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HONDURAS: THE IMPACT OF COVID-19 AND POLICY IMPLICATIONS

SECOND REPORT

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BACKGROUND

Due to the global pandemic generated by COVID-19 the government of Honduras declared a “state of emergency” in February (“Estado de Emergencia en el Territorio Nacional a través del Decreto Ejecutivo Número PCM- 005-2020, 10 de febrero 2020). The country suffered the first confirmed COVID-19 case on March 12th, 2020. The first death was registered on March 26, 2020.

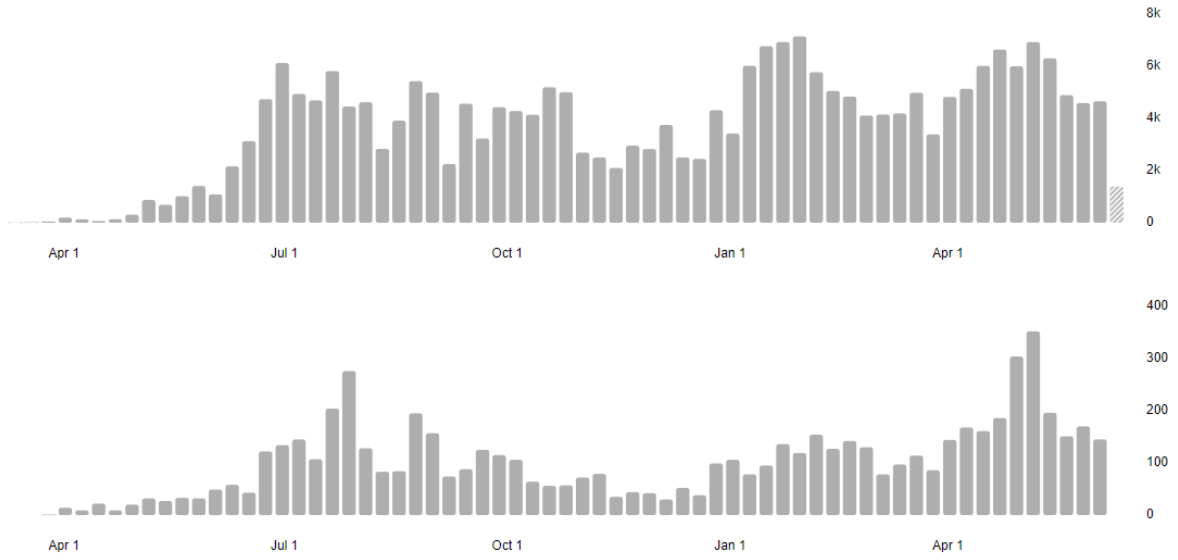
This document updates a previous report (Díaz Bonilla, Laborde, and Piñeiro, 2021) on the impact of the COVID-19 pandemic on food systems in Honduras. First, it brings up to date the evolution of the pandemic, using different indicators. Second, it summarizes the main policy responses, costs, and financing. Third, it updates the evolution of key variables up to the time of this writing (June 2021). Fourth, there is a more detailed analysis of the evolution of some food value chains that are central for food consumption in Honduras. Fifth, main results for 2021 and 2022 of previous modeling work are briefly presented. A final section discusses policy considerations in light of the updated analysis.

EVOLUTION OF THE PANDEMIC

Since the beginning of the pandemic and until this writing, there have been 247,074 confirmed cases of COVID-19 in Honduras with 6,599 deaths (WHO 2021).

Chart 1 shows the daily evolution of cases (top panel) and of deaths (lower panel) (note the difference in scale of the right axis).

