

COVID-19 in Guatemala: impact on diet and nutrition outcomes and policy responses

Case study report

April 2021

About the Nutrition Research Facility

The Knowledge and Research for Nutrition project of the European Commission (2020-2024) aims to provide improved knowledge and evidence for policy and programme design, management, monitoring and evaluation in order to reach better nutrition outcomes.

The project is implemented by Agrinatura - the European Alliance on Agricultural Knowledge for Development – which has established a Nutrition Research Facility, pooling expertise from European academia, with the ability to mobilise internationally renowned scientific networks and research organisations from partner countries.

The Nutrition Research Facility provides expert advice to the European Commission and to the European Union (EU) Member States and Partner Countries.

Contact: nrf@agrinatura-eu.eu



Disclaimer

This publication was produced with the financial support of the European Commission. Its contents are the sole responsibility of AGRINATURA and do not necessarily reflect the views of the European Union.

List of acronyms

AGRICOLA	AGRICultural OnLine Access
APEVIHS	Asociación para la Prevención y Estudio del VIH/Sida
APSA	Primary Care in Expanded Health
CATIE	Tropical Agricultural Research and Higher Education Centre
CERF	United Nation's Central Emergency Response Fund
CMAM	Community Management of Acute Malnutrition
COPRECOVID	Presidential Commission against COVID-19
CSP	Country Strategic Plan
DCI	Development Cooperation Instrument
DIGITAGRO	"Investing in digital technology to increase market access for women agri-entrepreneurs in Guatemala" project
DPL	Development Policy Loan
ECLAC	Economic Commission for Latin America and the Caribbean
FAO	Food and Agriculture Organization
FCS	Food Consumption Score
FIRST	Food Security and Nutrition Impact, Resilience, Sustainability and Transformation programme
FPMA	Food Price Monitoring and Analysis tool
GHDx	Global Health Data Exchange
GTQ	Guatemalan quetzal
GUATEINNOVA	"Modern and Resilient Agri-food Value Chains" project
HFS	High-Frequency Survey
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
IMF	International Monetary Fund
IPC	Integrated Phase Classification
IPC AFI	Integrated Phase Classification for Acute Food Insecurity
IYCF-E	Infant and Young Child Feeding in Emergencies
LMICs	Low- and Middle-Income Countries
MAGA	Ministry of Agriculture, Livestock and Food (<i>Ministerio de Agricultura, Ganadería y Alimentación</i>)
MEDLINE	Medical Literature Analysis and Retrieval System Online
MIDES	Ministry of Social Development (<i>Ministerio de Desarrollo Social</i>)
MINEDUC	Ministry of Education (<i>Ministerio de Educación</i>)
MINTRAB	Ministry of Labour and Social Welfare (<i>Ministerio de Trabajo y Previsión Social</i>)
MIP	Multiannual Indicative Programme
MNPs	Multiple Micronutrient Powders
MSPAS	Ministry of Public Health and Social Assistance (<i>Ministerio de Salud Pública y Asistencia Social</i>)
MUAC	Mid Arm Circumference
NIPN	National Information Platforms for Nutrition
OECD	Organisation for Economic Co-operation and Development
PAHO	Pan American Health Organization
RSS	Really Simple Syndication
RUTF	Ready-to-use Therapeutic Food
SESAN	National Food Security and Nutrition Agency (<i>Secretaría de Seguridad Alimentaria y Nutricional</i>)
SICA	Central American Integration System (<i>Sistema de la Integración Centroamericana</i>)
SPRP	Strategic Preparedness and Response Program
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNETE	UN Technical Emergency Team
UNHCR	The United Nations Refugee Agency
UNICEF	United Nations International Children's Emergency Fund
US\$	United States of America dollars
WASH	Health, Food Security and Nutrition, Water Sanitation and Hygiene
WFP	World Food Programme
WHO	World Health Organisation

Contents

Executive summary	i
Introduction	1
1. Methods	2
2. Government Containment Measures	3
3. Food and Nutrition Security Indicators	5
4. Government Policy Responses	12
5. Food and nutrition security responses of International Donors and Non-Governmental Initiatives .	15
Discussion	23
Acknowledgements	27
References	28
Annexes	a
Annex 1 - Search Strategy	a
Annex 2 – List of Guatemalan institutions contacted for the stakeholder consultation.	b

List of figures and tables

Figure 1: Evolution of the cumulative number of confirmed cases and deaths due to COVID-19 per million inhabitants in Guatemala as of 20 th January 2021.	1
Figure 2: Strictness levels of government containment measures in response to the evolution of the new COVID-19 cases detected in Guatemala, as of 20 January 2021.....	4
Figure 3: Cumulative incidence (top panel) and Evolution of total cases (bottom panel) of acute undernutrition in children under-5 registered in Guatemala in 2017, 2018, 2019 & 2020.....	5
Figure 4: Annual fluctuation of the wholesale prices of key staple foods Guatemala (A) maize, B) black beans and C) rice) at national level and in Guatemala City markets, between November 2017 and November 2020	11
Figure 5: Evolution of the cost (in quetzals) of the basic food basket in Guatemala, between October 2017 and November 2020.....	11
Table 1. Evolution of the IPC Acute Food Insecurity Analysis from November 2018 to March 2021 in Guatemala.	7
Table 2. Changes in the percentage of people (May 2020) or households (HH) (October 2020 and January 2021) using crisis or above-crisis-level food-based coping strategies during the COVID-19 pandemic in Guatemala.....	7
Table 3. Changes in the number of households (HH) reporting challenges accessing markets/grocery stores in May 2020, October 2020 and January 2021 in Guatemala.	9
Table 4. Summary of the activities implemented in Guatemala by international organisations in support of measures to alleviate the impact of COVID-19 on nutrition outcomes.....	16

Executive summary

This case study aims to analyse the negative effect of the COVID-19 pandemic on diet and nutrition outcomes in Guatemala and to draw lessons on how interventions and policies can be implemented to mitigate these negative effects. The first confirmed case of COVID-19 in Guatemala was reported on the 13th of March 2020. On the 20th of January 2021, the cumulative incidence accounted for 8,446 confirmed infections per million inhabitants, which corresponds to a total of 151,324 cases detected in the country.

Containment measures

The Government of Guatemala took swift action to contain the virus and prevent transmission, through widespread public health and movement restrictions prevention measures common to most countries. A national state of emergency was declared on the 5th of March 2020, before Guatemala reported its first case and the Ministry of Public Health and Social Assistance defined a “Plan for the prevention, containment and response to COVID-19 cases in Guatemala”, which was aligned to the COVID-19 Strategic Preparedness and Response Program (SPRP) developed by the World Health Organisation (WHO). The strictest level of the containment measures adopted in response to the first case were insufficient to avoid the peak of new daily cases, which was registered on 18th July 2020 with 236,275 new cases per million inhabitants. From the second half of July 2020 onwards, the strictness of the measures introduced responded to the evolution of new cases. In late September 2020, the government withdrew the State of Emergency and announced a recovery plan to support the re-opening of the economy. This plan encompassed, inter alia, temporary measures targeted to the most vulnerable, including food assistance and support for grassroots business. Since October 2020, a fully-fledged reopening has been in order, whereby all commercial and other activities could operate with some restrictions. The impacts of the COVID-19 pandemic, and the government response measures adopted, has had negative effects on the economy and has aggravated already precarious livelihoods for hundreds of thousands of vulnerable people. Restrictions in accessing formal and informal markets, coupled with a decrease in the purchasing power of households as a result of closure of several economic activities and the reduction of remittances, has put at risk the quality of diets and good nutrition. Moreover, while dealing with the negative impacts of the pandemic, Central America was severely affected by hurricane Eta at the beginning of November 2020, and hurricane Iota about two weeks later, affecting about 1.2 million people in the North and North-East regions of Guatemala.

Impact on diet and nutrition outcomes

The food and nutritional security indicators calculated from publicly available data for the country suggest an aggravation of the acute food insecurity in the country; illustrated by the 7-8% increase of households classified in Phases 3 and 4 of the Integrated Phase Classification for Acute Food Insecurity. This classification is based on risk calculations that consider hazards and vulnerability, the latter captures exposure, susceptibility and resilience. However, collectively, several indicators suggest that the adopted measures and the dedicated programmes promptly implemented by the government and in-country international agencies alleviated, to some extent, the anticipated negative impact of the pandemic on food security and nutrition of the most vulnerable populations. A cause-effect relationship between acute undernutrition and the COVID-19 pandemic in Guatemala could not be unambiguously established, due to a change in the recording system of new cases that occurred during 2020. Hence, the reported increase of acute undernutrition in children under-5 years from the 2017-2019 average to 2020 was observed, both in the January-March (pre-COVID) and in the August-December periods, but must be interpreted with extreme caution, since the methodological alteration hampers comparisons with previous estimates.

Nonetheless, historically, an increased incidence of acute malnutrition in children under-5 years was observed between April and August in years 2017-2019, which is attributable to the annual “hunger season”. Strikingly, this effect was not observed in 2020, which may be due to additional support to poor households as part of the measures implemented to address the negative impact of COVID-19 on nutrition. The direct impact of COVID-19 (and associated governmental measures) on overweight and obesity is of great concern in Guatemala, but is not possible to discern in the short-term, particularly because no directed, longitudinal study had been conducted. Likewise, the number of people with insufficient food consumption in the country, based on the Food Consumption Score (FCS), increased to nearly 4.5 million during the period of more restrictive measures, in mid-July 2020. But after that, this number declined progressively accounting for 1.8 million in January 2021. From May 2020 to January 2021, the proportion of households that reported challenges in accessing markets or grocery stores decreased by nearly 10%. Still, in January 2021, half of the families indicated that they faced problems regarding food accessibility. The most restrictive barriers were related to the government imposed restrictions on movement and commerce. As restrictive measures were lifted and further to the October 2020 fully-fledged reopening of commercial activities, the percentage of households reporting facing barriers steadily decreased. Conversely, lack of money was not among the top five barriers reported in May 2020 but increased to become the most significant barrier in October 2020 and January 2021. This suggests an aggravation in the poverty levels of the population.

In the domestic market, significant increases in the price of the basic food basket and in staple foods such as maize, beans or rice were registered with the advent of the quarantine period, even when food transportation was allowed and most markets were functioning. The annual peak in the price of maize was of similar magnitude of recent years’ records but was observed early in 2020 and was sustained for a longer period. Conversely, both black bean and rice prices peaked in 2020, showing a different behaviour of annual fluctuations when compared to previous years. The increased price of staple foods registered in November 2020 also relates to the damage caused by hurricanes Eta and Iota. During COVID-19 times, negative crisis coping strategies adopted by food-insecure households decreased from May 2020 to January 2021, which can also be associated with the support measures put in place in the country in response to the adverse effects of the pandemics or the alleviation of the stringency of the restrictions. The exception is the reliance on less expensive food, which increased during the same period. However, without information about the nature of the less expensive food in which 80% of people state that they rely on, one cannot conclude that diets changed to become healthier or unhealthier, and we cannot associate diet changes with specific dimensions of malnutrition. In fact, marginal fluctuations below 3% were reported in the daily consumption of fruits, cooked or raw vegetables, legumes, fish and meat, and milk and dairy according to an online survey conducted in Guatemala on the self-perception of eating habits and lifestyle before and during the Coronavirus (COVID-19) pandemic. While a parallel evaluation made by the FAO on rural family farming households, reported that 86% of households had reduced meat consumption, and about half reduced milk and fruit consumption, replacing these foods by maize, beans and local herbs (1). The former results are probably biased towards the less vulnerable populations, as it was targeted to those with an electronic device or computer with internet access and access to social media, while the later targeted rural households, suggest a potential differential impact of the pandemic on diet quality among different socioeconomic groups. The percentage of households reporting challenges in accessing health services also increased, reflecting the restrictions in mobility imposed by the government and the pressure on the health system due to COVID-19. The top barriers identified were travel restrictions, distance to the health services, closing of health services, denied access to health services and lack of money. Moreover, disruption in health and nutrition services was reported during the COVID-19 pandemic, including violations of the International Code of Marketing Breastmilk Substitutes and interruptions in breastfeeding, vitamin A supplementation and home fortification programmes.

Policy responses

To cope with the adverse effects of the COVID-19 pandemics, almost 200 governmental policy responses were registered, including social protection policies, farm policies, market policies, and reinforcement of malnutrition diagnosis and intervention policies, encompassing family agriculture support, food aid and cash transfers relying on multi-ministerial actions against malnutrition. In relation to food security and nutrition outcomes, one can highlight the following that were implemented: “Peasant Agriculture Programme” (*Programa de agricultura campesina*), the “Food Aid from the Rural Agriculture Programme”, the “Temporary Food Support Programme” (*Programa Temporal de Apoyo Alimentario por COVID-19*), the “Food Support and COVID-19 Prevention Programme” (*Programa de Apoyo Alimentario y Prevención del COVID-19*), the “School Feeding” (*Alimentación Escolar*), the “We Will Overcome” kit (*Kit Juntos Saldremos Adelante*) and the “Soup kitchen and food pantries/Government procurement from domestic farmers” official programmes.

Support from international organizations

In addition to the efforts of the Government of Guatemala in supporting the population facing restrictions aimed at containing the COVID-19 pandemics, there was a wide range of activities implemented through international partnerships. A number of international donors and non-governmental initiatives operating in Guatemala reviewed and adjusted their programmes to support the government in implementing the announced measurements to face the COVID-19 pandemics and implement new dedicated activities in support of the population. Among the most significant initiatives were interventions from the WFP, UNICEF, FAO, PAHO, UNDP, and Action Against Hunger. The scope of the activities was diverse and included: data collection, situation analysis and data sharing, training, screening and assisting vulnerable households, including children with acute malnutrition, supporting smallholders (cash transfers to target farming practices, supply of productive inputs and livelihoods assessment, and public procurement of food), supporting school feeding programmes, supporting the population with provision of cash and food, producing nutrition educational and awareness materials, or breastfeeding and maternal nutrition counselling. Most importantly, many of these organisations supported the government’s policies and efforts both in synergistic and complementary actions with the Ministry of Agriculture, Livestock and Food, the Ministry of Social Development, the Ministry of Education, the Ministry of Public Health and Social Assistance, as well as the National COVID-19 Response and Recovery Programme. Regarding dedicated programmes and projects, Guatemala benefits from the dedicated COVID-19 Fast-Track Facility of the World Bank Group’s Operational Response to COVID-19, through the implementation of COVID-19 Emergency Response Project “Guatemala COVID-19 Response”. Other World Bank projects with broader nutrition-sensitive support were either approved or extended due to COVID-19. The Crisis Response and Recovery in Guatemala Development Policy Loan (DPL) was approved to “support the mitigation the impacts of the COVID-19 pandemic on the human capital of poor and vulnerable Guatemalans”. Under the 2014-2020 Multiannual Indicative Programme (MIP), projects developed under Concentration Sector 1: “Food and Nutrition Security”; were adapted to the context of COVID-19 pandemics. In Guatemala, the European Union (EU) supports OXFAM to provide life-saving food and nutrition assistance to the most affected communities. As a strategic partnership between the EU and FAO, the Food Security and Nutrition Impact, Resilience, Sustainability and Transformation (FIRST) programme is working with the Ministry of Agriculture towards the development of the Strategic Food Security and Nutrition programme, which contains specific actions for crisis response and rapid production system recovery. The National Information Platforms for Nutrition (NIPN) also provides institutional support to Guatemala’s public bodies on nutrition and inter-institutional coordination, with an emphasis on the humanitarian-development-peace nexus and COVID-19 mitigation and response mechanisms, training and transfer of know-how as well as expertise in nutrition-related issues.

