

# The Cost of Essential Nutrition Interventions to Reduce Chronic Malnutrition in Guatemala

## Introduction

Chronic malnutrition in Guatemala, manifested as childhood stunting, is a problem of alarming significance and magnitude. According to the National Survey of Maternal and Child Health 2008/2009, 50% of boys and girls between 3 and 59 months of age are stunted.<sup>1</sup> In rural areas, the percentage reaches 59%, and among indigenous populations it increases to 66%, a figure only surpassed by children of mothers without education (69%). Notably, Guatemala's prevalence of chronically malnourished children is above the average reported in Africa (40%), Asia (39%), and Latin America and the Caribbean (12%). Minimal progress has been achieved at combating chronic malnutrition during the past two decades, as stunting has decreased only 5 percentage points from 55% in 1995 to 50% in 2008/2009.

Nutrition is a pillar for health and necessary to improve academic performance and protect human capital, both of which foster national development. Reducing chronic malnutrition is a priority for the current Government—the Zero Hunger Pact aims to reduce chronic malnutrition by 10% between 2012 and 2015, and by 24% by 2021.<sup>2</sup>

To assist the Guatemalan government to plan and budget for the comprehensive package of nutrition services necessary to address chronic malnutrition, USAID supported the Food and Nutrition Technical Assistance III Project (FANTA) and the Central American Institute of Fiscal Studies (Icefi) to carry out a costing study of nutrition interventions in

coordination with the Guatemalan Ministry of Public Health and Social Welfare (known as MSPAS in Spanish) and the Ministry of Public Finances (Minfin). The costing exercise included essential nutrition interventions provided by the MSPAS as part of the government's goal to reduce chronic malnutrition under the Zero Hunger Pact. The interventions that were costed include the following.

### *Nutrition-specific interventions:*

- Promotion of maternal nutrition during prenatal care
- Promotion of exclusive breastfeeding until 6 months of age and continued breastfeeding to 2 years or beyond
- Promotion of complementary feeding and provision of fortified blended flour
- Provision of micronutrients for children and mothers
- Growth monitoring
- Nutritional management of sick children
- Management of acute malnutrition at the community level

### *Nutrition-sensitive interventions implemented by the health sector:*

- Monitoring of water quality
- Vaccination

This study estimates the total cost of these interventions for 2013–2021 and also includes the cost of expanding coverage to reach all eligible mothers and children in Guatemala by 2021.

## Methodology

Innovative in its approach, the activity-based costing (ABC) methodology was used to carry out the first ever costing of nutrition services provided by the public sector. Figure 1 illustrates the steps

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<sup>1</sup> Ministerio de Salud Pública y Asistencia Social. 2010. *Encuesta Nacional de Salud Materno Infantil 2008 (ENSMI-2008/09)*. Guatemala: MSPAS/Instituto Nacional de Estadística (INE)/Centros de Control y Prevención de Enfermedades (CDC).

<sup>2</sup> Government of the Republic of Guatemala. 2012. [Zero Hunger Pact](#).

followed in the costing methodology, the information required to perform the calculations at each step, as well as outputs produced at each phase. Field visits were conducted in six departments of the country (Alta Verapaz, Guatemala, Huehuetenango, Jutiapa, Quiché, and Sololá) to gather information necessary for costing. Data were collected from a sample of first- and second-level health care facilities (health posts, health centers, etc.) with different service delivery mechanisms (i.e., managed by MSPAS, nongovernmental organizations, or others) and in areas with varying prevalence of chronic malnutrition.

As noted in Figure 1, unit costs by intervention were calculated to estimate the total cost of providing nutrition services at the current level of coverage for each intervention for one year. Cost estimates were then projected for expanding coverage over the period of 2013–2021 to reach all eligible women and children, based on population projections, taking into account current levels of coverage for each intervention.