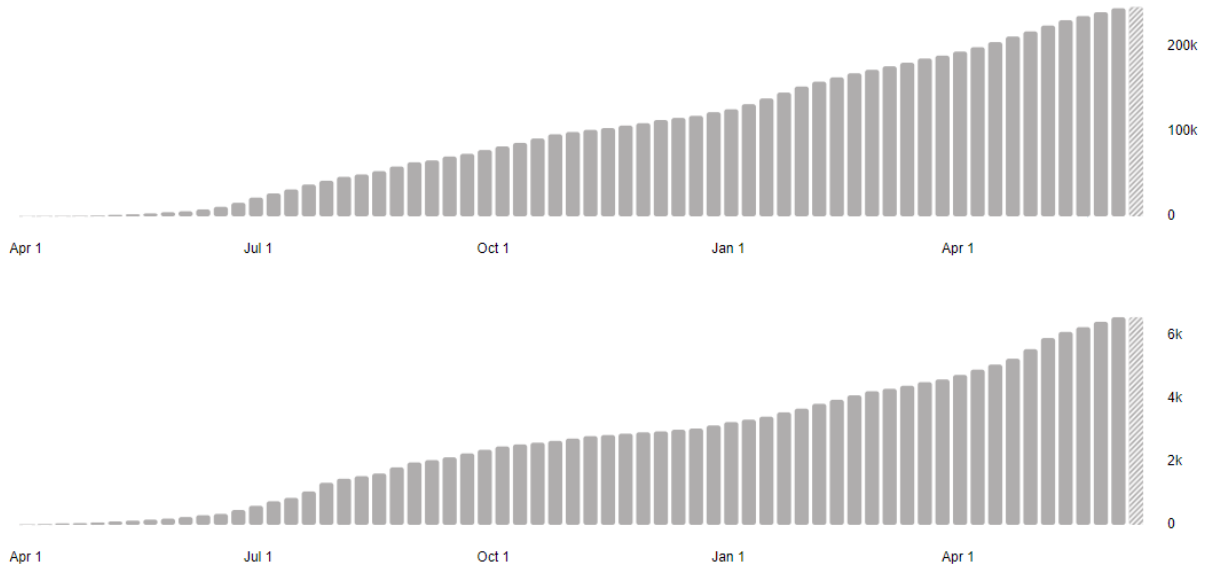
Chart 1. Daily Evolution of Cases and Deaths Related to COVID-19



Source: WHO, 2021

Chart 2 shows the same variables but with the daily values accumulated.

Chart 2. Cumulative Value of Cases and Deaths Related to COVID-19

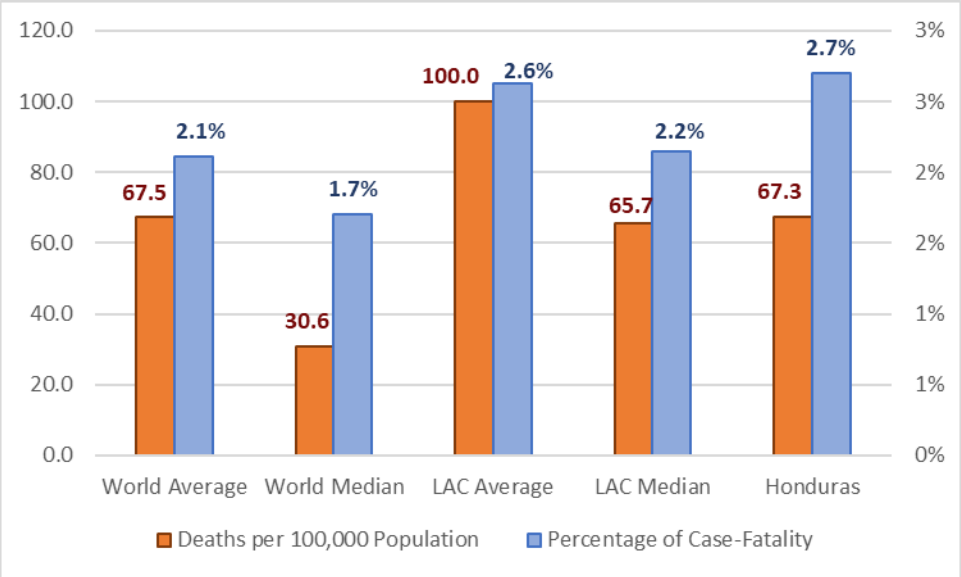


Source: WHO, 2020

The evolution of cases and deaths shows different recurring waves, with the pandemic so far peaking in April 2021 with regards to deaths. As the Delta variant continues to generate new cases, it is still unclear if the pandemic has reached its heights and if cases and deaths will rise again. The uneven development of the waves may be related to the back and forth in policy initiatives and measures taken by the government as discussed later.