Final remarks

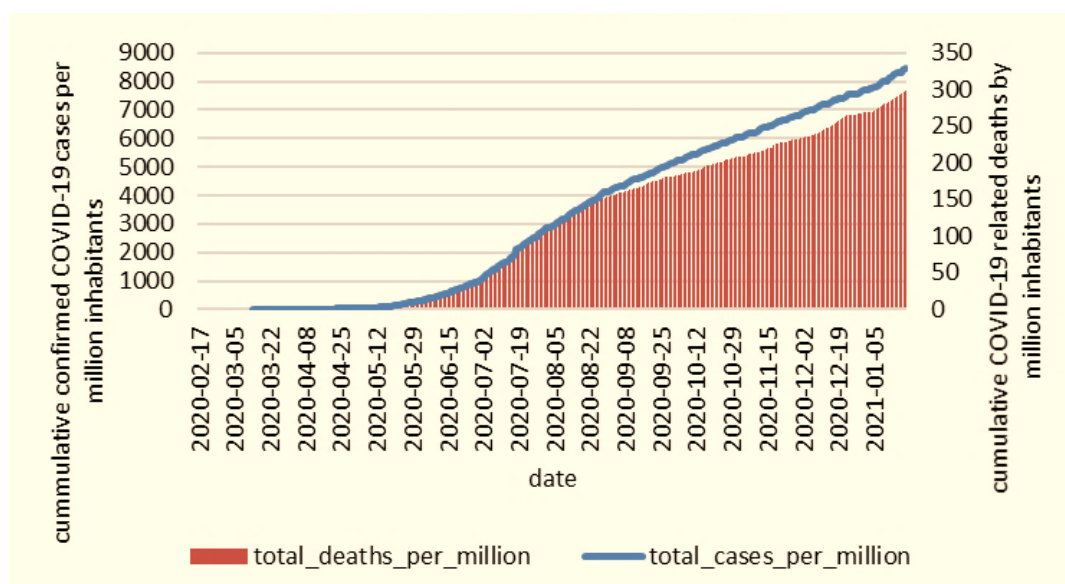
Although the limitation in accessing reliable and sound data for some indicators makes it too early to conclude on direct clear-cut causality between the levels of food insecurity and the pandemic in Guatemala, the information reported suggests that disruptions occurred, but at a less severe level than foreseen, which may be due to a mixed effect of the support policies implemented by the government during the outbreak and, particularly, the reorganisation of initiatives conducted in the country by international organisations and donors, which targeted their actions on vulnerable populations with food insecurity risks aggravated by the pandemic. The COVID-19 crisis may reignite interest in social protection policies and government welfare support as instruments to protect the food security of poor households facing catastrophic shocks. International organisations and donors can be instrumental in generating synergistic effects when reshaping their national/regional programmes to share facilities and capabilities in support of governmental policies. During the COVID-19 pandemic, the support given to the Ministry of Agriculture, Livestock and Food, to the Ministry of Social Development, to the Ministry of Education, to the Ministry of Public Health and Social Assistance, as well as to the National COVID-19 Response and Recovery Programme was understood to be a game changer by stakeholders.

Introduction

Guatemala faces a double burden of malnutrition, with the coexistence of stunting, wasting and micronutrient deficits on the one hand, and overweight and obesity on the other, the latter associated with non-communicable diet-related diseases (NCDs) such as diabetes, hypertension and cardiovascular disorders. According to World Bank data¹, Guatemala has the 6th highest rate of chronic malnutrition worldwide and the highest in the Latin America and Caribbean region. As 59% of the population live below the poverty line, lacking stable access to food, chronic childhood malnutrition (and stunting) affects 47 % of all children under-5 (the number is even higher in indigenous children, reaching 58%). At the same time, Guatemala is experiencing a rapid increase in overweight and obesity, mainly owing to unhealthy habits associated to diet transitions and urbanization: increased intake of cheap energy-dense foods high in fat and sugars and increased physical inactivity due to sedentary behaviour in most urban work. Ethnic disparities and sociocultural barriers in accessing basic services disproportionately affect indigenous groups, which, in Guatemala, represent more than half of the population (2). According to the latest official country data (2014/2015), more than half of the adult population is overweight or obese² and this has become a major health challenge. Under this context, with the advent of the COVID-19 pandemic, many organizations were concerned that food vulnerabilities could be exacerbated.

The first confirmed case of COVID-19 in Guatemala was reported on 13th March 2020. On 20th January 2021, the cumulative incidence accounted for 8,446 confirmed infections per million inhabitants (Figure 1), which corresponds to a total of 151,324 cases detected in the country (3). However, the real burden of disease is difficult to assess as results are highly dependent on the testing strategy.

Figure 1: Evolution of the cumulative number of confirmed cases and deaths due to COVID-19 per million inhabitants in Guatemala as of 20th January 2021.



Source: extrapolation of data from the Johns Hopkins University CSSE COVID-19 (3)³

¹ <https://www.worldbank.org/en/country/guatemala/overview>

² 45.6 percent of the total population of women are overweight and 14.9 percent are obese while 39.2 percent of the total population of men are overweight and 26.7 percent are obese (disaggregated data on overweight and obesity is not available for children). WFP and United Nations Economic Commission for Latin America and the Caribbean, Institute of Nutrition of Central America and Panama and Ministry of Public Health and Social Assistance. 2020. El Costo de la Doble Carga de la Malnutrición: Impacto Social y Económico: Guatemala. (publication pending; retrieved from WFP Guatemala country strategic plan (2021–2024)).

³ Data available from: <https://ourworldindata.org/coronavirus/country/guatemala?country=~GTM>

To monitor the evolution of the pandemic in the country, a dashboard (4) was developed by the Ministry of Public Health and Social Assistance's Department of Epidemiology in collaboration with the Pan American Health Organization/World Health Organization (PAHO/WHO) and is daily updated with relevant data.

Although the impacts of the COVID-19 pandemic and government response measures adopted are not yet fully understood, it is clear that negative effects were introduced in the economy and have aggravated an already precarious food security and nutrition situation for hundreds of thousands of vulnerable people in Guatemala. Economic activity contracted 11.8 % between February and April 2020 and, by the end of 2020, the COVID-19 pandemic had halted three decades of continuous domestic economic growth (5). Estimates from the World Bank High-Frequency Survey conducted in Guatemala to assess the impacts of the COVID-19 crisis show that national employment rates fell from 77 to 66% between May and July 2020 during generalised lockdowns, affecting more than 800,000 jobs. Many more retained their jobs, but with lower salaries. Drops in family income were reported by 7/10 households surveyed (6).

While dealing with the negative impacts of the pandemic, Central America was severely affected by the hurricane season, with Category 4 Hurricane Eta at the beginning of November 2020, followed by Category 5 Hurricane Iota about two weeks later, affecting a total of about 1.2 million people in the North and North-East regions of Guatemala (7). This situation occurred at the onset of the new planting season, damaging 119,913 hectares of cultivated land, causing significant harvest losses and impacting crop production (mainly beans, coffee, fruits, maize and vegetables), as well as artisanal fishing. The livestock sector has also been affected, with about 126,812 animals lost and about 4,432 families affected in Alta Verapaz and Quiché (7).

The COVID-19 pandemic and its effects on food and nutrition security of vulnerable populations have created an immediate need for timely information to help monitor and mitigate the nutrition and food systems impacts of the crisis. For this purpose, the Nutrition Research Facility gathers and analyses indicators on food and nutrition security and their trends in selected countries. This is complemented by an up-to-date overview of containment measures and policy responses. Together, this information will help draw lessons on how interventions and policies can be implemented to mitigate the negative effect of the COVID-19 pandemic on diets and nutrition.

1. Methods

The systematic literature review carried out on documented effects of COVID-19 on diet quality and nutritional status of children under-5 and women in low- and middle-income countries provided the groundwork for this case study⁴. Firstly, peer review articles were searched on MEDLINE (Pubmed), AGRICOLA (AGRICultural OnLine Access), Scopus and Web of Science databases using query: "Guatemala" AND "covid-19" AND "nutrition". For efficiency purposes, gray literature search was conducted by screening relevant reports, analysis and primary data from pre-set list of institutions (presented in [Annex 1](#)). The institutions and websites were selected based on their activities in monitoring the evidence-based impacts of COVID-19 on nutrition and food security, publishing sound evidence-based analysis or conducting web-screening and gathering evidence on this subject. Governmental Guatemalan official websites were also searched. Primary data was used to compute Food and Nutrition Security analyses.

Secondly, to ensure that most relevant reports or information sources were included. Google searches and RSS feeds integrated the systematic review search strategy (search strings reported in [Annex 1](#)). Other sources of information were assessed, using snow-ball methods. The quality of policy-related information retrieved from the web, was assessed by checking their veracity against three renown reliable sources: IFPRI COVID-19 Policy Response Portal (8), Our World in Data (3), and the Oxford COVID-19 Government Response Tracker (9).

⁴ The complete methodological approach is documented in a forthcoming report "Impact of COVID-19 pandemic on nutrition indicators" conducted by the Nutrition Research Facility.

Finally, an early draft of the report was shared with selected stakeholders and experts based in Guatemala who have specialized knowledge on food and nutrition security and agriculture (list of the stakeholder institutions contacted is presented in [Annex 2](#); see also the acknowledgements section) asking for possible additional data, and comments and contributions⁵. This process helped assess the completeness and validity of the retrieved information and evaluate the analysis.

2. Government Containment Measures

The Government of Guatemala took swift actions to contain the virus and prevent transmission, through widespread public health and movement restrictions measures common to most countries⁶. On 5th March 2020, the government of Guatemala declared a national state of emergency (*Estado de Calamidad Pública*) (*Decreto Gubernativo 05-2020*, ratified by the Congress of the Republic - *Decreto Legislativo 8-2020*), before Guatemala reported its first case on 13th March 2020, which was extended up to six times, providing the legal framework to implement several provisions to counter the effects of the pandemic. On 14th March 2020, the Government suspended all school classes and ordered most public and private workplaces to close, with exceptions for healthcare and emergency providers, and workplaces related to public safety and security. During this period, public transport services were also restricted. On 22nd March 2020, the government declared a “shelter in place” order, suspending the rights of movement between 4:00 p.m. and 4:00 a.m. Furthermore, the borders and airports were also closed. Contact tracing has been implemented to put under observation persons that may have been in contact with confirmed cases of COVID-19. In addition, “quarantine under supervision” was adopted in some instances, under which people who may have been infected were quarantined at home under the supervision of health personal (10). In March 2020, the Ministry of Public Health and Social Assistance defined a “Plan for the prevention, containment and response to COVID-19 cases in Guatemala” in alignment with the COVID-19 Strategic Preparedness and Response Program (SPRP) developed by the WHO. Authorities have conducted a needs assessment and identified critical areas that need to be strengthened to deal with the COVID-19 emergency in order to ensure the provision of health care services. As reported in the IFPRI portal (8), (11), several governmental policy responses targeting business were implemented⁷. With the potential impact on food security and nutrition outcomes, we emphasised the following:

- Restrictions on farming: On 27th August 2020, social distancing in agriculture was encouraged by avoiding groups of more than 10 people.
- Restrictions on informal markets: From 18th to 21st May 2020, open-air markets, supermarkets and convenience stores openings were restricted to Mondays, Wednesdays and Thursdays, under predetermined hours. On 27th August 2020, restrictions to entry for the elderly and high-risk individuals in informal markets were implemented with neighbourhood coverage.
- Restrictions on formal markets: From 23rd March to 12th April 2020, grocery stores were advised to close before curfew. From 18th May to 26th July 2020, supermarkets, convenience stores, grocery stores, small village shops, and outdoor markets were permitted to open. The frequency and time during which markets could operate varied according to successive revision of the measures. On 27th July 2020, it was announced that the elderly and high-risk individuals would be allowed in supermarkets only at specific hours.

⁵ Consultation took place between 29th January and 21st February 2021. Stakeholders were asked to react to the following three questions: i) Are you aware of other data or analysis on the effect of COVID-19 pandemic on diet and nutrition outcomes in Guatemala?; ii) Are you aware of other programmes/policies set up to mitigate this effect? ; iii) Have you any other comments regarding the content of the case study?

⁶ An overview of containment measures can be found in: IFPRI. COVID-19 Policy Response (CPR) Portal. Available from: <https://www.ifpri.org/project/covid-19-policy-response-cpr-portal>

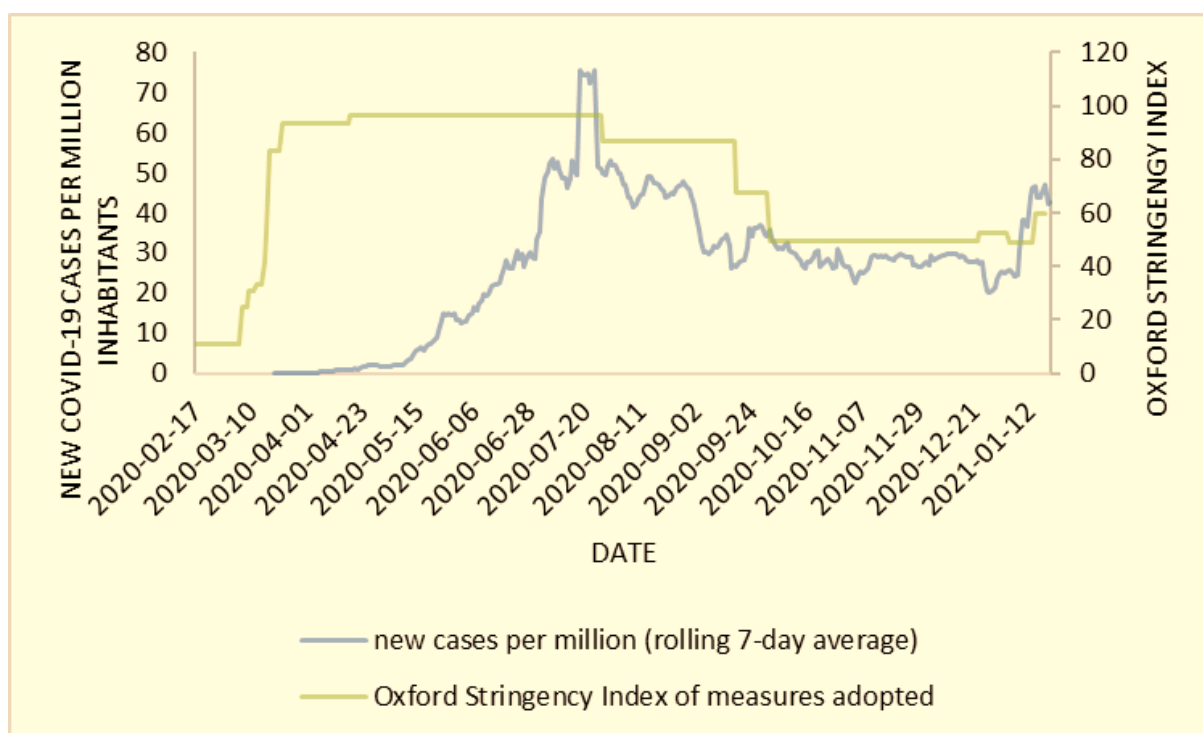
⁷ On 23rd August 2020, a dashboard was launched defining guidelines and regulations for relevant sectors, including transport, industry, agriculture and livestock, restaurants, hotel or tourism, according to the approved COVID-19 emergency health alerts system (Ministerial Agreement 215-2020)

- **Restrictions on other services:** Public and private sector labour suspensions initiated on 13th April 2020 and consecutively extended agreed on exceptions for specific industries and utilities whose activities are essential, including food production. From 18th May to 8th June 2020, cooperatives and agricultural and ranching businesses could operate from 5:00 a.m. to 5:00 p.m., Monday to Friday.

In late September 2020, the government withdrew the State of Calamity and announced a recovery plan to support the re-opening of the economy. As of October 2020, a fully-fledged reopening has been in order whereby all commercial and other activities can operate with some restrictions on physical distancing, partly affecting their capacity (12).

The Oxford Stringency Index (9) is a composite computation based on nine indicators of political response measures, including school closures, workplace closures, and travel bans, in the sub-region with the strictest response level, rescaled to a value from 0 to 100 (100 = strictest) to provide a quantitative estimate of the rigidity of government response to the coronavirus pandemic⁸. Figure 2 shows that in Guatemala the strictest level of the containment measures were adopted promptly in response to the first case confirmed in the country, but were insufficient to avoid the peak of new daily cases, which was registered on 18th July 2020 with 236,275 new cases per million inhabitants. From the second half of July 2020 on, the strictness of the measures accompanied the evolution of new cases.