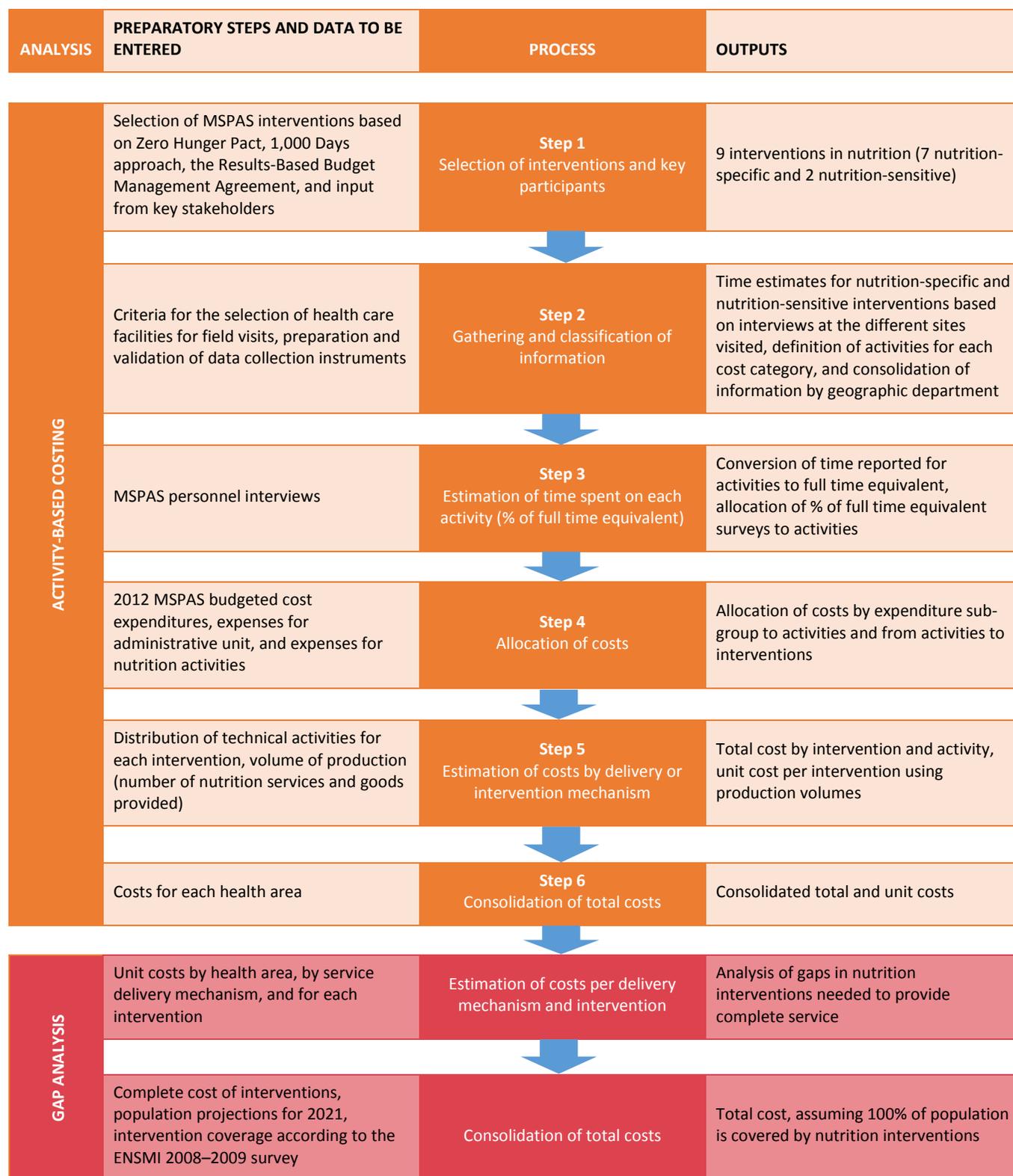
## Results

The study found an investment gap for 2013 in the amount of Q1.196.5 million given that the government's investment in nutrition for that year was Q637.2 million, only one-third of what was

required. To estimate the investment gap for nutrition, it was critical to compare the government's projected budget with the estimated investments required to strengthen nutrition service delivery between 2013 and 2021. If the government continues budgetary increases in nutrition equivalent to 5% every year, it is estimated that the gaps may reach around Q1.372.1 million (0.31% of GDP) in 2014, around Q1.986.0 million (0.38% of GDP) in 2017, and approximately Q2.987.8 million (0.45% of GDP) by 2021 (see Figure 2). This under-investment is likely to have grave consequences for the nutritional status of Guatemalans and for the social and economic development of the country.