Chart 3 uses two indicators, death per 100,000 population and the percentage of fatality to cases, to compare the conditions in Honduras to the world and Latin America and the Caribbean (LAC).

Chart 3. Deaths per 100,000 Population and Percentage of Case-Fatality



Source: Johns Hopkins University

Considering the indicator of deaths per 100,000 population, Honduras is below the world average, above the world median, and above the LAC median, but below the average (which is driven by high values in a smaller number of countries, particularly Peru, Brazil, Argentina, and Colombia). Regarding the rate of fatalities per case, the country appears above the comparators, including above the average in LAC (2.6% against 2.7% in Honduras).

POLICY RESPONSES

The Government of Honduras (GoH) took a series of measures, which are presented here organized in four groups:

1.The general legal and organizational framework to confront the pandemics

2. Policies and interventions that address the health problems

3. Policies and interventions that sustain incomes and demand through social safety nets

4. Policies and interventions that operate on the supply side, focusing on production and employment

They were covered in a previous report up until about October 2020. Here is a brief recap and update.

General legal framework and governance

A basic requisite to confront the pandemic is to have a general legal framework for the needed policies and interventions to be defined, and a coordinating mechanism for decision making and implementation.

State of Emergency

As noted, the government declared the “state of emergency” relatively early on February 10th, 2020. It was pretty wide in the coverage, suspending work, in the Public and Private Sector; prohibiting “events of all types and numbers of people are prohibited;” suspending the operation of public transport; suspending as well face-to-face religious celebrations; prohibiting the operation of businesses including shopping centers; and closing “all air, land and sea borders in the national territory.”

But at the same time, there was a large list of exceptions, as noted in the previous report. The combination of strict policies but also with many exceptions and perhaps lax enforcement will be commented on below.

Central coordination

Honduras has an emergency management system, called Sistema Nacional de Gestión de Riesgo (SINAGER), which seems to have operated as a coordinating mechanism within the public sector.

On May 16, the Council of Ministers approved the Decree PCM-045-2020 that established a multisectoral body integrated by the private sector, civil society, churches, academia, maquiladoras, farmers, and the Government, with the task of advising SINAGER on the process of opening and reactivating the economy.

Policy responses related to health aspects

Health-related policies were initially discussed in three main categories: a) those designed to prevent or reduce contagions; b) those designed to track and isolate existing cases; and c) those designed to treat the sick. Now, with the development of vaccines, a fourth category of policies must be considered: the advances of the vaccination program.

Policies to prevent or reduce contagions

As noted, the government of Honduras implemented a series of measures that basically closed the economy on March 16, 2020, with only essential services allowed to operate, and access to retail grocery stores was restricted to certain hours and depending on the day and the last digits of the document of identification.

Since April and May 2020, the government started a process of re-opening some other activities including hardware stores, maquila activities, restaurants with delivery services, construction (depending on the priority of projects), and some government services. But some of these authorizations were reversed during June, due to increases in cases.

Honduras began to reopen the economy on early June 8, 2020, according to a plan that divided the country into three regions, which need not to be contiguous, based on the number of confirmed cases and population sizes in the municipalities included in each region. The regions with municipalities with the fewest cases were supposed to implement a three-phase reopening (with 60 percent of workers returning to their jobs), while the region with most cases had implement five phases (starting with 20 percent workers returning).

The country started Phase 1 in late July (except some municipalities that remained in Phase 0 due to high rates of incidence of COVID-19), but there have been returns to previous phases, depending on the evolution of the pandemic, which as noted in a previous section continues to move in waves without appearing to have peaked. The two main cities (Tegucigalpa and San Pedro de Sula) have been the ones with most restrictions.