Figure 2: Strictness levels of government containment measures in response to the evolution of the new COVID-19 cases detected in Guatemala, as of 20 January 2021



Source: internal. This index does not reflect the efficacy of these closures or popular compliance with them. Data on daily confirmed COVID-19 cases: Johns Hopkins University CSSE COVID-19; data on the government stringency index: (9). All data were obtained in the Our World in Data portal (3).

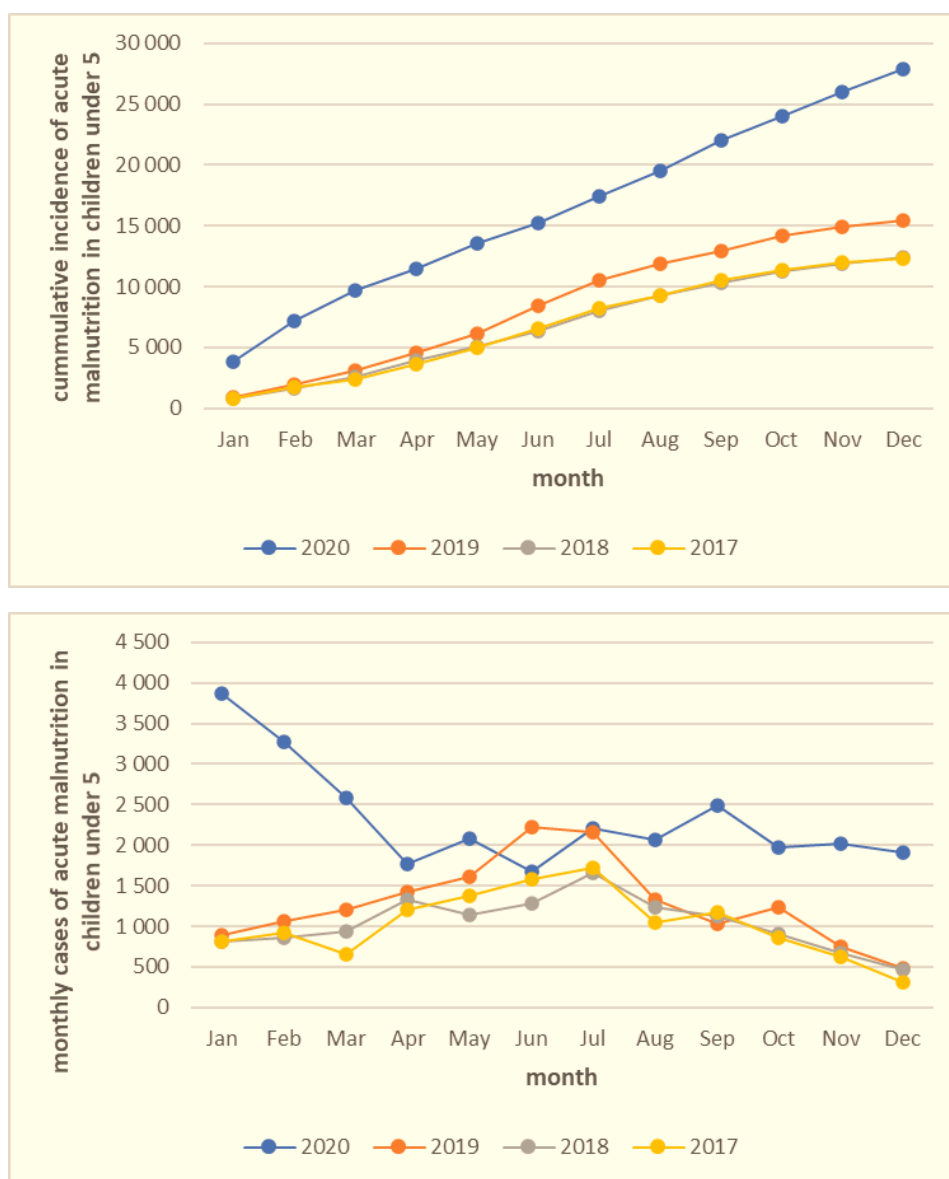
⁸ Data available from: <https://www.bsg.ox.ac.uk/research/research-projects/coronavirus-government-response-tracker#data>

3. Food and Nutrition Security Indicators

Nutritional outcomes

Some international organisations working in Guatemala flagged a significant increase in acute malnutrition in children under-5 and attributed the evidence to COVID-19 consequences (e.g. (13)). As seen in Figure 3 (top panel), cumulative numbers tripled with more than 15,000 cases by the end of May 2020, compared to the same period in 2019. However, such an analysis overlooks the contribution of a 4-fold higher incidence of monthly cases reported in the country before the first COVID-19 case had been detected and government containment measures implemented (Figure 3, bottom panel). Given this time sequence, the higher total official cases of cumulative acute malnutrition in children under-5 observed in 2020 in comparison with the three previous years (Figure 3; top panel) cannot be attributable to the impact of the COVID-19 pandemic.

Figure 3: Cumulative incidence (top panel) and Evolution of total cases (bottom panel) of acute undernutrition in children under-5 registered in Guatemala in 2017, 2018, 2019 & 2020



Source: own elaboration using data published by the Ministry of Public Health and Social Assistance of Guatemala⁹

⁹ Available from: <http://apps.siisan.gob.gt/salasituacional/default.aspx>

The increase in the official monthly cases observed in 2017, 2018 and 2019 between April and August is attributable to the annual “hunger season” in the region. Strikingly, this effect was not observed in 2020, which may be due to additional support to poor households under the framework of the measures implemented to face the negative impact of COVID-19 on nutrition, or a releasing of government restrictions (Figure 3; bottom panel). However, it is important to note that the reported increase of acute undernutrition in children under-5 from 2019 to 2020, both in the January-March and in the August-December periods, must be interpreted with extreme caution since, in 2020, a modification was implemented to the system to automatically transfer the primary data to the web system and the information was published before verification by the Health services because of the country crisis situation due to COVID-19. The new system allows greater detection of children subject to acute malnutrition, delivering more realistic numbers, although hampering comparisons with previous estimates. Moreover, it is important to mention the action of nutrition brigades since about 70% of the acute malnutrition children they detected had not been recognised by the health services¹⁰. Therefore, a cause-effect relationship of acute malnutrition and the COVID-19 pandemic in Guatemala cannot be unambiguously established¹¹.

Food insecurity

According to the Humanitarian Needs Overview, before the start of the pandemic some 2.3 million people were food insecure nationwide (14)¹² (of these 0.5 million were classified as severely food insecure (15)), 46.5% of the under-5 children are chronically malnourished (16) and 2/3 of the population live on less than US\$2 per day (17). Most governmental measures adopted by the government to contain the pandemic are expected to cause direct or indirect impacts on food security and on nutrition outcomes, affecting in particular the most vulnerable households, particularly in rural areas. Restrictions in access to formal and informal markets coupled with a decrease in the purchasing power of households as result of closure of several economic activities and the reduction of remittances, a reduction of the food consumption, in particular due to higher costs of micronutrient-dense foods, compromised the quality of diets and increased the risk of aggravating malnutrition in its multiple dimensions (18).

Evolution of acute food insecurity

The Integrated Phase Classification for Acute Food Insecurity (IPC AFI) provides differentiation between five levels of severity of food insecurity, namely: Phase 1) Minimal/None, Phase 2) Stressed, Phase 3) Crisis, Phase 4) Emergency, and Phase 5) Catastrophe/Famine¹³. In Guatemala, the percentage of the households in need of urgent action, as disclosed by classification in Phase 3 or above, increased from 15-16% in the pre-pandemic period to 22-23% during the pandemic, at the expense of a reduction in about 15-20% of the population classified as food secure (Table 1). This classification is computed using multidimensional data collection and analysis, addressing drivers such as seasonal calendars, rainfall, food prices, rapid food-security assessments, etc., hence, provides a convenient identification of risks that may be concealed by individual analyses.

Coping strategies to face food insecurity

The results collected by the Near Real-time Food Security Monitoring established in the country by the World Food Programme (WFP) show that, during COVID-19 times, negative coping strategies or crisis or above-crisis levels adopted by food-insecure households decreased from May 2020 to January 2021 (

¹⁰ Maria Claudia Santizo (personal communication)

¹¹ According to preliminary data relating to 2020 made available on the 10th February 2021, 243,665 children under-5 has been evaluated, of which 943 were categorized with moderate or severe acute malnutrition, assessed through Mid Arm Circumference (MUAC). The diagnosis based on clinical data disclosed 339 children with kwashiorkor, 93 children with marasmus and 38 children with marasmic-kwashiorkor (27)

¹² Citing EFSA (2019)

¹³ For technical information about IPC classification see (67)

Table 2), which can be associated with mixed effects from the support measures put in place in the country to respond to the COVID-19 pandemic and the decrease of the stringency index, replacing mobility and access to markets. A decrease was reported in four out of the five most relevant food based coping strategies indicated during the interviews. The reduction was most significant for the strategies that mostly impact food consumption and the nutritional status of the individuals, namely reduction of the number of meals and limitation of portion sizes. The exception is the increase in the reliance on less expensive food, which increased during the same period.

Table 1. Evolution of the IPC Acute Food Insecurity Analysis from November 2018 to March 2021 in Guatemala.

IPC Phase	Nov 2018 - Feb 2019	Dec 2019 - Mar 2020*	Aug 2020 - Oct 2020	Nov 2020 - Mar 2021**
Phase 1	56%	51%	35%	38%
Phase 2	28%	34%	43%	39%
Phase 3	13%	12%	19%	20%
Phase 4	3%	3%	3%	3%
Phase 5	0%	0%	0%	0%
People in high levels of acute food insecurity (IPC Phase 3 or above) - in need of urgent action	16%	15%	22%	23%

* addressing only rural populations; ** 2nd projection (updated in January 2021). Own elaboration using data extracted from the Integrated Food Security Phase Classification portal¹⁴.

Table 2. Changes in the percentage of people (May 2020) or households (HH) (October 2020 and January 2021) using crisis or above-crisis-level food-based coping strategies during the COVID-19 pandemic in Guatemala.

	25 May 2020	12 October 2020	18 January 2021
Percentage of households adopting negative coping strategies (crisis or above crisis level)	41.3 %	35.1 %	26.9 %
Relevant food based coping strategies:			
▪ Rely on less expensive food	78.8 %	84.5 %	83.4 %
▪ Limit portion size	64.6 %	60.4 %	50.6 %
▪ Reduce number of meals	55.6 %	51.7 %	38.8 %
▪ Borrow food	38.2 %	33.6 %	34.3 %
▪ Restrict adult's food consumption to feed children	32.0 %	27.5 %	23.0 %

Data was obtained by WFP via phone interviews and is collected on a rolling basis and processed daily. Daily updates represent a snapshot of the current situation over the past 28/30 calendar days with a time lag of 2-4 days to ensure data quality. Own elaboration using data extracted from the Hunger and COVID-19 Weekly Snapshot for Guatemala in 5th June 2020, 16th October 2020 and 22nd January 2021).

On this topic, it should be noted that no information about the nature of the dietary shift was collected, hampering the drawing of conclusions about changes in diet quality because of the COVID-19 pandemic. The results should be carefully interpreted since we do not have access to pre-COVID baseline data collected using comparable methodology and sample populations. Nonetheless, data in Table 2 includes results from coping strategies adopted during the period of curfew and mobility restriction and also after the restrictions had been lifted and support programmes had been implemented, enabling estimations of their impact.

¹⁴ Available from: <http://www.ipcinfo.org/>

Diet quality

People with insufficient food consumption refer to those with poor or borderline food consumption, according to the Food Consumption Score (FCS)¹⁵. We compared data extracted from the Hunger and COVID-19 Weekly Snapshot for Guatemala¹⁶ in three dates during the COVID-19 pandemic: 5th June 2020 (under mobility restrictions), 16th October 2020 and 22nd January 2021 (after restrictions had been released and most support programmes implemented). WFP's food security remote surveys via live telephone interviews showed that the number of people with insufficient food consumption in the country decreased during May 2020 from nearly 3.5 million to below 3 million in the second week before rising to 3.6 million in June, reaching nearly 4.5 million in mid-July. After that, the number of people with insufficient food consumption declined progressively back to 3 million people in October 2020 and 1.8 million in January 2021¹⁷. This observation can be associated with the decrease in the stringency index of containment measures and/or the benefits of governmental and institutional food assistance. However, it should be noted that this score provides little evidence about diet quality. According to preliminary results of a survey on eating habits and lifestyle before and during the Coronavirus (COVID-19) pandemic in Guatemala (Astrid Sánchez, Sophia Martínez, Edna Nava, Mónica Silva and Karina Aguilar; unpublished results)¹⁸, 53.8% of the respondents considered that their diet was different before the contingency. During the confinement, an 18% decrease in consumption of food not prepared at home for three or more days a week was reported. Likewise, the percentage of respondents that never buy fast food at home increased 10% with the contingency. However, the survey disclosed only a small 4.3% decrease in the consumption of foods such as fried foods, cold cuts, pre-packaged dishes ready to heat and serve for two or more days a week and a 6.2% decrease in consumption of commercial desserts or sweets two or more times a week. No significant changes were observed in the weekly consumption of sugary drinks due to the pandemic. Very small fluctuations, below 3%, were reported in the daily consumption of fruits, cooked or raw vegetables, legumes, fish and meat, and milk and dairy. Globally, 42.5% of respondents declared that their diet was not different before the contingency, while 31.9% ate more industrialized food and fast food and 22.4% ate more natural foods and vegetables. Interestingly, almost half of the respondents stopped consuming alcoholic beverages. However, a parallel evaluation made by the FAO on 1,831 family farming households in July 2020, reports that 86% of households had reduced meat consumption, 53% reduced milk consumption, 49% reduced fruit consumption. The consumption of maize, beans and local herbs increased in these households (1).

¹⁵ The FCS is a composite score based on dietary diversity, food frequency, and relative nutritional importance of different food groups. Information is collected from a country specific list of food items and food groups and the interviewed is asked about frequency of consumption (in days) over a recall period of the past 7 days.

¹⁶ WFP's Hunger Monitoring Unit (previously known as mVAM) conducts continuous food security monitoring via live telephone interviews. Data is collected on a rolling basis and processed daily. Daily updates represent a snapshot of the current food security situation over the past 28/30 calendar days, with a slight time lag of 2-4 days to ensure data quality. More information can be found in the Methodology and Glossary sections on Hunger Map LIVE, available from: hungermap.wfp.org

¹⁷ Information comes from the HungerMap LIVE: Hunger and COVID-19 Weekly Snapshot (5th June 2020, 16th October 2020 and 22nd January 2021). These dates were used in our analyses because documentation was publicly available. It was not possible to choose additional periods due to lack of primary data as the COVID-19 Weekly Snapshot only makes available the latest analysis.

¹⁸ Study design: Observational cross-sectional and descriptive study (n=1,753) through an online survey that was prepared on the Google Forms platform, which was disseminated to the Guatemalan population during confinement by COVID-19 through the social networks WhatsApp and Facebook and emails to key contacts for wider diffusion to professional associations, nutrition associations, universities, private schools and other institutions. Self-administered via the internet to be answered on any electronic device or computer with internet access. It was established as the universal reference: general population between 18 and 75 years of age of both sexes, from any department in Guatemala, in a situation of social distancing / quarantine / self-isolation from the COVID19 pandemic of at least 7 days during the period from 4th May to 29th June 2020 (9 weeks of confinement in Guatemala), with access to electronic devices or computers with internet access. (Astrid Sánchez, Sophia Martínez, Edna Nava, Mónica Silva and Karina Aguilar; unpublished results).

The high and sustained prevalence of households reporting that they increasingly rely on less expensive food (Table 2) demonstrated that the trend towards less healthy foods is not straightforward, and also that some bias towards the less vulnerable populations is expected to occur in the survey on eating habits and lifestyle before and during the Coronavirus by Sánchez et al., as it was answered only by those with electronic devices or a computer with internet access and access to social media. This can explain the difference between changes in meat, milk, dairy and fruits when compared with the FAO evaluation targeting rural households, suggesting a differential socioeconomic impact of the pandemic in diet quality.