Figure 3 provides the projected total yearly investment required to strengthen and expand required nutrition services to reduce malnutrition in 10 prioritized departments with high chronic malnutrition, as well as nationally. If sufficient annual resources are not made available to achieve nutrition goals, the budget shortfall for nutrition is predicted to grow. Because the current tax collection system is insufficient to provide the needed resources, additional revenue channels will be needed. Additionally, precise and transparent information about the cost of nutrition interventions is crucial to substantially increase public spending for nutrition to meet and achieve national development goals.

**Figure 1. Activity-Based Costing Methodology Flowchart of the Essential Nutrition Interventions**



Source: Developed by FANTA/Icefi

Note: The results of the activity-based costing exercise (unit costs) are the basis for the gap analysis. Although the graphic shows both of these processes, each is independent of the other.

**Figure 2. Comparison between the Government Budget and Estimated Investments to Strengthen Selected Nutrition Interventions, 2013–2021 (amounts in millions of quetzals)**

Year	Total Estimated Investment Required						Government of Guatemala Budget Projection		Estimated Gap in Funding for Nutrition					
	National Scenario			Scenario for Prioritized Departments					National Scenario			Prioritized Departments Scenario		
	Nutrition-Specific	Nutrition-Sensitive	Total National	Nutrition-Specific	Nutrition-Sensitive	Total Prioritized Departments	National	Prioritized Departments	Nutrition-Specific	Nutrition-Sensitive	Total National	Nutrition-Specific	Nutrition-Sensitive	Total Prioritized Departments
2013	1,420	414	1,834	756	277	1,034	637	437	926	270	1,196	437	160	597
2014	1,566	471	2,037	852	314	1,166	665	456	1,055	317	1,372	519	192	711
2015	1,722	534	2,256	953	356	1,308	694	476	1,193	370	1,562	606	227	833
2016	1,893	602	2,495	1,064	400	1,464	724	496	1,343	427	1,771	704	265	968
2017	2,065	675	2,740	1,177	448	1,625	754	516	1,497	489	1,986	803	306	1,108
2018	2,233	753	2,986	1,286	499	1,785	784	537	1,647	555	2,202	899	349	1,248
2019	2,407	835	3,242	1,400	553	1,953	815	558	1,802	625	2,427	1,000	395	1,395
2020	2,619	920	3,538	1,540	609	2,149	848	581	1,991	699	2,691	1,124	444	1,568
2021	2,858	1,011	3,869	1,697	667	2,365	882	604	2,207	781	2,988	1,264	497	1,761
<b>Total</b>	<b>18,783</b>	<b>6,214</b>	<b>24,998</b>	<b>10,725</b>	<b>4,124</b>	<b>14,849</b>	<b>6,803</b>	<b>4,660</b>	<b>13,661</b>	<b>4,534</b>	<b>18,195</b>	<b>7,355</b>	<b>2,833</b>	<b>10,189</b>

The first part of the figure shows the total estimated investment needed to provide nutrition-specific and nutrition-sensitive services in Guatemala during 2013–2021. It also provides estimated costs for the prioritized departments during the same time period. On average, the proposed estimated costs show that 77% of the total budget allocated to nutrition should be allocated to nutrition-specific services, while 23% should be allocated to nutrition-sensitive services each year between 2013 and 2021. The middle section (budget) presents the amount the Government of Guatemala is projecting to spend each year on nutrition, from 2013 to 2021. The last section provides the estimated gap in funding for those years.