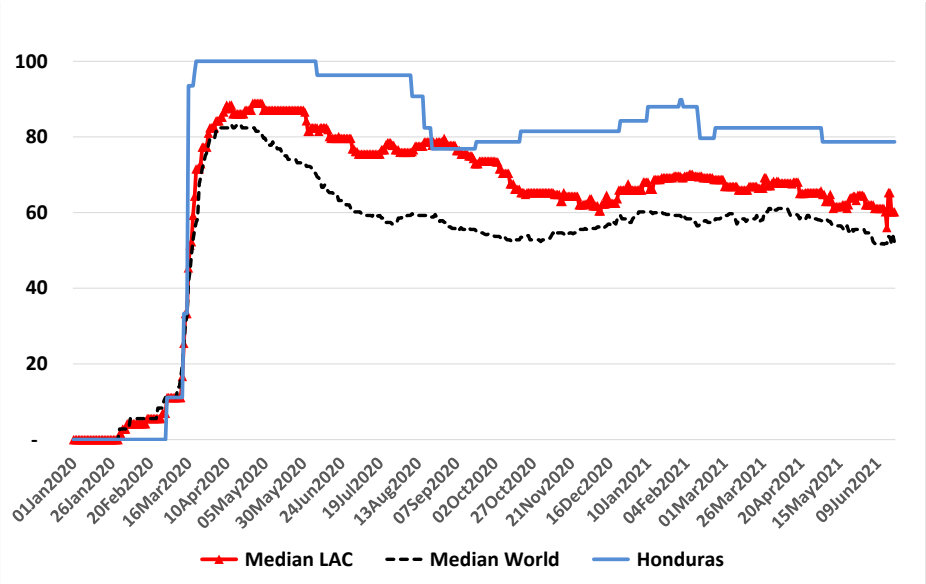
In August 2020 the government reopened national frontiers (but people entering the country had to present negative Covid test results), and in October, restrictions on freedom of movement were largely lifted and the duration of the nighttime curfew was reduced. However, the national state of emergency has remained in place. The night-time curfew was extended in some regions in November after tropical storms Eta and Iota, and since January, because some surge in Covid cases.

The lifting of restrictions since August 2020 can be appreciated visually using the “stringency index” calculated by the Blavatnik School of Government of Oxford University (Chart 4).[1] The chart compares the value of the index for Honduras with the median of values in the database for LAC countries and for the world.

Honduras seems to have been applying stricter controls to movements and activities compared to the median of the world and LAC, even after the relaxation of measures in August 2020. However, the data on mobility discussed below paints a different view of the real application of those controls.

[1] See the project by Oxford University “COVID-19 GOVERNMENT RESPONSE TRACKER” https://www.bsg.ox.ac.uk/research/research-projects/covid-19-government-response-tracker. The indicators included in the index include a) closings of schools and universities; b) closings of workplaces; c) canceling of public events; d) restrictions on gatherings (by the number of people involved); e) closing of public transport; f) stay at home requirements; g) restrictions on internal movements; and h) restrictions on international travel.

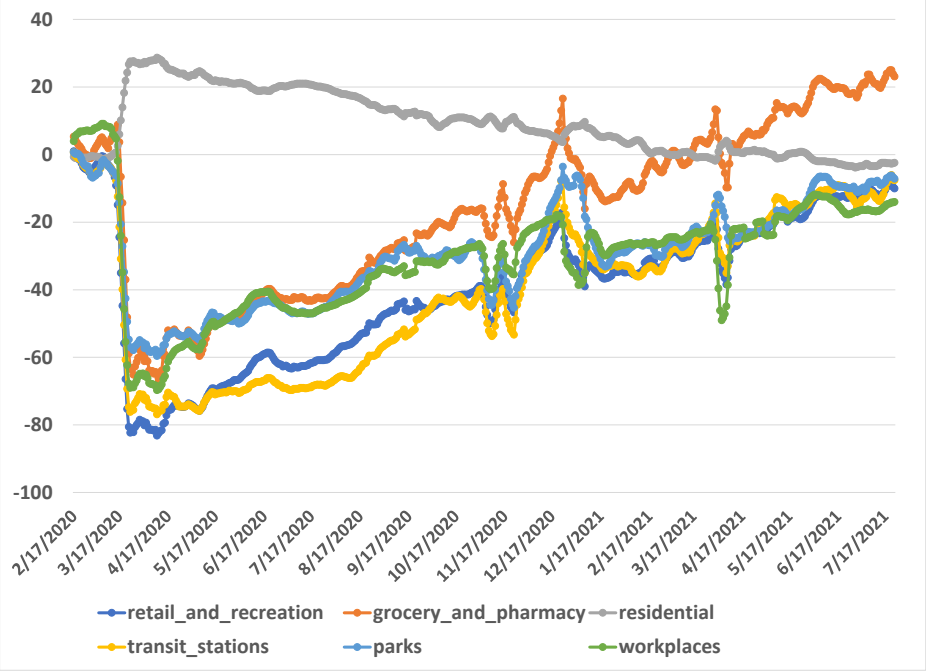
Chart 4. Stringency Index-Honduras



Source: authors using Oxford University “stringency index”