Food access

The main causes result from loss of livelihoods due to job and income losses, a decline in remittances from abroad, increased food prices and difficulties in accessing markets. Restrictions on mobility prevented the 70% of the population that live day-by-day from their sales in the informal economy from being able to generate the minimum livelihood needed, or to feed themselves (1). The shutdown periods imposed on the hospitality industry, the closure or reduced operation of marketplaces and the limitations on the movement of people and goods within the country, together with the export-oriented characteristic of Guatemala's agriculture (which generates about 45% of the national agricultural revenue), placed agricultural jobs under pressure, especially for informal smallholders, and led to surplus produce of specialised harvests and livestock, much of which is uncommon or too costly for local consumption (5).

It should be noted that, even if indirectly, several broad political measures also affected the nutritional security of the populations. Among the most significant impacts in Guatemala is the disruption of public transportation which left hundreds of thousands of Guatemalans from rural areas and small villages without communications resulting in hiked food prices and scarcity. Likewise, with the closure of schools, a significant percentage of families were at risk of failing to secure the, often, single daily meal for their households (19).

Food accessibility

From May 2020 to January 2021, the percentage of households that reported challenges in accessing markets or grocery stores decreased by nearly 10% but still, in January 2021, half of the families indicated that they were facing problems (Table 3). The most constricting barriers identified in May 2020 were related to the government-imposed restrictions on movement and commerce and with security concerns, including a considerable decrease in transport to acquire and purchase food (20).

Table 3. Changes in the number of households (HH) reporting challenges accessing markets/grocery stores in May 2020, October 2020 and January 2021 in Guatemala.

	25 May 2020	12 October 2020	18 January 2021
Percentage of households reporting challenges in accessing markets/grocery store	60.3 %	55.1 %	50.0 %
Top barriers identified in each date:			
▪ Travel restrictions	22.3 %	15.5 %	8.5 %
▪ Markets/grocery stores closed	9.7 %	-	-
▪ Markets/grocery stores too distant	9.0 %	7.4 %	4.9 %
▪ Security concerns	6.3 %	-	-
▪ Concerned about going out due to the outbreak	2.7 %	-	-
▪ Lack of money	-	17.5 %	26.0 %

Data was obtained by the WFP via phone interviews and is collected on a rolling basis and processed daily¹⁹. Daily updates represent a snapshot of the current situation over the past 28/30 calendar days with a time lag of 2-4 days to ensure data quality. The impact of COVID-19 cannot be fully ascribed due to the lack of baseline data previously to the pandemic. (- means no indication as top barrier). Own elaboration using data extracted from the Hunger and COVID-19 Weekly Snapshot for Guatemala on 5th June 2020, 16th October 2020 and 22nd January 2021.

¹⁹ More information can be found in the Methodology and Glossary sections on Hunger Map LIVE, available from: hungermap.wfp.org

As the restrictive measures were lifted and further to the October 2020 fully-fledged reopening of commercial activities, the percentage of households reporting barriers steadily decreased from October 2020 to January 2021. Conversely, lack of money was not among the top 5 barriers reported in May 2020 but increased to be the most significant barrier in October 2020 and January 2021 (Table 3). This suggests an aggravation in the poverty levels of the population. Similarly to the analysis of the evolution of coping strategies to face food insecurity, data in Table 3 reports barriers identified during the period of curfew and mobility restriction, and also after the restrictions had been lifted and support programmes had been implemented, enabling estimations of their impact.

Food affordability

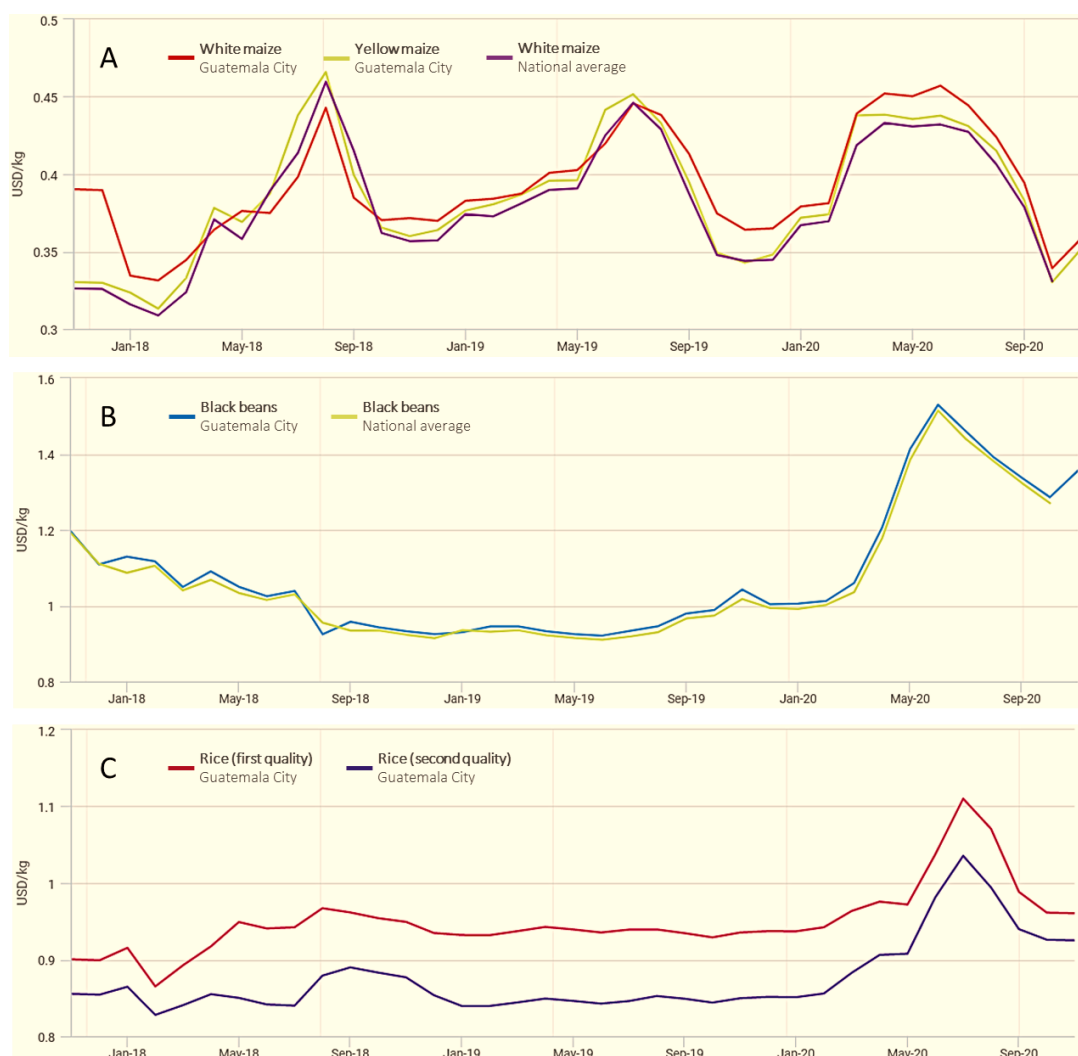
Restrictions to local and international mobility were responsible for disruptions along the food chain. In the Guatemalan domestic market, significant increases in the price of staple foods such as maize, beans or rice (Figure 4) were registered with the advent of the quarantine period even when food transportation was allowed and most markets were functioning, often attributed to hoarding, increased demand and low domestic supply, the latter due to disruptions in food import flows (18). Figure 4a shows that, for maize, the annual peak in price, although of similar magnitude, was observed early and was sustained for a longer period when compared to the historical data from previous years. That explains the 18.3% increased average price reported for June 2020 when compared with the same month in the previous 5 years (1). Conversely, both black bean and rice prices peaked in 2020, showing a distinct pattern compared to previous annual fluctuations (Figure 4B and C). One should note that, to ensure the necessary supply of the most essential food items, the Government issued the 46-2020 Government Agreement on 21st March 2020 to authorise imports free of tariff quotas for white maize and rice (1). A temporal association of the price boost can be established with the onset of the COVID-19 pandemic, declining afterwards (Figure 4), possibly as the result of the implemented government measures.

The increased price of these staples registered in November 2020 (after consecutive declines in previous months) (Figure 4A) also relates to damages to crops and infrastructure caused by hurricanes Eta and Iota. These events led to reduced supplies from the key northern agricultural region because trade flows were hampered by infrastructure damage. The rise in prices was more pronounced in beans since the main harvest was about to start in December 2020 (Figure 4B) and hence was more severely impacted by the hurricanes (21)²⁰. Black bean supplies were reduced in the markets due to crop losses in the key eastern producing areas and due to lack of transport as the result of damaged road infrastructure (21).

In a complementary study by the FAO, monthly food inflation in 2020 was compared to the distribution of monthly food inflation over the past 20 years, namely for the period March and April 2000-2019, in selected Latin American countries, including Guatemala. In Guatemala, as in other countries, food prices were growing at an accelerated rate for the two months (22), despite inflation remaining within the limits set by the Bank of Guatemala (1). In 2020, prices were over 30% higher than in 2019, reflecting the upsurge in the March-June period when the retail demand soared amidst the COVID-19 pandemic. In addition to staple foods, several other products were sold at higher prices, with an important impact on the cost of the basic food basket, including nutritious items such as guisquils, tomatoes, potatoes, eggs, vegetables and legumes (1). In fact, the evolution of the cost of the basic food basket in Guatemala between October 2017 and November 2020 shows that the prices rose from the advent of the pandemic in March 2020, peaking in July 2020 and recovered in September 2020 to values closer to those historically observed in the previous two years (Figure 5).

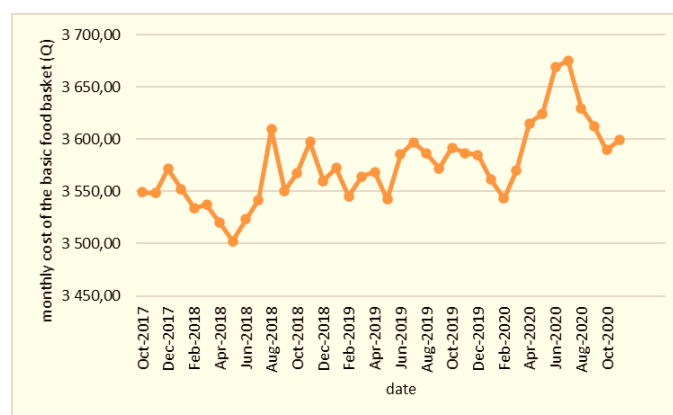
²⁰ Available from: <http://www.fao.org/giews/food-prices/regional-roundups/detail/en/c/1364080/>

Figure 4: Annual fluctuation of the wholesale prices of key staple foods Guatemala (A) maize, B) black beans and C) rice) at national level and in Guatemala City markets, between November 2017 and November 2020



Own elaboration using data from SIMMAGRO - Sistema Regional de Monitoreo de Mercados Agrícolas and the FAO's Food Price Monitoring and Analysis (FPMA) tool²¹ for analyses and plotting). It should be noted that national level data and Guatemala City data might obscure regional and rural-urban nuances.

Figure 5: Evolution of the cost (in quetzals) of the basic food basket in Guatemala, between October 2017 and November 2020



Own elaboration using data from the Dirección de Índices y Estadísticas Continuas, Instituto Nacional de Estadística – Guatemala²².

²¹ Available from: <https://fpma.apps.fao.org/gIEWS/food-prices/tool/public/#/dataset/domestic>

²² Calculated dividing the current price of the product and its measure unit by the amount (in grams) consumed per family (4.77 members). Available at: <https://www.ine.gob.gt/ine/canasta-basica-alimentaria/>

Disturbance in health and nutrition services

According to the HungerMap LIVE: Hunger and COVID-19 Weekly Snapshot data, the percentage of households reporting challenges in accessing health services increased from 31.2% in June 2020 to 50.5% in October 2020 and 53.1% in January 2021, reflecting losses in livelihoods, the restrictions to mobility imposed by the government, and the pressure in the health system due to COVID-19 response. The top barriers identified by the respondents were the travel restrictions, distance to health services, closing of health services, denied access to health services and lack of money.

The United Nations' World Health Organization (WHO) and UNICEF reported violations of the International Code of Marketing of Breastmilk Substitutes in Guatemala during the COVID-19 pandemic. Mothers and new-born children were separated without clinical reasons in several health services and feeding with substitutes was promoted instead of breastfeeding. Protection of breastfeeding programs, vitamin A supplementation and home fortification with micronutrient powders decreased by 25-50% in the coverage of health services while the drop was in the 50-75% range in measures such as protection of appropriate complementary feeding, deworming prophylaxis, nutrition programs for adolescent girls and boys, nutrition support for pregnant and lactating women, and early detection and treatment of child wasting/severe acute malnutrition (23).

Moreover, according to the UNICEF "Tracking the situation of children during COVID-19" dashboard²³ released in September 2020, when compared with 2019, 6 services were disrupted, namely Home fortification with multiple micronutrient powders (MNPs), Large-Scale Food fortification (salt iodisation or fortification of edible oil or wheat flour), Nutrition support for pregnant and lactating women (nutrition counselling and weight gain monitoring), Promotion of nutritious and safe diets for young children (6-23 months), Protection and promotion of breastfeeding programmes, and Vitamin A supplementation for children 6-59 months. The main causes of this nutrition service or use disruption were attributed to interruption in community engagement activities, lockdown restricting user mobility, lack of transport, and unavailability of key supplies – specifically stock out of commodities for the management of acute malnutrition. Active searches of acute malnutrition in prioritised communities, with treatment of wasted children without complications with one Ready-to-use Therapeutic Food (RUTF) product, and provision of MNPs for children 5-59 months through community platforms, were then implemented to ensure that the management of acute malnutrition were sustained.

4. Government Policy Responses

At the sub-regional level, Guatemala was part of (20):

- an "ad hoc group" that agreed on measures in which "the ministers and secretaries of agriculture, livestock, fisheries, food and rural development (...) inform public of measures they had taken to ensure the supply of sufficient, safe and nutritious food";
- the Central American Integration System (SICA - *Sistema de la Integración Centroamericana*) that agreed on "recommendations related to food and nutritional security, such as monitoring indicators for the most vulnerable families, activation of social protection strategies and a reactivation strategy in support of families dependent on agricultural and non-agricultural subsistence activities".

During the whole pandemic management period, production, transport, distribution and sale of food throughout the country were declared essential services.

²³ This dashboard is based on quarterly updates of recent data collection efforts from UNICEF country offices drawing on best available sources in each country, including administrative data or representative survey data collected in the last 3 months; or where necessary, extrapolations from reliable localized quantitative and/or qualitative reports. Estimates may not accurately represent the full national response to the COVID-19 pandemic. Available from: <https://data.unicef.org/resources/rapid-situation-tracking-covid-19-socioeconomic-impacts-data-viz/>

In June 2020, the Presidential Commission against COVID-19 (COPRECOVID) was established. COPRECOVID was chaired by the Minister of Public Health and composed of the Ministry of Agriculture, Livestock and Food (MAGA), the Ministry of Social Development (MIDES), the Ministry of Labour and Social Welfare (MINTRAB), and the Secretariat of Planning and Programming of the Presidency. This commission oversaw the definition of the steps for the economic reactivation process (1)²⁴ and held an important strategic role, notably, through the implementation of a municipal risk grading system that allowed for a controlled, staged reopening following curfews and lockdown.

The National Emergency and Economic Recovery Plan was implemented by the government to counter COVID-19. It is coordinated by the Cabinet for Economic Development encompassing, inter alia, temporary measures targeted to the most vulnerable, including food support and support for grassroots commerce (24).

In Guatemala, 192 governmental policy responses were registered, as reported in the IFPRI portal (11)(8). With impact on food security and nutrition outcomes, we emphasised the following:

Social protection policies

- Food aid: On 21st March 2020, duty-free quotas were set for the import of 200,000 tons of white maize and 152,000 tons of rice, to boost domestic supplies (FAO, 2020e). On 23rd March 2020, the Ministry of Education announced that, due to the closure of schools, local organisations in charge of school feeding programs can use their budgets to purchase and distribute food among households with children part of the programme (Government Decree 6-2020, 7-2020. Ministerial Agreement 825-2020 and Ministerial Agreement (Education) 841-2020). On 5th May 2020, as part of Rural Agriculture Program, a programme was implemented to deliver products from the basic food basket for 30 days (see details in Box 1). On 16th June 2020, the "Temporary Food Support Program" for vulnerable rural households (*Programa Temporal de Apoyo Alimentario por COVID-19*) was launched (25). For this programme, food comes from procurement to local farmers through an agreement with the World Food Programme (WFP) and takes advantage of the SCOPE digital platform for the registration and verification of beneficiaries (see section "Responses of International Donors and Non-Governmental Initiatives" below and Box 1 for details).
- Cash transfers: On 29th March 2020, the government decided to withdraw US\$25.8 million from the emergency fund to support the most vulnerable families with an aid of 1,000 quetzals (US\$129).

Under this context, specific sectorial measures were implemented, including multi-ministerial actions against undernutrition in response to COVID-19. Most programmes were coordinated at national level by the National Food Security and Nutrition Agency (SESAN: *Secretaría de Seguridad Alimentaria y Nutricional*). At the ministerial level, MAGA was responsible for supporting rural areas while MIDES was in charge of providing assistance in urban settings. Details of the programmes are included in Box 1.

Farm policies

Price support to farmers by public procurement: public purchase of foodstuffs from local producers was announced on 18th March 2020 by the Ministry of Agriculture. On 29th November 2020, the government announced a plan to purchase more than 22,000 tons of maize and more than 4,500 tons of beans annually, under the frame of the Economic Recovery Plan. On 2nd July 2020, the government provided the agricultural and livestock sectors with temporary provisions for health measures for the prevention and mitigation of COVID-19 (25).

²⁴ This analysis was made under the frame of the UE-FAO FIRST Programme

Box1. Official programmes implemented in Guatemala in response to risk of food insecurity caused by the measures adopted to contain COVID-19 pandemic

“Peasant Agriculture Programme” (Programa de agricultura campesina): included in the sectoral plan for COVID-19 and coordinated by the MAGA’s Vice-Ministry of the Rural Economic Development. The plan includes four specific actions to support family farmers: i) improved food availability through the implementation of rainwater-based micro-irrigation systems, ii) generation of rural employment through community agroforestry, iii) improvement of the farmers’ economy, through incentives to produce basic grains and vegetables towards food security, and iv) reinforcement of the availability of animal protein.

Food Aid from the Rural Agriculture Programme – distribution of 100 pounds of white corn in grain, 30 pounds of black beans, 3 bottles of vegetable oil, 13 pounds of corn flour and fortified soya beans, 5.5 pounds of sugar fortified with vitamin A, 3 kg of oatmeal, 10 pounds of white rice, 1 pound of iodised salt to vulnerable households in May 2020.

“Temporary Food Support Programme” (Programa Temporal de Apoyo Alimentario por COVID-19): this program distributes food commodities to food-insecure households across the country, benefiting over 1 million families. Each endowment consists of 100 pounds of white grain corn, 30 pounds of black beans, 13 pounds of cornmeal and fortified soya beans, 10 pounds of white rice, 6.6 pounds of oats in flakes, 5.5 pounds of vitamin A fortified sugar, 1 pound of iodine salt and 3 bottles of 800ml vegetable oil. It is estimated that the ration equals 1900 kilocalories, enough to support an average family of five members for 30 days.

“Food Support and COVID-19 Prevention Programme” (Programa de Apoyo Alimentario y Prevención del COVID-19): redeemable vouchers of GTQ 350 to support vulnerable families with food, including families with children, the elderly, and people with disabilities who are in centres and asylums. Families redeem the coupons in neighbourhood stores, supermarkets and food stores. Since the law stipulates that 50% of food must be purchased from family farmers, producer families strive to include their products in the new baskets. US\$ 91 million programme supported in a single database of families in vulnerable conditions and coordinated by the Ministry of Social Development and the Ministry of Agriculture, Livestock and Food (Decree Number 12-2020, 31st March 2020).

“School Feeding” (Alimentación Escolar) – The Ministry of Education determined to keep the School Feeding Programme operating, guaranteeing the maintenance of at least one meal a day to around 2.5 million elementary and pre-primary students who were affected by the closure of schools due to the COVID-19 pandemic. The Ministry of Education announced on 23rd March 2020 that the local organisations in charge of school feeding programmes could use their budgets to purchase and distribute food among households with children part of the programme. The action encompassed administrative adaptation to ensure that elementary and pre-primary students continue to benefit from school meals during the suspension of classes, with resources transferred to parents’ organisations to buy non-perishable food. Three menus were adapted by the Ministry of Education to provide families with nutritious non-perishable foods (such as beans, rice, cereal, sugar, corn flour, and oil) in sufficient amounts for 15 days. Home deliveries are organized by parent associations who were also purchasing and distributing the food to children’s families. The GTQ 589.9 million governmental budget provided an amount of food corresponding to GTQ 60, to 2.4 million children while not attending school. MINEDUC’s initial decision to replace fresh food with dried food in the first three phases of the programme was an adverse factor faced by small farmers who had been providing locally produced food to schools. In August 2020, the measure was reversed to repurchase some of the products from family farmers, thus enabling delivery of non-perishable food bags and fresh food (1).

“We Will Overcome” kit (Kit Juntos Saldremos Adelante): Single delivery, in April 2020, by the Army of 35 pounds of basic products to the most vulnerable families. The programme includes 200,000 boxes of food prepared (equivalent to US\$ 3.9 million) with the coordination of the Government Centre, public, private and voluntary institutions.

“Soup kitchen and food pantries / Government procurement from domestic farmers” - On 18th March 2020 the National Food and Security Agency of Guatemala announced the implementation of emergency measures coordinated with different ministries, in order to guarantee food and nutrition security in the most vulnerable populations which included continuing with the functioning of 19 soup kitchens (by the Ministry of Social Development) and public purchase of food from local producers (by the Ministry of Agriculture).

Reinforcement of malnutrition diagnosis and intervention policies

In July 2020, the Ministry of Public Health and Social Assistance published the “Guidelines for active search for cases of acute malnutrition and other nutrition-related actions in the context of the COVID-19 emergency” (26). The document was specifically produced to respond to the foreseen aggravation of child undernutrition due to the COVID-19 pandemic, aimed at providing rules to reinforce medical and health teams, giving clear procedures for identifying children under-5 with acute undernutrition in a timely manner, providing treatment for children detected and diagnosed with acute undernutrition during the active search actions, and providing timely follow-up to newborns until they are recovered and incorporated into the preventive health and nutrition actions covered by the standards of care for children under-5. Programme aspects include community prioritisation, logistics, composition of professional teams and needs assessment. According to preliminary data relating to 2020 made available on 10th February 2021, a total of 428,020 children from an assessment of undernutrition conducted in vulnerable regions, benefited from powder micronutrient delivery and 98,535 received vitamin A (27). “The Strategy of the Great National Crusade for Nutrition”²⁵ was launched by the government in January 2020 as a strategy of holding mini conferences at the community level, offering children between 6 to 60 months deworming, micronutrients and vitamin A, plus care for pregnant women, among other initiatives. This initiative was scheduled to be active from 2020 to 2024, starting in July 2020. The donors wanted to provide immediate support and the strategy was “adapted” to the COVID-19 pandemic situation further to searches for active cases of acute malnutrition in children under-5 years. The endeavour was then added to the strategy due to the COVID-19 situation. Although the searches were carried out on an urgent basis, delays occurred due to the lack of protective equipment or clear strategy guidelines, and work only started in August 2020.

5. Food and nutrition security responses of International Donors and Non-Governmental Initiatives

In addition to the efforts of the Guatemala Government in supporting the population in face of the restrictions implemented to contain the COVID-19 pandemic, a wide range of activities were deployed through international partnerships. A number of international donors and non-governmental initiatives operating in Guatemala revisited and adjusted their programmes to support the government in implementing the announced measurements to counter the COVID-19 pandemic (addressed above) and implemented new dedicated activities in support of the population. Most of these organisations supported the government’s policies and efforts both in synergistic and complementary actions. Here we present examples of the main initiatives implemented under this scope. A summary is given in Table 4 and a brief description of the support given by each organisation is then provided.

Support in implementing national policies

World Bank

A COVID-19 High-Frequency Survey was conducted by phone in thirteen Latin American countries including Guatemala (800 calls in HFS Round 1) (28). Data collection included food security and health indicators and spanned over three waves between May and August 2020. Collection periods lasted about ten days per wave on average. A dashboard was launched in November 2020 and contained survey collected in rounds conducted every 4-6 weeks over a period of 12 months. To the best of our knowledge, results from Guatemala are not publicly available. This may be due to ongoing data calibration by the National Statistics Institute (*Instituto Nacional de Estadística*) or harmonisation to match the dashboard data structure, or due to restrictions resulting from data privacy concerns.

²⁵ Gobierno de la República de Guatemala (2020). National Strategy Great National Crusade for Nutrition, 2020-2024. Guatemala. SESAN

Table 4. Summary of the activities implemented in Guatemala by international organisations in support of measures to alleviate the impact of COVID-19 on nutrition outcomes.

Actor	Scope of the activities	Official support to the national government
World Bank	Data collection	COVID-19 High-Frequency Survey - General support; non-specified
World Food Programme (WFP)	Data collection	Collaboration with SESAN to inform implementation of the country strategic plan (CSP) 2021-2024
	School feeding: to enhance the integration into a shock-responsive social protection system, to incorporate emergency preparedness, and to monitor take-home food rations and procurement. Production of nutrition awareness materials.	Support to the Ministry of Education
	Public procurement of food from smallholders and assistance to microenterprises	Support to the Ministry of Agriculture, Livestock and Food and to the Ministry of Social Development
	Screening and assisting undernutrition: identifying and assisting households suffering with acute malnutrition.	Support to the Ministry of Public Health and Social Assistance
United Nations International Children's Emergency Fund (UNICEF)	Price monitoring in markets	General support; non-specified
	Screening and managing undernutrition: training of community leaders, identifying, treatment, micronutrients provision, provision of breastfeeding and maternal nutrition counselling. Establish guidelines for nutritional care.	Support to the Ministry of Public Health and Social Assistance
	School feeding: distribution of non-perishable food. Production of nutrition awareness educational materials.	Support to the Ministry of Education
	Monitoring food contribution actions: donation and distribution	General support; non-specified
Food and Agriculture Organisation (FAO)	Management of the family support (Bono Familia) programme and WASH	Support to the Ministry of Social Development
	Formulating recovery proposals for investment support	National support to the COVID-19 Response and Recovery Programme
Pan-American Health Organisation	Support to vulnerable small farmers: cash transfers to target farming practices, supply of productive inputs and livelihoods assessment	Support to the Ministry of Agriculture, Livestock and Food and to the Ministry of Social Development
	Screening and managing undernutrition: identifying, treatment, training nutritionists and other health professionals	General support; non-specified
United Nations Development Programme (UNDP)	Data sharing and situation analysis	Reactivation of the UN Technical Emergency Team in Guatemala (UNETE)
	Food Assistance: provision of food and cash	Support to the Ministry of Social Development and to the Ministry of Agriculture, Livestock and Food
Action Against Hunger	Screening and managing undernutrition: identifying, treatment and food distribution	General support; non-specified
Asociación para la Prevención y Estudio del VIH/Sida (APEVIHS)	Data collection on food and nutrition security	General support; non-specified
The Castillo Córdova Foundation	Food assistance: provision of food (family food bag) to families in rural areas detected with acute malnutrition following Food and Nutritional Security measurements	General support; non-specified

Source: own elaboration

World Food Programme – United Nations (WFP)

In the framework of the COVID-19 response, the WFP adapted and scaled up its programmes to respond to new and emerging needs. In Guatemala, the WFP implements and participates in field and remote assessments on how the COVID-19 pandemic affects food security and nutrition, to provide a full picture of the impacts in 2020 for implementation of the country's strategic plan (CSP) 2021-2024.

Data collection

In coordination with the Guatemalan Secretariat for Food Security and Nutrition (SESAN), the WFP initiated in June 2020 the planning of a remote data collection tool for food security assessment, aimed at capturing changes caused by the COVID-19 pandemic on food consumption patterns, coping strategies and livelihoods among rural and urban households (29).

Near Real-time Food Security Monitoring

In January 2020, before the WHO classified COVID-19 as a global pandemic, Near Real-time Food Security Monitoring was established in Guatemala by the WFP, delivering an overview of the food security situation, and an indication of how relevant indicators – such as health and market access, food security, and remittances – are shifting. A dynamic live portal is available at <https://hungermap.wfp.org/> and includes hunger and COVID-19 weekly and daily snapshots. With COVID-19, the system gained importance and has been expanded and transitioned to monitor COVID-19 caseloads and impacts on food security and on households, specifically regarding access to health services, markets and livelihood changes (30). This helped in monitoring the situation, capturing problems in real time and implementing early action and mitigation.

School feeding support

The Ministry of Education of Guatemala, underscoring the importance of school feeding as a social protection mechanism during the pandemic, requested international cooperation from the WFP and UNICEF to support fundraising endeavours (31). Taking advantage of the WFP coverage of the national school feeding programme in the country, the WFP's support consists in enhancing the integration of school feeding into a shock-responsive social protection system and incorporating emergency preparedness into the school feeding programme (32). Following the suspension of classes, WFP also collaborated in producing dedicated audio-visual materials aimed at raising awareness of good nutrition practices, for national diffusion in support of the food distribution carried out by the government (33). Likewise, in August 2020, and also at the request of the Ministry of Education, the WFP engaged in developing a digital tool to monitor take-home food rations during school lockdown, as well as to monitor food purchases from family farmers and smallholder organisations (34). In October 2020, a total of 23,967 schools used this digital tool to register their purchases (35).

Local food procurement services

The WFP additionally provides direct local food procurement services to the Ministry of Agriculture, Livestock and Food (MAGA) under the "Temporary Food Support Program" that distributes food commodities to food-insecure households across the country. The regular WFP activities on food procurement were expanded to meet the increased food insecurity needs attributable to COVID-19 and, in Guatemala, the WFP was further requested to facilitate the procurement of food commodities. This action involved negotiated agreements for approximately US\$ 90 million (35). In November 2020, over 1 million families affected by the economic impact of COVID-19 had been benefited by this support (31). In October 67,000 metric tons of assorted commodities had been purchased through procurement (35) to be used in social safety-nets programmes targeting rural households affected by COVID-19, under the coordination of the Ministry of Social Development. The WFP assisted both Ministry of Agriculture, Livestock and Food and Ministry of Social Development with expertise in beneficiary registration methods and the use of the transfer management platform (SCOPE) (29).

Screening undernutrition levels and assistance to children

The WFP is also supporting the Ministry of Public Health and Social Assistance through the screening of acute malnutrition among children for nutritional surveillance (31). The WFP provides assistance to vulnerable households, identifying and assisting households in which children are suffering, or at risk of suffering, acute malnutrition once government COVID-19 response programmes terminated in July/August 2020, in the framework of its regular activities of establishing operational arrangements with local partners to provide food (14).

Price monitoring in markets

The WFP field workforce also engaged in remotely monitoring market prices of basic and staple foods, in coordination with the governmental and non-governmental organisations of the food security cluster with field presence (33).

Support to indigenous women's microenterprises

To promote the economic reactivation of indigenous women's microenterprises, in August 2020, the WFP helped deliver cooperatives with livestock kits for poultry production together with laying hens and livestock vaccines (34), and packets of cabbage seeds (35).

United Nations International Children's Emergency Fund (UNICEF)

Critical nutrition interventions to children under-5, pregnant and lactating mothers and young caregivers

UNICEF asked for an additional US\$ 15,751,000 to operate in Guatemala, of which 5,037,748 were targeted to support nutrition-related programmes (36). Also part of the programme response, UNICEF adapted to the COVID-19 context and continued to support, through the nutrition brigades which were in turn supported by the reallocation of some funds/activities of the EU-funded project “Comprehensive Strategy to Fight Malnutrition”, critical life-saving nutrition interventions in several of the most affected departments (Alta Verapaz, Huehuetenango), including timely identification and treatment of children under five years of age diagnosed with acute malnutrition; the provision of multiple micronutrients powder to children under five years of age, supplementation with zinc, vitamin A and MNPs; and the provision of breastfeeding and maternal nutrition counselling to pregnant and lactating women and caregivers of young children, to prevent acute malnutrition and micronutrient deficiencies, in addition to collecting anthropometric data. Support was also provided to the Ministry of Public Health and Social Assistance to establish guidelines for nutritional care through emergency nutrition brigades. Community leaders are also trained to identify acute malnutrition in their community in a timely manner, identify signs of danger of acute malnutrition, and to communicate the basic principles of infant feeding²⁶.

UNICEF also assisted MIDES in managing the family support (*Bono Familia*) programme and maintained its responsibilities by integrating WASH for nutrition actions²⁷. UNICEF and the Global Nutrition Cluster Technical Alliance are mobilising support in infant and young child feeding in emergencies (IYCF-E) and for community management of acute malnutrition (CMAM) (37).

School feeding support

UNICEF supported the Ministry of Education's efforts to ensure the continuity of school feeding, including the distribution of non-perishable food for pre-primary and primary children as an alternative to school meals (38) and combined this with production and delivery of education material (39), namely printing nutrition-related communication materials, including recommendations for adequate infants and young children feeding practices in the context of COVID-19, as well as guidance on food contributions by the private sector and general population (40), (37).

²⁶ Maria Claudia Santizo (personal communication)

²⁷ Maria Claudia Santizo (personal communication)

Monitoring food contributions

UNICEF also participated in monitoring of food donation and distribution actions, including breast milk substitutes through health services and supporting SESAN, and production and broadcasting of nutrition-related messages in community-led radios (37).

Food and Agriculture Organisation – United Nations (FAO)

COVID-19 Response and Recovery Programme

The FAO developed a global COVID-19 Response and Recovery Programme to which a high-level ad hoc experts' team comprised of former Ministers for Agriculture and retired FAO Senior Officers were mobilised, aimed at improving response capacity in support of 15 member countries, including Guatemala. This task force works on formulating tangible recovery proposals to be submitted to financial institutions for investment support (41) to address the impact of COVID-19 on food security and nutrition, and food systems and guiding the adjustment of the FAO's regional priorities and programmes.

Cash for work program

The FAO supported the MAGA on the development and implementation of the cash-for-work program, which is focused on family farming households affected by COVID-19 and tropical storms. The vulnerable small farmers will receive cash transfers for working on irrigation system recovery, soil and water conservation, forestry systems and planting crops. In addition, the program supplies productive inputs (seeds, family gardens, live poultry, among others) to reconstruct local production systems (42).

Family farming livelihoods assessment

In December 2020, the Ministry of Agriculture and FAO made a national assessment of the impact of COVID-19 on family farming livelihoods across the country. Using the national family farming census, more than 8,000 family farmers were interviewed remotely on 340 municipalities.

The Pan-American Health Organisation (PAHO)

The Pan-American Health Organization's (PAHO) interagency field experience through the United Nations' Central Emergency Response Fund (CERF) projects, contributed to strengthening the institutional response of Guatemalan official services to acute malnutrition case-finding, including healthcare worker training by certified nutritionists, local multisectoral coordination support, case follow-up in the nutritional care pathway, or adapting training materials and delivering training in the COVID-19 context for breastfeeding safe practices and other maternal child health messaging.

Additionally, among the urgent items for a call to action for the burden of undernutrition and COVID-19, the PAHO prioritised the reactivation and scaling up of services for the early detection and treatment of child wasting and stunting.

United Nations Development Programme (UNDP)

The UN Technical Emergency Team in Guatemala (UNETE) was activated to provide information sharing and situation analysis, triggering sectorial tables on Health, Food Security and Nutrition, Water Sanitation and Hygiene (WASH), Education, and Protection. Co-led by the UNDP, the Early National Response and Recovery cluster to Contain the Impact of COVID-19 supports the Ministry of Social Development (MIDES) in its mission of providing food at local and national level and allocating cash transfers to the most vulnerable people. It also supports the Ministry of Agriculture, Livestock and Food (MAGA) in delivering food to vulnerable families in rural areas (43).

Action Against Hunger

In Guatemala, Action Against Hunger is distributing food, while monitoring the nutritional status of children under five to prevent and treat early cases of malnutrition.

Asociación para la Prevención y Estudio del VIH/Sida (APEVIHS)

Located in the Department of Retalhuleu in the south of Guatemala, APEVIHS carried out data collection in rural areas of the department to measure the impact of COVID-19 on Food and Nutritional Security, as a pilot study that will serve as a basis to be developed by more formal studies where other aspects or other interventions are investigated²⁸.

Castillo Córdova Foundation

During the pandemic there was a food assistance program where family food boxes were donated to children in various areas of the country (Retalhuleu, Huehuetenango, Quetzaltenango, Sololá, Escuintla, Guatemala, El Progreso, Alta Verapaz, El Progreso, Zacapa y Chiquimula). The beneficiaries were the families of children who were detected by the Nutritional Brigades as suffering acute malnutrition, to help their nutritional recovery and improve availability and access to food for their families²⁹. The Foundation supported APEVIHS with the monthly treatment of 50 children under 5 years of age with acute malnutrition, providing bags of food to support their nutritional recovery.

Dedicated programmes and projects

Active projects funded by the World Bank (44)

Guatemala benefits from the dedicated COVID-19 Fast-Track Facility of the World Bank Group's Operational Response to COVID-19, through the implementation of COVID-19 Emergency Response Project:

- Guatemala COVID-19 Response (P173854 (45),(10) approved 26 June 2020) – aimed at preventing, detecting and responding to COVID-19 and strengthen national systems for public health preparedness in Guatemala (US\$ 20.00 million). Implemented by the Ministry of Public Health and Social Assistance largely built on dialogue and partnership with the ongoing *Crece Sano*: Guatemala Nutrition and Health Project (P159213). *Crece Sano* is a US\$ 100.00 million project approved in March 2017 to be implemented until the end of January 2024. The objective is to improve selected practices, services and behaviours known to be key determinants of chronic malnutrition (with an emphasis on the first 1,000 days of life).

Other projects with broader nutrition-sensitive support were either approved or extended due to COVID-19 pandemic, namely:

- “Investing in digital technology to increase market access for women agri-entrepreneurs in Guatemala” (DIGITAGRO) ran from July 2019 to December 2020 but was extended as field activities were on hold due to the pandemic. This project is coordinated by the World Bank in partnership with FAO and WFP and is targeted at southwest areas. The DIGITAGRO pilot is an e-commerce platform to match schools' food demands with supplies from smallholders. It was launched before the pandemic with support from the InfoDev Trust Fund. Originally envisioned to improve access to the National School Feeding Program for smallholding “agri-preneurs”, these technologies now have the potential to be scaled up as part of the COVID-19 support, which the Agriculture and Food Global Practice of the World Bank is designing for Guatemala's agriculture sector. A series of e-extension technical videos targeted at women smallholders are being developed in partnership with the FAO to provide information on basic safe food practices, including guidelines on safe handling, processing, packaging and storage, as well as efficient and healthy use of water for food preparation. A special focus is given to children's nutrition and school menus. Agricultural e-extension services videos are also produced focusing sustainable postharvest practices, climate resilience, and on avoiding food loss and waste (46). The production of videos for schools is under consideration (in synergy with the *Crece Sano* Guatemala Nutrition and Health project (2017-2024)), incorporating further aspects of the NSmart Country Profile (47).

²⁸ Astrid Sánchez Rojas (personal communication)

²⁹ Astrid Sánchez Rojas (personal communication)

- Responding to COVID-19: Modern and Resilient Agri-food Value Chains (GUATEINNOVA; P173480³⁰) – aimed at preventing, detecting and responding to COVID-19 and strengthen national systems for public health preparedness in Guatemala (Total US\$ 179.00 million with US\$ 150.00 million commitment amount). The project has national coverage and is foreseen impacting over 450,000 people (prioritising territories with high poverty levels). It responds to an official request from the Government of Guatemala, and is developed by World Bank in partnership with IFAD and aims at responding to the pandemic's effects on rural smallholders and on the private and public sectors, by facilitating investment and promoting an agro-industrialisation strategy and a nutrition-sensitive communication campaigns to reduce food losses, increase the adoption of climate-resilient technologies and support the COVID-19 emergency response for beneficiaries in key value chains, including vegetable, beans and papaya (48).

Crisis Response and Recovery in Guatemala Development Policy Loan (DPL) (5):

- Approved on the 17th of December 2020 to “support mitigation of the impacts of the COVID-19 pandemic on the human capital of poor and vulnerable Guatemalans and lay the foundations for a sustainable recovery, promote public sector transparency, and improve revenue administration”, the loan is for US\$500 million, with a final maturity of 13 years. Specifically related to ongoing governmental efforts on food and nutrition security in the country, the DPL aims at supporting provision of school meals at home while schools are closed, as well as providing food supplies to vulnerable households, adopting screening measures to prevent boosts in food insecurity and malnutrition for 50,000 at-risk children, among other measures such as expanding safety nets or implementing actions to support the Economic Recovery Plan. On the latter, increasing competitiveness, market access and sustainability in the livestock sector, and enhancing foreign trade are two goals which also have an impact on nutrition outcomes.

Active projects funded by the European Union

Guatemala has been allocated €166.8 million under the current Development Cooperation Instrument (DCI) programming period (2014-2020) of which 43% are allocated to food security interventions (49).

Under the 2014-2020 Multiannual Indicative Programme (MIP), four projects have been developed under Concentration Sector 1: "Food and Nutrition Security", as part of a malnutrition prevention approach³¹. Noticeably, these projects are developed in the same geographic areas to maximise the impact:

- 1) Project: Support Program to the Primary Health Care System for the Reduction of Chronic Malnutrition in Guatemala (LA/2019 405-425 - Programa de Apoyo al Sistema de Atención Primaria en Salud para la Reducción de la Desnutrición Crónica en Guatemala)

Objective: to contribute to the reduction of malnutrition in children under-5, through strengthening of the first level of health care that ensures the delivery of 1,000 days of window of opportunity services in 22 prioritised departments. It benefits 267,000 children under-5, 328,665 women of reproductive age and 402,000 adolescents.

Impact of COVID-19 pandemic: the agreement with the Pan-American Health Organization was signed on 11/11/2019 but the design phase and the definition of the first year's operational plan were delayed by the emergence of the COVID-19 pandemic. The plan is currently under way and now includes local technical support for pandemic response, as well as individual protection material.

³⁰ Pending congress approval (personal communication by Beatriz Betegón Ramiro)

³¹ EU Delegation Guatemala - Briefing note “Seguridad alimentaria y nutricional” (kindly provided by Beatriz Betegón Ramiro during the consultation period)

- 2) Project: Comprehensive Strategy to Combat Chronic Malnutrition (Estrategia Integral para combatir la desnutrición crónica)

Objective: to improve the nutritional conditions of children, women of reproductive age and adolescents through better nutrition and child development practices, as well as strengthening of participatory and inclusive local governance for food and nutrition security in 22 prioritised departments. Benefits 267,000 children under-5, 328,665 women of reproductive age and 402,000 adolescents.

Impact of COVID-19 pandemic: additional support to 20 SESAN nutritional brigades (in 20 of the 22 municipalities of the project) as part of the response to COVID-19 and associated increase in cases of acute malnutrition as a result of the halted economy. Linked to the brigades, UNICEF has prepared a battery of nutrition and childcare awareness messages for COVID-19 to be disseminated by text message.

- 3) Project: integral approach to build resilience in communities vulnerable to food insecurity and climatic shocks, especially droughts in Guatemala (PRO RESILIENCE). Indirect management with the World Food Programme (WFP)

Objective: to contribute to improving the food security and nutritional condition in the north-eastern Dry Corridor in Guatemala through higher family incomes and the adoption of environmentally sustainable and climate resilient method for access to food and improving the nutritional status of women and children under-5 tackling families who recurrently suffer from hunger or fall into a situation of seasonal or prolonged hunger, in prioritised departments.

Impact of COVID-19 pandemic: the inclusion of additional departments may occur in case of changes necessary due to the COVID 19 outbreak.

- 4) Project: response to COVID-19 effects in Guatemala. Strengthening the capacities of public institutions and increasing rural income LA/2020/042-436. The programme was adopted in the DCI committee in September and is, as at 18th February 2021, awaiting the final signature of approval.

Objective: the action aims to improve food security and nutrition of populations most affected by COVID-19, focused on households in rural areas and encompassing i) improved procedures for effectiveness of public expenditure in food security and nutrition in the social protection, agriculture and health sectors, and ii) support for post-crisis actions for rehabilitation of the livelihoods and assets of households in rural areas most affected by COVID-19, by focusing on agriculture and food security.

In Guatemala, the EU funds OXFAM to provide life-saving food and nutrition assistance to the most affected communities. During the coronavirus pandemic, OXFAM continues to operate by providing poor households with enough corn, sugar, beans, flour and oil to ensure every member of their families can eat 2,100 calories a day for 4 months. Under COVID-19 restriction measures, during a week, more than 5,000 people take turns to reach an outdoor football pitch large enough to ensure that they can receive food kits while respecting physical distancing norms, to reduce the risk of infection (50).

As a strategic partnership between the EU and the FAO, the Food Security and Nutrition Impact, Resilience, Sustainability and Transformation (FIRST) program, is assessing the effectiveness of policies and programs, supporting capacities through policy assistance, and promoting inclusive policy dialogue (51). The FIRST program works closely to the Ministry of Agriculture in the development of the Strategic Food Security and Nutrition program, which contains specific actions for crisis response and rapid production system recovery.

With direct management with the Tropical Agricultural Research and Higher Education Centre (CATIE) for the NIPN in Guatemala, the objective is to implement the nutrition governance activities in country, which includes consolidation and institutionalisation of NIPN, institutional support to Guatemala's public bodies on nutrition and inter-institutional coordination, with an emphasis on the humanitarian-development-peace nexus and COVID-19 mitigation and response mechanisms, training and transfer of know-how, and expertise in nutrition-related issues (52).

Discussion

Guatemala faces a major health challenge of addressing the double burden of malnutrition with the coexistence of stunting, wasting and micronutrient deficiencies, on the one hand, and overweight, obesity on the other. Before the start of the pandemic, some 2.3 million people were food insecure nationwide (14) and more than half of the adult population were overweight or obese. With the advent of the COVID-19 pandemic, many organizations were concerned that food vulnerabilities could be exacerbated, aggravating acute malnutrition and/or exacerbating obesogenic environments due to changes in diets towards less healthy foods. This case study aimed to analyse the negative effect of the COVID-19 pandemic on diet and nutrition outcomes in Guatemala and to draw lessons on how interventions and policies can be implemented to mitigate these negative effects. The first confirmed case of COVID-19 in Guatemala was reported on the 13th of March 2020. On the 20th of January 2021, the cumulative incidence accounted for 8,446 confirmed infections per million inhabitants, which corresponds to a total of 151,324 cases detected in the country.

Impact of the COVID-19 pandemic on diet and nutrition outcomes

To face the COVID-19 pandemic, the Guatemalan government put in place a set of measures strongly depending on mobility restrictions in order to avoid widespread and sustained community transmission of SARS-CoV-2 and to defend the fragile national health system, the latter being particularly important in the national context. The stringency of the restrictions was high at the onset of the pandemic and was then released at a magnitude that reflected the evolution of new daily cases in the country. This strategy and the adopted measures were similar to those ordered at the international level, which was reported to challenge food security and nutrition through a range of impact pathways (53–56).

This link between containment measures and food insecurity is also apparent in Guatemala. Movement restrictions that prevented more than two thirds of the population from selling and buying food in informal markets led to a negative impact on incomes and affected food security and nutrition, particularly in poorer households living in rural areas. Food inflation and the price of the basic food basket peaked during the period when the retail demand soared amidst the COVID-19 pandemic. Noticeably, for maize, the annual price peak was observed early and was sustained for a longer period when compared with the historical data from previous years. For staple foods (and for rice), the Government authorised imports exempt from tariff quotas. As the restrictive measures were lifted and the October 2020 fully-fledged reopening of commercial activities, the percentage of households reporting difficulties in accessing markets due to government imposed restrictions on movement and commerce and due to security concerns, steadily decreased, although still being higher by 50% in January 2021. Lack of money became the most significant barrier to access markets and grocery stores in October 2020 and January 2021, which suggests an aggravation in income reductions and poverty levels of the population despite the release of the stringency of contingency measures and support from actions by the government and international organisations. The observed decrease in people with insufficient food consumption (assessed according to the Food Consumption Score) from July 2020 to below pre-COVID-19 levels in January 2021 can be associated with the decline in the stringency index of containment measures and/or benefits from government and institutional food assistance. From May 2020 to January 2021 the percentage of households reporting negative coping strategies to face food insecurity also decreased, except for reliance on less expensive food, which remained adopted by over 80% of the households in January 2021.

Discussing whether this high percentage results solely from the COVID-19 pandemic is not possible and stands as a limitation of this report. The available data only allows comparing between the period of strict mobility restrictions and the period immediately after these restrictions were released, due to the absence of data collected using identical methodologies before COVID-19. Although suggesting an alleviation on families' pressure in obtaining food, this changing diet behaviour may be a risk for nutrition since it has been reported that shifting towards cheap calorie-dense but nutritionally poor foods may result in reduced immunity and increased COVID-19 fatality (57,58). This shift may also favour overweight and obesity, thus contributing to the double burden of malnutrition and long-term diet-related non-communicable disease (59). However, without information about the nature of the less expensive food on which 80% of people state that they rely, one cannot conclude that diets changed to healthier or unhealthier diets and we cannot associate diet changes with specific dimensions of malnutrition. In fact, marginal fluctuations below 3% were reported in the daily consumption of fruits, cooked or raw vegetables, legumes, fish and meat, and milk and dairy according to an online survey conducted in Guatemala on the self-perception of eating habits and lifestyle before and during the COVID-19 pandemic (Astrid Sánchez, Sophia Martínez, Edna Nava, Mónica Silva and Karina Aguilar; unpublished results), while a parallel evaluation made by the FAO on rural family farming households, reported that 86% of households had reduced meat consumption and about half have reduced milk and fruit consumption, replacing these foods by maize, beans and local herbs (1). The former results are probably biased towards the less vulnerable populations, as it was targeted on those with an electronic device or computer with internet access and access to social media, while the latter targeted rural households, suggesting a differential in impact of the pandemic in diet quality between socioeconomic levels. The lack of disaggregated data on the split urban/rural or low/high income additionally hampers a deeper discussion.

Effective policy responses

The COVID-19 pandemic and its economic consequences (60) were expected to cause widespread disruptions of health and food systems, with the worst consequences borne by young children (61). Estimations of the possible impacts of COVID-19 restriction measures on maternal and child nutrition and morbidity in LMICs were expected to be large (61), (62). These studies were not only intended to be predictions but were aimed at highlighting the need to balance stringent public health measures with the needs of poorer communities and vulnerable segments of the population. To some extent, our analysis seems to challenge these assumptions for Guatemala.

For example, the consensus among international agencies and Non-Governmental Organizations working in the country on the worsening of undernutrition in children under-5, linked to COVID-19 restrictions, may be a misinterpretation when looked at cumulative numbers in years 2017-2020. In 2020, a modification was implemented to the registry system and therefore a cause-effect relationship of acute undernutrition and the COVID-19 pandemic in Guatemala cannot be unambiguously established. Nonetheless, the historical April-to-August peak in acute undernutrition in children under-5 attributed to the annual "hunger season" in the region was not observed in 2020, putatively reflecting, again, the additional support given to poor households in the framework of measures implemented to face the negative impact of COVID-19 on nutrition. Other indicators improved when the containment measures were released, as mentioned above. Nonetheless, publicly available data for the country suggests an aggravation of the acute food insecurity in the country, as disclosed by the 7-8% increase of households classified in Phases 3 and 4 of the IPC AFI. It should be noted that this finding may be related to the multisectoral and multidimensional aspect of the classification. The IPC analytical framework is a predictive model to explain and situate data within a larger conceptual framework, based on risk calculations that consider hazards and vulnerability; the latter being understood in relation to exposure, susceptibility and resilience (63). In late 2020 and early 2021, the effect of the hurricanes helps explain these results. The concept provides an analysis that is broader than the current food security status and our results support the need to maintain social protection programmes in Guatemala.

Overall, the information reported here suggests that disruptions occurred, but at a less severe level than foreseen, which may be due to a mixed effect of the support policies put in place by the government during the outbreak and, particularly, the rearrangement of the initiatives held in the country by international organisations and donors, which targeted their actions on vulnerable populations with food insecurity risks aggravated by the pandemic. To cope with the adverse effects of the COVID-19 pandemic, nearly 200 governmental policy responses were registered, including social protection policies, farm policies, market policies and reinforcement of malnutrition diagnosis and intervention policies, encompassing family agriculture support, food aid and cash transfers based on multi-ministerial actions against malnutrition. In addition to the efforts of the Government of Guatemala in supporting the population facing the restrictions triggered to contain the COVID-19 pandemic, there was a wide range of activities implemented through international partnerships. A number of international donors and non-governmental initiatives operating in Guatemala reviewed and adjusted their programmes to support the government in implementing the announced measurements to face the COVID-19 pandemic and introduced new dedicated activities in support of the population. The scope of the activities was diversified and included data collection, situation analysis and data sharing, training, screening and assisting vulnerable households including children suffering with acute malnutrition, support to smallholders (cash transfers to target farming practices, supply of productive inputs and livelihoods assessment, and public procurement of food), support for school feeding programmes, support to the population with provision of cash and food, production of nutrition educational and awareness materials and breastfeeding and maternal nutrition counselling. Most importantly, many of these organisations supported the government's policies and efforts both in synergistic and complementary actions with the Ministry of Agriculture, Livestock and Food, the Ministry of Social Development, the Ministry of Education, the Ministry of Public Health and Social Assistance, as well as the National COVID-19 Response and Recovery Programme. Even though no formal evaluation of the implemented policies had been carried out in Guatemala, in Ethiopia for example, it has been shown that social protection programmes sustain incomes and food demand and prevent the aggravation of food insecurity among beneficiaries of the Productive Safety Net Programme (PSNP) directed at disadvantaged households (64).

Limitations

The limitation in accessing reliable and sound data in low-income countries such as Guatemala makes it too early to apprise long-term consequences of the COVID-19 on livelihoods and is a major obstacle that hampers the assessment of putative direct clear-cut causality between levels of food insecurity – and its impact in the dimensions of undernutrition and overnutrition - and the pandemic in Guatemala. There is a lack of longitudinal studies and pre-COVID-19 data was unavailable for some indicators, particularly covering the same regions studied afterwards to understand the effects of the pandemic. Moreover, the enduring pandemic further aggravated the difficulty in collecting information and primary data in the field. Nonetheless, for all indicators reported in this case-study, data was available concerning the period of severe curfew and strict restrictions on mobility and after lifting of restriction measures, allowing understanding of the impact of measures implemented to contain the spread of the virus among the population on food security and consequent risks to their nutritional status. This was particularly important for understanding coping strategies used to face food insecurity at the household level and the main causes of the difficulties in accessing markets to buy (and sell) food, since the performance of these indicators is largely dependent on the specific drivers and contexts, and the results can seldom be extrapolated from different studies targeted at other questions.

For indicators for which pre-COVID data was available, interrupted time series could be discussed to speculate on the intervention effect, which highlights the importance of having more of these designs to comprehensively evaluate the policies implemented, understand their effectiveness and analyse the coverage of the most vulnerable populations both in rural and urban areas. The lack of such studies also made it difficult to disentangle the seasonal variations of food insecurity indicators from the effects of the pandemic and, most importantly, from the effects of hurricanes Eta and Iota that affected central America in November 2020, endangering food production and distribution. In addition, caution is necessary when interpreting and drawing conclusions from data generated from phone interviews or online surveys due to possible sampling bias of respondents towards specific demographic, ethnic, income or socioeconomic classes.

Moreover, to the best of our knowledge, no peer-review scientific paper was published reporting either evidence from COVID-19 impact on nutrition, or assessment of the evolution of food insecurity in the Guatemalan context.

Final remarks

The analysis reported here suggests that the COVID-19 crisis may reignite interest in social protection policies and government welfare support as instruments to protect the food security of poor households facing catastrophic shocks. International organisations and donors can be instrumental in generating synergistic effects to the benefit of the most vulnerable target populations when reshaping national/regional programmes to share facilities and capabilities in support of governmental policies. The direct impact of COVID-19 (and associated governmental measures) in overweight and obesity outcomes is difficult to discern in the short-term, even if a directed longitudinal study had been carried out. Under the specific nutritional context of Guatemala, the incorporation of “double-duty” objectives and actions in food and cash transfer programs that increase household income and access to food have been highlighted. These are mandatory to ensure that addressing child undernutrition does not exacerbate the problem of unhealthy weight gain (65),(66).

During the COVID-19 pandemic, the support given to the Ministry of Agriculture, Livestock and Food, the Ministry of Social Development, the Ministry of Education, the Ministry of Public Health and Social Assistance, and the National COVID-19 Response and Recovery Programme, was acknowledged as a game changer by stakeholders.

Acknowledgements

The authors acknowledge the valuable comments and support provided by the following experts that contributed to this report: Ana Isabel Rosal Martinez (Universidad del Valle de Guatemala), Astrid Sánchez Rojas (APEVIHS), Beatriz Betegon Ramiro (EU Delegation Guatemala), Claudia Barillas (EU Delegation Guatemala), Cristina Lopriore (Consultant for Capacity for Nutrition (C4N), Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ)), Dinorah Lissette Calles (Pan-American Health Organization (PAHO)), Manuel Ramírez Zea (Instituto de Nutrición de Centro América y Panamá (INCAP)), María Claudia Santizo (Secretary of Food Security and Nutrition (SESAN)), Mario Morales (Secretary of Food Security and Nutrition (SESAN)), Marco Moncayo (Food and Agriculture Organization (FAO)), Noel Solomons (CeSSIAM), and Tobias Tzoc (Instancia de Consulta y Participación Social (INCOPAS)).

References

1. FAO. Sistemas alimentarios y COVID-19 en Guatemala. Efectos, respuestas, políticas e implicaciones a largo plazo [Internet]. FAO: Roma. 2020. p. #18. Available from: <https://doi.org/10.4060/cb1597es>
2. Canelas C, Gisselquist RM. Human capital, labour market outcomes, and horizontal inequality in Guatemala. *Oxford Dev Stud.* 2018 Jul;46(3):378–97.
3. Roser M, Ritchie H, Ortiz-Ospina E, Hasell J. Coronavirus Pandemic (COVID-19) [Internet]. 2020. Available from: www.OurWorldInData.org
4. Ministerio de Salud Publica y Asistencia Social de Guatemala. Situación de COVID-19 en Guatemala [Internet]. [cited 2021 May 1]. Available from: <https://tablerocovid.mspas.gob.gt/>
5. World Bank. Supporting Guatemala's Response to the Crisis and Laying the Foundations for a Sustainable, Inclusive Recovery [Internet]. Press Release 17 December 2020 (No: 2021/081/LAC). 2020 [cited 2021 May 3]. Available from: <https://www.worldbank.org/en/news/press-release/2020/12/17/banco-mundial-respuesta-guatemala-pandemia-recuperacion-sostenible>
6. World Bank. Guatemala - Project List [Internet]. Poverty & Equity Brief Latin America & the Caribbean. October 2020; 2020. Available from: <https://projects.worldbank.org/en/projects-operations/projects-list?qterm=Guatemala+covid>
7. FAO. The Republic of Guatemala: Hurricanes Eta and Iota - Urgent call for assistance [Internet]. FAO Representation in Guatemala, Rome; 2020. p. #4. Available from: <http://www.fao.org/3/cb2587en/cb2587en.pdf>
8. IFPRI. COVID-19 Policy Response (CPR) Portal [Internet]. 2020. Available from: <https://www.ifpri.org/project/covid-19-policy-response-cpr-portal>
9. Hale T, Webster S, Petherick A, Phillips T KB. Oxford COVID-19 Government Response Tracker [Internet]. Blavatnik School of Government. 2021. Available from: <https://covidtracker.bsg.ox.ac.uk/>
10. World Bank. Guatemala COVID-19 Response (P173854) [Internet]. Report No: PAD3864; 2020 [cited 2021 May 3]. p. 44. Available from: <http://documents1.worldbank.org/curated/en/768711594243518325/text/Guatemala-COVID-19-Response-Project.txt>
11. IFPRI. CPR PORTAL - International Food Policy Research Institute (IFPRI) | Tableau Public [Internet]. 2021 [cited 2021 Feb 21]. Available from: <https://public.tableau.com/profile/ifpri.td7290#!/vizhome/CPRPORTAL/Overview?publish=yes>
12. IMF. Guatemala - Policy Responses to COVID-19 [Internet]. 2020. p. 1–189. Available from: <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19#G>
13. Hunger AA. Number of People Facing Hunger in Guatemala Doubled Due to COVID-19 [Internet]. 2020 [cited 2021 May 3]. Available from: <https://www.actionagainsthunger.org/story/number-people-facing-hunger-guatemala-doubled-due-covid-19>
14. World Food Programme. WFP Guatemala Country Brief June 2020 [Internet]. 2020 [cited 2021 May 3]. Available from: <https://docs.wfp.org/api/documents/WFP-0000118287/download/>
15. World Food Programme. WFP global response to COVID-19: September 2020 [Internet]. World Food Program, Rome; 2020 [cited 2021 May 3]. Available from: <https://docs.wfp.org/api/documents/WFP-0000119380/download/>
16. GHDx. Guatemala Demographic and Health Survey 2014-2015 [Internet]. Available from: <http://ghdx.healthdata.org/record/guatemala-demographic-and-health-survey-2014-2015>
17. World Food Programme. Guatemala - Country Brief [Internet]. 2021. Available from: <https://www.wfp.org/countries/Guatemala>
18. FAO & ECLAC. Food systems and COVID-19 in Latin America and the Caribbean: Risks threatening international trade [Internet]. Analysis and responses of Latin America and the Caribbean to the effects of COVID-19 on food systems Bulletin No. 3. Santiago, FAO. 2020 [cited 2021 May 3]. p. # 18-# 18. Available from: <http://www.fao.org/3/ca8975en/CA8975EN.pdf>

19. Shadmi E, Chen Y, Dourado I, Faran-Perach I, Furler J, Hangoma P, et al. Health equity and COVID-19: Global perspectives. *Int J Equity Health*. 2020;19(104).
20. FAO & ECLAC. Food systems and COVID-19 in Latin America and the Caribbean: Recovery with transformation: a mid-term overview [Internet]. Analysis and responses of Latin America and the Caribbean to the effects of COVID-19 on food systems Bulletin No. 17. Santiago, FAO. 2020 [cited 2021 May 3]. p. #23-#23. Available from: <https://doi.org/10.4060/cb2536en>
21. FAO. Food Price Monitoring and Analysis (FPMA): Prices of beans increased and were higher year on year in January [Internet]. 2020. Available from: <http://www.fao.org/giews/food-prices/regional-roundups/detail/en/c/1373998/>
22. FAO & ECLAC. Food systems and COVID-19 in Latin America and the Caribbean: Impact and risks in the labour market [Internet]. Analysis and responses of Latin America and the Caribbean to the effects of COVID-19 on food systems Bulletin No. 5. Santiago, FAO. 2020 [cited 2021 May 3]. p. #18-#18. Available from: <https://doi.org/10.4060/ca9237en>
23. WHO. Frequently asked questions: Breastfeeding and COVID-19 [Internet]. WHO: Maternal, Newborn, Child and Adolescent Health, and Ageing; 2020. p. #5. Available from: <https://www.who.int/publications/m/item/frequently-asked-questions-breastfeeding-and-covid-19>.
24. IMF. IMF Country Report No. 20/201 (June 2020, Guatemala) [Internet]. International Monetary Fund Washington, D.C.; 2020. Available from: <https://www.imf.org/en/Publications/CR/Issues/2020/06/11/Guatemala-Request-for-Purchase-Under-the-Rapid-Financing-Instrument-Press-Release-Staff-49507>
25. Observatorio Regional SICA-COVID19. Cronología de casos, decretos y medidas en los países miembros del SICA [Internet]. [cited 2021 May 3]. Available from: <https://storymaps.arcgis.com/stories/1cf4dcd062294930b6ffd425433f569e>
26. Ministerio de Salud Publica y Asistencia Social de Guatemala. Lineamientos para la búsqueda activa de casos de desnutrición aguda y otras acciones relacionadas a nutrición en el marco de la emergencia del COVID-19 [Internet]. Programa de Seguridad Alimentaria y Nutricional, Guatemala; 2020. p. #29-#29. Available from: <http://www.siinsan.gob.gt/siinsan/wp-content/uploads/Lineamientos-para-la-búsqueda-activa-de-casos-de-desnutrición-aguda-y-otras-acciones#gsc.tab=0>
27. Secretaría de Seguridad Alimentaria y Nutricional de Guatemala. Tablero búsqueda activa – PORTAL SIINSAN [Internet]. [cited 2021 May 3]. Available from: <http://www.siinsan.gob.gt/siinsan/tablero-busqueda-activa/>
28. World Bank. COVID-19 High-Frequency Monitoring Dashboard Technical Note [Internet]. The World Bank Group. Washington D.C.; 2020 [cited 2021 May 3]. p. #16-#16. Available from: <http://pubdocs.worldbank.org/en/106981605043307033/COVID-19-Dashboard-Technical-Note.pdf>
29. World Food Programme. WFP Guatemala Country Brief July 2020 [Internet]. 2020. Available from: <https://docs.wfp.org/api/documents/WFP-0000118755/download/>
30. World Food Programme. Near Real-time Food Security Monitoring During COVID-19 [Internet]. Hunger Monitoring Unit (formerly mVAM); [cited 2021 May 3]. p. #11-#11. Available from: <https://docs.wfp.org/api/documents/WFP-0000117078/download/>
31. World Food Programme. WFP Coronavirus Pandemic - (Covid-19) Level 3 Emergency [Internet]. External Situation Report #17. December; 2020 [cited 2021 May 3]. Available from: <https://docs.wfp.org/api/documents/8dc47114a1824661a730eaaed01bd11/download/>
32. World Food Programme. Guatemala country strategic plan (2021–2024) [Internet]. Executive Board Second regular session (WFP/EB.2/2020/7-A/3). Rome, 16–20 November 2020; 2020 [cited 2021 May 3]. Available from: <https://docs.wfp.org/api/documents/WFP-0000119409/download/>
33. World Food Programme. WFP Guatemala Country Brief April 2020 [Internet]. 2020 [cited 2021 May 3]. Available from: <https://docs.wfp.org/api/documents/WFP-0000116984/download/>
34. World Food Programme. WFP Guatemala Country Brief August 2020 [Internet]. 2020. Available from: <https://reliefweb.int/sites/reliefweb.int/files/resources/WFP-0000119148.pdf>.
35. World Food Programme. WFP Guatemala Country Brief October 2020 [Internet]. 2020. Available from: <https://docs.wfp.org/api/documents/WFP-0000121240/download/>

36. UNICEF. Children on the move and COVID-19 in Mexico and Central America [Internet]. Humanitarian Action for Children. 2021. p. #6. Available from: <https://www.unicef.org/media/87461/file/2021-HAC-Mexico-Central-America.pdf>.
37. UNICEF. Central America Hurricanes Eta and Iota [Internet]. Available from: <https://www.unicef.org/media/91211/file/Central-America-Humanitarian-SitRep-Hurricanes-ETA-and-Iota-15-January-2021.pdf>
38. UNICEF. Latin America and the Caribbean COVID-19 Response Progress Report No. 2. UNICEF; 2020. p. Available: <https://www.unicef.org/media/79721/file>.
39. UNESCO, World Bank, UNICEF, WFP, UNHCR. Supplement to Framework for reopening schools: Emerging lessons from country experiences in managing the process of reopening schools [Internet]. Manuals, Toolkits and Guidance; 2020. p. #6. Available from: <https://resourcecentre.savethechildren.net/node/18274/pdf/frameworkforreopeningschoolsseptember19.pdf>.
40. UNICEF. Central America Tropical Storm Eta [Internet]. Humanitarian Situation Report No. 2. 2020. p. #9. Available from: <https://www.unicef.org/media/79721/file/LACRO-COVID19-SitRep-10-June-2020.pdf>
41. FAO. COVID-19 update and adjustments to FAO's regional priorities to address impact on food security and nutrition, and food systems (LARC/20/10) [Internet]. 36th Regional Conference for Latin America and Caribbean (LARC); 2020. Available from: <http://www.fao.org/about/meetings/regional-conferences/larc36/documents/en/>
42. Ministerio de Agricultura Ganadería y Alimentación de Guatemala. Inicia Programa Estipendios por Acciones [Internet]. 2021 [cited 2021 May 3]. Available from: <https://www.maga.gob.gt/inicia-programa-estipendios-por-acciones/>
43. United Nations Development Programme. UNDP Guatemala Support to the National Response and Recovery to Contain the Impact of COVID 19. United Nations Development Programme, Regional Bureau for Latin America and the Caribbean; 2020. p. #2-#2.
44. World Bank. Guatemala - Projects List [Internet]. Poverty & Equity Brief Latin America & the Caribbean. 2021. Available from: <https://projects.worldbank.org/en/projects-operations/projects-list?qterm=Guatemala+covid>
45. World Bank. World Bank Group's Operational Response to COVID-19 (coronavirus) – Projects List [Internet]. Brief, 23 October 2020. 2020 [cited 2021 May 3]. Available from: <https://www.worldbank.org/en/about/what-we-do/brief/world-bank-group-operational-response-covid-19-coronavirus-projects-list>
46. InfoDev. Responding to COVID-19 in Guatemala: Modern and Resilient Agri-food Value Chains [Internet]. 2020. Available from: <https://www.infodev.org/articles/responding-covid-19-guatemala-modern-and-resilient-agri-food-value-chains>
47. World Bank. Nutrition Smart Agriculture in Guatemala: Main Report [Internet]. World Bank Group, Nutrition Smart Agriculture Country Profiles; 2020 [cited 2021 May 3]. p. #26-#26. Available from: <https://policycommons.net/artifacts/1261584/nutrition-smart-agriculture-in-guatemala/>
48. IFAD. Responding to COVID-19: Modern and Resilient Agrifood Value Chains Project (GUATEINNOVA) [Internet]. President's Report, Republic of Guatemala (EB 2020/LOT/P.13); 2020. p. #44. Available from: <https://www.infodev.org/articles/responding-covid-19-guatemala-modern-and-resilient-agri-food-value-chains>
49. European Commission. Multiannual Indicative Programme for Guatemala 2014-2020 [Internet]. [cited 2021 May 3]. Available from: https://ec.europa.eu/international-partnerships/where-we-work/guatemala_pt
50. European Commission. Guatemala: helping rural indigenous communities tackle malnutrition [Internet]. 2020 [cited 2021 May 3]. Available from: https://ec.europa.eu/echo/blog/guatemala-helping-rural-indigenous-communities-tackle-malnutrition_en
51. FAO. FIRST: FAO-EU Partnership Policy Assistance Mechanism [Internet]. 2020. Available from: <http://www.fao.org/3/ca7234en/ca7234en.pdf>.

52. European Commission. Action Document for Sustainable Agri-Food System (annex). Decision on the financing of the annual action programme 2020 for the Food and Nutrition Security Action Area under the Thematic Programme on Global Public Goods and Challenges to be financed from the general budget of the union. European Commission; 2020.
53. OECD. COVID-19 in Africa: Regional socio-economic implications and policy priorities [Internet]. Tackling coronavirus (Covid-19): contributing to a global effort. 2020. Available from: <https://www.oecd.org/coronavirus/policy-responses/covid-19-in-latin-america-and-the-caribbean-regional-socio-economic-implications-and-policy-priorities-93a64fde>
54. OECD. COVID-19 in Latin America and the Caribbean: Regional socio-economic implications and policy priorities [Internet]. Available from: <https://www.oecd.org/coronavirus/policy-responses/covid-19-in-latin-america-and-the-caribbean-regional-socio-economic-implications-and-policy-priorities-93a64fde>
55. Josephson A, Kilic T, Michler JD. Socioeconomic Impacts of COVID-19 in Four African Countries [Internet]. 2020. Available from: <https://openknowledge.worldbank.org/handle/10986/34733>
56. Nations U. Policy Brief: The Impact of COVID-19 on Food Security and Nutrition [Internet]. United Nations; 2020 [cited 2021 May 3]. p. #23-#23. Available from: https://www.un.org/sites/un2.un.org/files/sg_policy_brief_on_covid_impact_on_food_security.pdf
57. Galmés S, Serra F, Palou A. Current state of evidence: Influence of nutritional and nutrigenetic factors on immunity in the COVID-19 pandemic framework. *Nutrients*. 2020 Sep;12(9):1–33.
58. Mertens E, Peñalvo JL. The Burden of Malnutrition and Fatal COVID-19: A Global Burden of Disease Analysis. *Front Nutr*. 2021 Jan;7.
59. Littlejohn P, Finlay BB. When a pandemic and an epidemic collide: COVID-19, gut microbiota, and the double burden of malnutrition. *BMC Med*. 2021 Dec;19(1):31.
60. Divala T, Burke RM, Ndeketa L, Corbett EL, MacPherson P. Africa faces difficult choices in responding to COVID-19. *Lancet* [Internet]. 2020 May 23 [cited 2021 Feb 19];395(10237):1611. Available from: <http://www.thelancet.com/article/S0140673620310564/fulltext>
61. Fore HH, Dongyu Q, Beasley DM, Ghebreyesus TA. Child malnutrition and COVID-19: the time to act is now. *Lancet* [Internet]. 2020 Aug 22 [cited 2020 Sep 8];396(10250):517–8. Available from: <https://www.who.int/news-room/commentaries/detail/breastfeeding->
62. Headey D, Heidkamp R, Osendarp S, Ruel M, Scott N, Black R, et al. Impacts of COVID-19 on childhood malnutrition and nutrition-related mortality. *Lancet*. 2020;396(10250):519–21.
63. Armstrong J, Oliveira L, Korpi-Salmela K, Lopez J. The Integrated Phase Classification approach as an example of comprehensive system approaches. In: *Food Security Policy, Evaluation and Impact Assessment*. Routledge; 2019. p. 206–18.
64. Abay K, Berhane G, Hoddinott J, Tafere K. COVID-19 and Food Security in Ethiopia: Do Social Protection Programs Protect? *SSRN Electron J* [Internet]. 2020;(November). Available from: <https://openknowledge.worldbank.org/handle/10986/34794>
65. Leroy JL, Olney DK, Ruel MT. PROCOMIDA, a Food-Assisted Maternal and Child Health and Nutrition Program, Contributes to Postpartum Weight Retention in Guatemala: A Cluster-Randomized Controlled Intervention Trial. *J Nutr*. 2019 Dec;149(12):2219–27.
66. Leroy JL, Gadsden P, Rodríguez-Ramírez S, de Cossío TG. Cash and In-Kind Transfers in Poor Rural Communities in Mexico Increase Household Fruit, Vegetable, and Micronutrient Consumption but Also Lead to Excess Energy Consumption. *J Nutr*. 2010 Mar;140(3):612–7.
67. Partners IPCG, IPC Global Partners. Integrated Food Security Phase Classification Technical Manual Version 3.0. Evidence and Standards for Better Food Security and Nutrition Decisions [Internet]. Rome; 2019 [cited 2021 May 3]. p. 1–25. Available from: http://www.ipcinfo.org/fileadmin/user_upload/ipcinfo/manual/IPC_Technical_Manual_3_Final.pdf

Annexes

Annex 1 - Search Strategy

Table A1. Data sources on the impact of COVID-19 pandemic on diet and nutrition, and policies implemented by the authorities.

ACAPS	https://www.acaps.org/countries
COVID-19 and the food and agriculture sector - OECD	https://www.oecd.org/coronavirus/policy-responses/covid-19-and-the-food-and-agriculture-sector-issues-and-policy-responses-a23f764b/
COVID-19 Food Price Monitor – IFPRI	http://tools.foodsecurityportal.org/COVID-19-food-price-monitoring
COVID-19 policy response portal – IFPRI	https://www.ifpri.org/project/covid-19-policy-response-cpr-portal
COVID-19 policy response tracker – IGC	https://www.theigc.org/covid-19/tracker/
Data on the COVID-19 response – UNICEF	https://data.unicef.org/topic/covid-19-and-children/
FAO Food Price Monitoring and Analysis (FPMA) tool	https://fpma.apps.fao.org/giews/food-prices/tool/public/#/dataset/domestic
Big Data tool on food chains under COVID-19 pandemic	https://datalab.review.fao.org/
FEWS NET COVID-19 and Food Security	https://fewsn.net/covid-19-pandemic-impacts-food-security
Food and Agriculture Policy Decision Analysis Tool – FAO	http://www.fao.org/in-action/fapda/tool/#main.html
Food Price Monitoring and Analysis – FAO	http://www.fao.org/giews/food-prices/home/en/
Food Security Portal	http://www.foodsecurityportal.org/COVID-19
Global Nutrition Cluster (GNC) support dashboard	https://app.powerbi.com/view?r=eyJrIjoiy2I5YmJmMDltZmJmMi00NDk4LTgyNmItMzViZGE2ZTM5OTVhIiwidCI6IjYjA1YzYyLTQ5ZGItdmJmMi05Zjg5LW11ZjQ3MjQzNzg5NiJ9
IFPRI: Food Export Restrictions during the COVID-19 crisis	https://public.tableau.com/profile/laborde6680#!/vizhome/ExportRestrictionsTracker/FoodExportRestrictionsTracker
Impact of COVID-19 on SMEs in the food system - SUN	https://scalingupnutrition.org/news/impacts-of-covid-19-on-smes-in-the-food-system/
Integrated Food Security Phase Classification portal	http://www.ipcinfo.org/
LSMS-Supported High-Frequency Phone Surveys on COVID-19	https://www.worldbank.org/en/programs/lsmis/brief/lsmis-launches-high-frequency-phone-surveys-on-covid-19
Office for the Coordination of Humanitarian Affairs (UN OCHA)	https://fts.unocha.org/appeals/952/flows
Oxford Tracker of Government Response	https://www.bsg.ox.ac.uk/research/research-projects/coronavirus-government-response-tracker
Policy response to COVID-19 – IMF	https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19
Sistema de Información Nacional de Seguridad Alimentaria y Nutricional de Guatemala.	www.siinsan.gob.gt
The Market Monitor – WFP	https://www.wfp.org/publications/market-monitor
WFP Dashboard Covid	https://dataviz.vam.wfp.org/Dashboards/Hunger-Snapshots-Countries
WFP HungerMap LIVE: Hunger and COVID-19 Weekly Snapshot	https://www.hungermap.wfp.org

Google search and RSS feed search strings:

- COVID AND (food OR nutrition) AND guatemala site: FAO.org OR site: WFP.org OR site: UNICEF.org OR site: WHO.org OR site: UNDP.org OR site: IFAD.org OR site: WorldBank.org OR site: OECD.org OR site: IMF.org OR site: Europa.eu OR site: scalingupnutrition.org OR site: IFPRI.org OR site: GAIN.org OR site: OXFAM.org OR site: Savethechildren.org OR site: Actionagainsthunger.org filetype:pdf (the first 300 results pages ordered by relevance were consulted).
- COVID AND (food OR nutrition) AND guatemala site:incap.int OR site: sesan.gob.gt/ OR site:nipn-nutrition-platforms.org/ OR or site:mspaspas.gob.gt/ filetype:pdf (no relevant results)

Annex 2 – List of Guatemalan institutions contacted for the stakeholder consultation.

- Asociación para la Prevención y Estudio del VIH/Sida (APEVIHS)
- Center for Studies of Sensory Impairment, Aging and Metabolism (CeSSIAM)
- Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ)
- EU Delegation Guatemala
- Food and Agriculture Organization (FAO)
- Instancia de Consulta y Participación Social (INCOPAS)
- Instituto de Nutrición de Centro América y Panamá (INCAP)
- National Information Platforms for Nutrition coordinator (NIPN) Guatemala
- Pan-American Health Organization (PAHO)
- Scaling Up Nutrition (SUN) Guatemala
- Secretary of Food Security and Nutrition (SESAN)
- Tropical Agricultural Research and Higher Education Center (CATIE)
- United Nations International Children's Emergency Fund (UNICEF)
- Universidad de San Carlos, Guatemala
- Universidad del Valle de Guatemala
- World Food Programme (WFP)