Source: Developed by FANTA/Icefi based on ABC costing model

**Figure 3. Projections for the Total Annual Government Investment Needed to Strengthen Essential Interventions to Reduce Malnutrition by Prioritized Department (amounts in millions of quetzals)<sup>3</sup>**

Department	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
<b>Nutrition-Specific Interventions</b>										
Alta Verapaz	120	133	148	165	182	201	220	243	267	1,680
Baja Verapaz	27	29	32	35	39	42	46	50	55	355
Chimaltenango	104	113	123	134	144	154	165	178	192	1,308
Chiquimula	25	28	31	34	37	40	44	48	53	340
Huehuetenango	154	176	196	218	239	259	280	306	335	2,163
Quetzaltenango	70	76	83	90	97	104	112	121	130	882
Quiché	55	63	72	82	93	104	116	131	147	864
San Marcos	99	117	136	158	180	200	220	245	276	1,630
Sololá	49	53	58	63	68	74	79	86	93	623
Totonicapán	56	64	74	85	97	107	118	133	149	882
<b>Prioritized Departments</b>	<b>757</b>	<b>852</b>	<b>953</b>	<b>1,064</b>	<b>1,177</b>	<b>1,286</b>	<b>1,400</b>	<b>1,540</b>	<b>1,697</b>	<b>10,725</b>
<b>National</b>	<b>1,420</b>	<b>1,566</b>	<b>1,723</b>	<b>1,893</b>	<b>2,065</b>	<b>2,233</b>	<b>2,407</b>	<b>2,619</b>	<b>2,858</b>	<b>18,784</b>
<b>Nutrition-Sensitive Interventions</b>										
Alta Verapaz	12	13	15	17	19	21	23	26	28	172
Baja Verapaz	3	3	4	4	5	5	6	6	7	43
Chimaltenango	6	7	8	9	10	11	12	13	14	88
Chiquimula	3	3	4	4	5	5	6	6	7	42
Huehuetenango	46	52	58	65	73	80	89	97	106	665
Quetzaltenango	36	41	46	52	58	65	72	79	88	538
Quiché	103	117	132	149	168	188	209	231	253	1,548
San Marcos	37	41	47	52	58	65	72	79	86	535
Sololá	17	20	22	25	28	31	34	37	41	254
Totonicapán	16	19	21	23	26	29	32	35	38	238
<b>Prioritized Departments</b>	<b>278</b>	<b>315</b>	<b>356</b>	<b>400</b>	<b>448</b>	<b>499</b>	<b>553</b>	<b>609</b>	<b>667</b>	<b>4,124</b>
<b>National</b>	<b>414</b>	<b>471</b>	<b>534</b>	<b>602</b>	<b>675</b>	<b>753</b>	<b>835</b>	<b>920</b>	<b>1,012</b>	<b>6,214</b>

Source: Developed by FANTA/Icefi, based on the ABC costing model

<sup>3</sup> If updated coverage information becomes available, the cost calculation may change for scale-up of coverage.

## Recommendations

Based on the costing results and the projected investment gaps in nutrition, recommendations are to:

### Increase investment in nutrition by:

- Promoting increased funding for nutrition, without harming other health investments, by fostering greater awareness of the importance of optimal nutrition for economic and social development.
- Strengthening the government health infrastructure, particularly at the first and second level of care to prioritize preventive actions to promote nutrition.
- Addressing the need for increased tax revenue, which is not possible under the current tax structure.
- Undertaking periodic costing exercises using the ABC methodology in order to improve budgeting and financial management of nutrition resources, including updating the costing formulas in the Minfin catalog for nutrition activities under the Results-Based Budget Management Agreement.

### Promote policies that favor nutrition goals by:

- Promoting the inclusion of nutrition with other priority maternal and child health issues, working across sectors to link nutrition-specific and nutrition-sensitive actions.

### Strengthen nutrition programming by:

- Developing the capacities and competencies of staff in charge of nutrition activities, clearly defining their roles and duties.
- Strengthening the supervision, monitoring, and evaluation of nutrition activities to ensure their compliance with service and quality standards.
- Allocating financial and human resources depending on the magnitude of the problem, prioritizing prevention of chronic malnutrition, with special emphasis on health care options that guarantee coverage and access at the community level.

The full report—The Cost of Essential Nutrition Interventions to Reduce Chronic Malnutrition in Guatemala—as well as an ABC costing manual, is available in Spanish at [www.fantaproject.org](http://www.fantaproject.org).

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