Chart 5. Changes in Mobility (Percentage from Baseline)

The impact on mobility (and therefore on economic activity) of these restrictions can be seen in Chart 5.



Source: Google COVID-19 Community Mobility Reports

The data tracks mobility trends and compares them with pre pandemic values for six categories of activities “Retail and recreation” (places like restaurants, cafes, shopping centers, theme parks, muse-

ums, libraries, and movie theaters); “Grocery and pharmacy” (places like grocery markets, food warehouses, farmers markets, specialty food shops, drug stores, and pharmacies); “Parks” (places like national parks, public beaches, marinas, dog parks, plazas, and public gardens); “Transit stations” (places like public transport hubs such as subway, bus, and train stations); “Workplaces” (mobility trends for places of work); and “Residential” (mobility trends for places of residence) (see details in https://support.google.com/covid19-mobility/answer/9825414?hl=en). It shows mobility compared to the previous period without COVID-19. Negative, zero, or positive values indicate that mobility for the category considered were below, equal, or above, respectively, compared to the levels of the equivalent time of the year before the pandemic.

Chart 5 shows the daily values of those indicators, starting with February 2020 and ending in July 2021 with the last data reported at the time of writing this report. In February 2020, when no measures of containment were in place, it is clear there were no visible changes with respect to the baseline mobility. In March and April, however, there was a large drop in mobility, in line with the strict lockdown conditions. Over time, and notwithstanding the continuation of apparently strict controls on mobility (as measured by the “stringency index” shown before), people started to circulate more, particularly for groceries and pharmacy in general, and for the other indices around the time of end-of-year festivities in 2020. Now the index for groceries and pharmacy is 20% above the levels pre-pandemic with most other indices approaching parity with previous mobility patterns, except for workplaces that is still 14% below previous values.

Policies designed to track and isolate existing cases

Policies about testing are usually classified into four levels: a) No testing policy; b) Only to those who (a) have symptoms and also (b) meet specific criteria (e.g., key workers, admitted to hospital, came into contact with a known case, returned from overseas); c) Testing of anyone showing COVID-19 symptoms; d) Open public testing (e.g., “drive-through” testing available to asymptomatic people). Honduras is in the b) category (Hale, Webster, Petherick, Phillips, and Kira (2020)).

Honduras is classified as a country with limited contact tracing (in between no tracing and comprehensive tracing) (https://ourworldindata.org/grapher/covid-contact-tracing).

However, there is no available data on the number of tests to be able to compare Honduras with the LAC and the world.

Policies designed to treat the sick.

The government has taken a series to measures to strengthen health services as shown in Box 1 (from IFPRI Policy Tracker).

Box 1. Health Measures

Measure	Date	Detail
Financial support for health sector	3/23/2020	The Honduran Government has estimated an investment of 25 million dollars to face the national emergency, aimed at reinforcing health personnel, medical supplies and construction of 90 hospitals.
Financial support for health sector	7/27/2020	The Government, through the Ministry of Health, will make a disbursement of 12 million lempiras to the Gabriela Alvarado Hospital for its strengthening and thus provide a greater response to the demands of medical personnel and patients.
Financial support for health sector	7/27/2020	Government Delivers 2 Million Lempiras In Medical Supplies And "MAIZ" treatments For Hospital Gabriela Alvarado. MAIZ is the government treatment of treating those with moderate COVID-19 symptoms with an experimental combination of microdacyn, azithromycin, ivermectin, and zinc.
Financial support for health sector	7/27/2020	Five million lempiras will be delivered to the El Paraíso health region to further strengthen the health centers, as well as the acquisition of medicines, oxygen and medical supplies, the hiring of medical personnel and the assembly of the two triage centers in Danlí.
Financial support for health sector	8/7/2020	The Government has transferred more than 8 million lempiras to the mayor's office of Cedros to address the pandemic Mayor’s Office of Cedros To Attend The Pandemic.
Financial support for health sector	8/7/2020	Fuerza Honduras in the department of Olancho begins with an investment of 29,489,179.50 lempiras, distributed in its 23 municipalities to open triages, hire medical personnel, biosecurity equipment, oxygen, stretchers, beds, tests, medical brigades.
Health information dissemination	3/19/2020	TIGO and CLARO will allow, for a period of 30 days, the more than 7 million users free of charge, access to navigate on those platforms enabled by the Government of Honduras to be informed about the evolution of COVID-19.
Health information dissemination	4/10/2020	Transparency portal with COVID-19 information; there will be a Citizen's Accountability module.
Hiring more healthcare workers	4/20/2020	Cuban doctors and nurses arrive to assist Honduran colleagues.
Importation of test kits	3/18/2020	Received reagent for 4,200 COVID tests.
Importation of test kits	3/18/2020	Received 90 phlegm suctioners.
Importation of test kits	5/5/2020	International Organization for Migration, working with USAID, delivered 15,000 COVID-19 tests to Honduras.
Importation of ventilators	3/18/2020	Received 140 ventilators from Government of New York.
Importation of ventilators	4/14/2020	Purchased 130 ventilators, 90 respirators and 90 mechanical phlegm suckers from Partners Medical Supplies, Inc., in the United States, and delivered to the Ministry of Health for distribution based on the priorities of the emergency.
Importation of ventilators	7/3/2020	The Mario Catarino Rivas Hospital received this day 40 mechanical-pulmonary ventilators for the intensive care units of patients with covid-19, which were acquired through Strategic Investment of Honduras (Invest-H).
Importation or donations of PPE	4/14/2020	Acquisition of the alcohol-based gel corresponding to 317,101 gel units in 4oz presentation and 18,286 units in a gallon presentation.

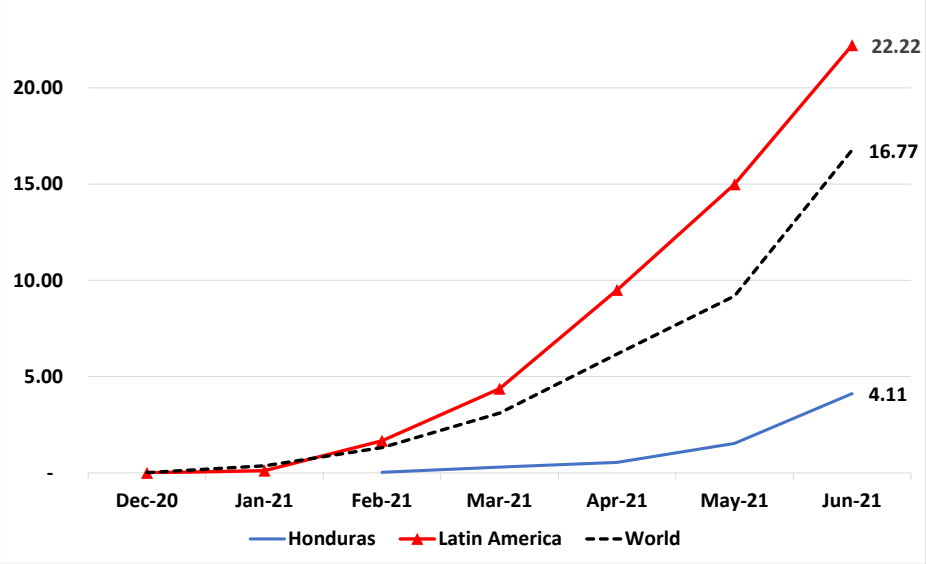
Importation or donations of PPE	8/25/2020	WHO / PAHO Donates 1.5 Million Masks and Other Supplies To Face The Pandemic.
Importation or donations of PPE	11/4/2020	The Ministry of Health together with the Humanitarian Assistance Bureau (BHA) of the United States Agency for International Development (USAID), GOAL Honduras, municipal authorities and the Metropolitan Region of San Pedro Sula today inaugurated hand washing stations as part of the Community Rapid Response Project to the Covid-19 Pandemic.
New facilities for care	4/14/2020	Two primary care centers acquired from DXL Enterprises LLC
New facilities for care	6/12/2020	Doctors Without Borders/Médecins Sans Frontières (MSF) starts caring for critical COVID-19 patients in Tegucigalpa.
New facilities for care	7/6/2020	Triage center enabled at Catholic University.
New facilities for care	7/10/2020	Authorization of more triages and care centers in conjunction with the municipalities, churches, private sector and others "to continue facing the pandemic and reinforcing hospitals with more equipment and supplies."
New facilities for care	8/15/2020	New Triage Center Starts Operating In La Ceiba With Investment from Fuerza Honduras.
New facilities for care	8/27/2020	With Mobile Hospitals, Honduras Will Go From 71 To 530 Intensive Care Units.
New facilities for care	9/5/2020	An intensive care unit was inaugurated in the physical facilities in the Hospital de Especialidades San Felipe del Distrito Central to serve patients with complicated COVID-19 cases. 2 million lempiras donated by Government of Taiwan for infrastructure.
PPE regulations/production	4/8/2020	Masks mandatory when leaving the house and inside authorized businesses
PPE regulations/production	5/25/2020	Use of face masks in public compulsory; New regulations require all individuals to follow and implement social distancing and hygiene measures in both public and private meetings exceeding five people; Penalties, including fines, community service, and/or jail time will be levied for failure to comply with the measures.
PPE regulations/production	7/7/2020	Government Will Deliver 50,000 Masks to Residents of The Cerro Grande Neighborhood.
PPE regulations/production	7/8/2020	Acquired with State Funds: Government Delivers Biosecurity Equipment to Hospitals and Triage Centers In The Capital.
Vaccination protocols	7/23/2020	Honduras ensures its access to the Covid-19 vaccine through the Gavi Covax Mechanism.

Source: IFPRI COVID PolicyTracker.

Vaccination program

The next Chart 6 shows the advances in vaccinations measured as the percentage of the population with at least one dose, comparing Honduras with the median of the world and LAC.

Chart 6. Share of people who received at least one dose of the COVID-19 vaccine per 100 people



Source: Our World in Data

Honduras began vaccinating in February 2021, starting later than other countries in the region and in the world. In early June 2021, Honduras had administered about 1.5 million doses. With about 4% of the population vaccinated with at least one dose, is clearly below the comparators.[2] Currently, the vaccines approved in Honduras are Moderna mRNA-1273, Gamaleya Sputnik V and Serum Institute of India Covishield (Oxford/AstraZeneca formulation) (Nicole E. Basta & Erica E.M. Moodie on behalf of the McGill University COVID19 Vaccine Tracker Team. Available at covid19.trackvaccines.org).

Policy responses related to safety nets

These are basically policies and interventions oriented to sustaining incomes and crucial expenditures of vulnerable populations, separate from the productive activities discussed in the following section.

The main programs in this category in Honduras include the following: [3]

*Cash transfers (conditional and unconditional). There has been an emergency cash transfer program for self-employed and informal workers as support for the Covid-19 pandemic (about 500,000 people of new beneficiaries). A cash transfer was also made available for the repatriation of bodies of people that died due to COVID. A third program has been the extension of the previous Bono 10,000 in urban and rural areas. In addition, UNDP, in partnership with the GoH, launched in October 2020 the Single Voucher program for over 260,000 households. The program consisted of a one-time $82 voucher (L

[2] Other reports suggest that the percentage of fully vaccinated people by June/July was about 1.75%. Considering either of those numbers, Honduras is below the comparators in the pace of vaccination.

[3] Based on the World Bank report on "Social Protection and Jobs Responses to COVID-19: A Real-Time Review of Country Measures." "Living paper" version 15 (May 14, 2021.By Ugo Gentilini, Mohamed Almenfi, John Blomquist, Pamela Dale, Luciana De la Flor Giuffra, Vyjayanti Desai, Maria Belen Fontenez, Guillermo Galicia, Veronica Lopez, Georgina Marin, Ingrid Veronica Mujica, Harish Natarajan, David Newhouse, