figure 1. Flow chart of the procedure used to estimate MCND.

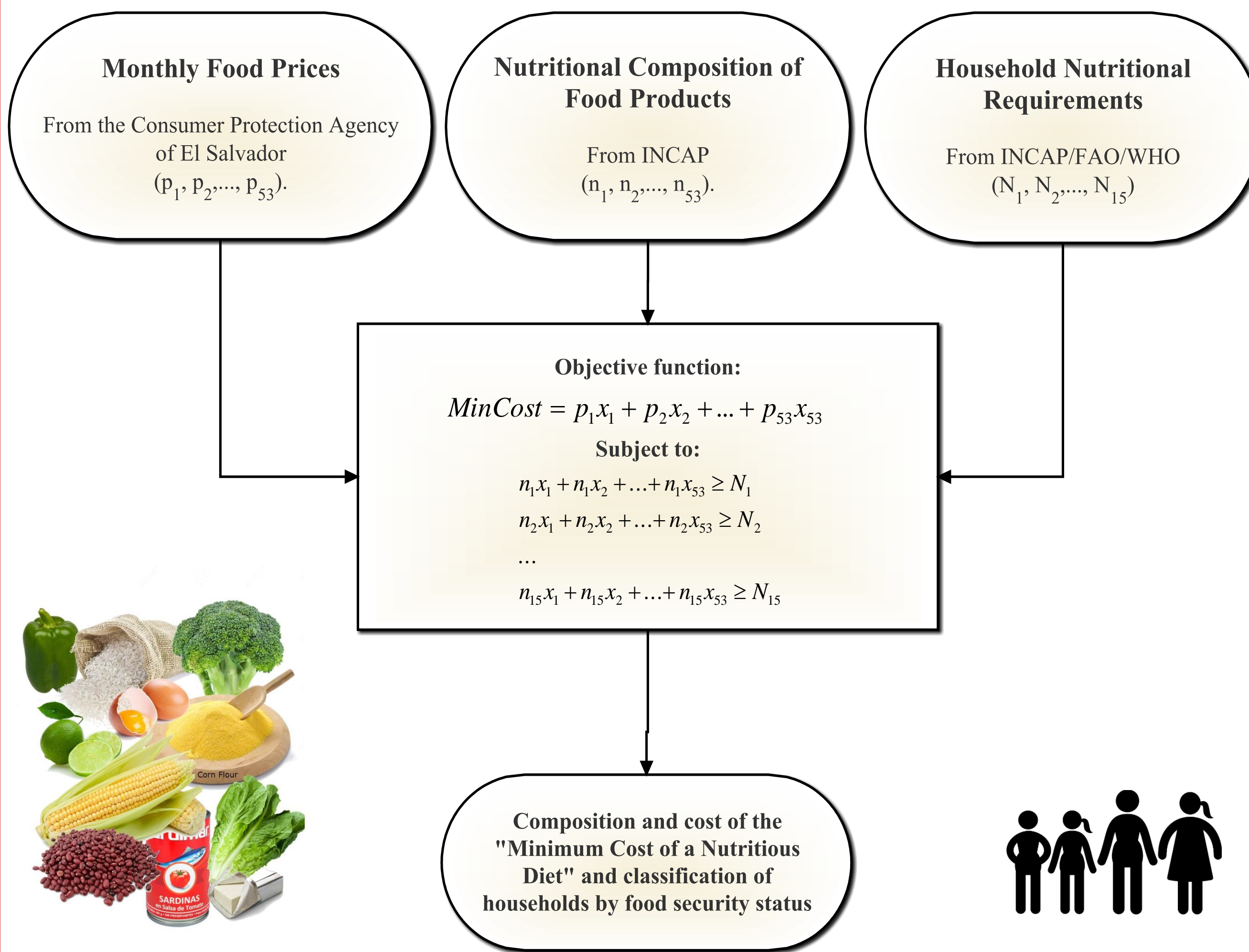
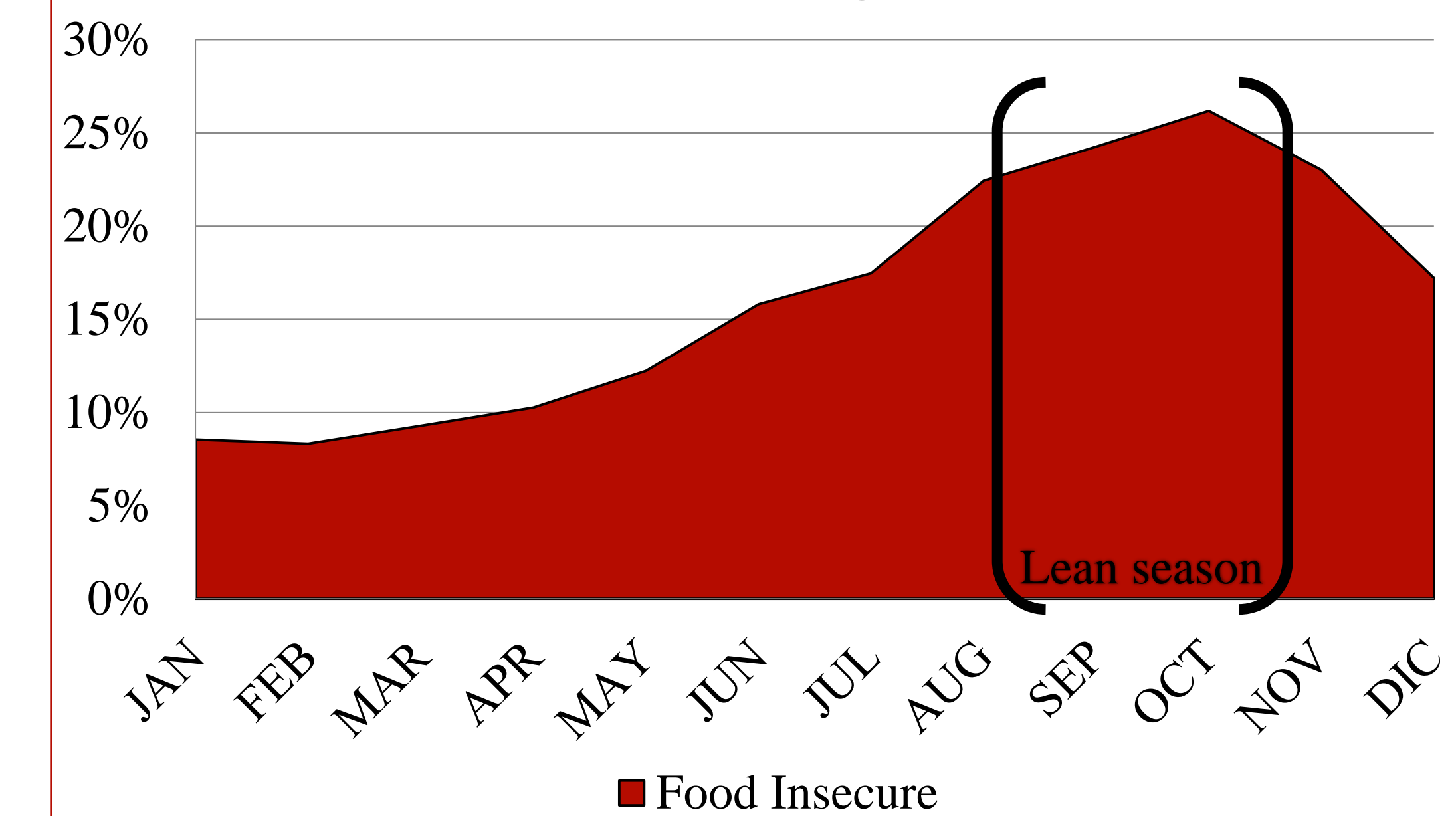


Table 1. Nutritional requirements for a representative household.

Nutrient (N)	Unit	Household
Energy	Kcal	10600
Protein	gr	196.75
Vit. A	µg	2400
Vit. C	mg	270
Calcium	mg	4600
Phosphorus	mg	2800
Magnesium	mg	1320
Zinc	mg	34.7
Iron	mg	56.05
Thiamine	mg	4.6
Riboflavin	mg	4.7
Niacin	mg	62
B6	mg	5.1
B12	µg	9.6
Folate	µg	1600

Figure 3. Proportion of households that were food insecure during 2014.



Discussion:

- The estimated MCND for a representative Salvadorian household ranged between \$109- \$158/month for the years 2014 and 2015.
- During the entire period of analysis, the MCND is significantly lower than the cost of the urban basic food basket.
- The minimum cost nutritious diets only include 11 food items; beans and corn are the most important components of the diet. In contrast, the urban and rural basic food baskets include 11 and 9 products, respectively.
- Based on the MCND analysis, it is estimated that in 2014 16% of Salvadorian households were food insecure. The incidence of food insecurity reached a maximum of 26.3% in October.

Conclusion

- Relative to the cost of the basic food basket, the MCND approach allows for substitutability of food products.
- The MCND analysis is an important tool that can be used to analyze the dynamics of food security. For example, the MCND analysis identifies specific time periods when the incidence of food insecurity is higher; thus, this information can be used by governments to design strategies to address this problem.

Results

Figure 2. Comparison between MCND and the Cost of Basic Urban and Rural Food Baskets 2014-2015

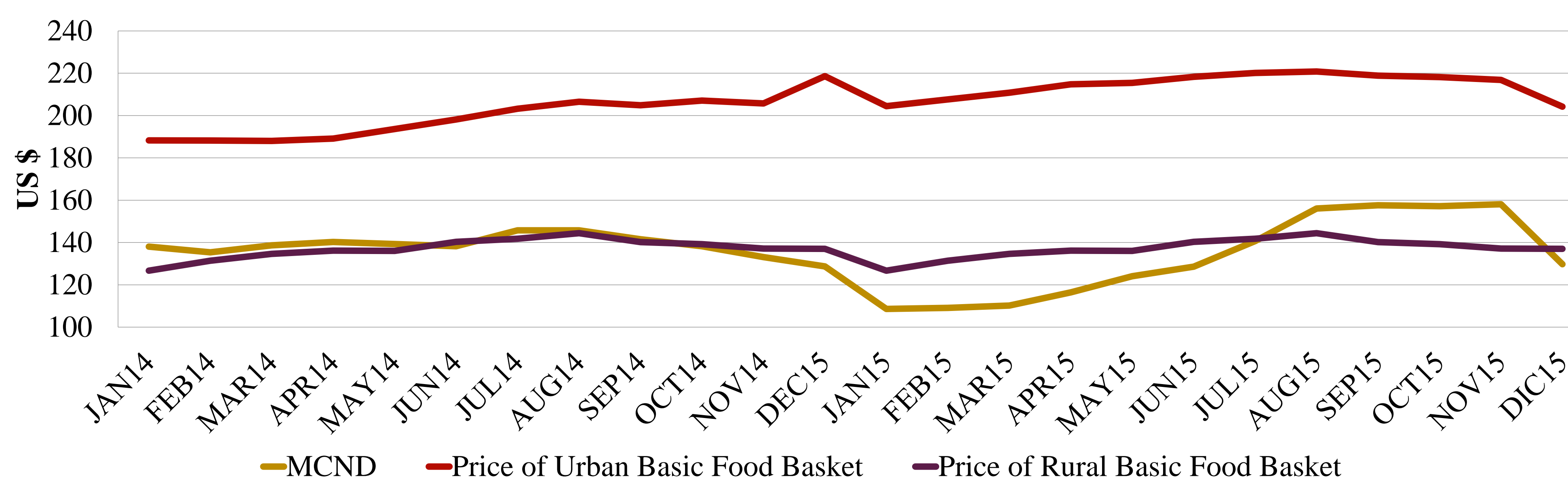


Table 2. Composition of the Minimum Cost of a Nutritious Diet expressed as monthly budget shares for 2014.

No. PRODUCT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1 White rice											27%	
2 Red beans	21%	22%	23%	26%	30%	31%	33%	36%	38%	39%	7%	29%
3 Corn	20%	19%	19%	19%	18%	18%	16%	17%	15%	15%		20%
4 Lemon											6%	
5 Broccoli	9%	9%	9%	9%	9%	8%	8%	7%	7%	7%		8%
6 Green pepper												
7 Lettuce												
8 Cornmeal	12%	12%	12%	11%	10%	10%	17%	16%	16%	16%	36%	10%
9 Egg	8%	8%	8%	7%	8%	8%						8%
10 Cream Cheese												
11 Sardines	29%	30%	28%	26%	25%	24%	26%	23%	23%	23%	23%	25%

Note: Color intensity from green to red is used to indicate the importance of the food products in the diet. For example, products highlighted in red have larger budget shares than products highlighted in green.

References

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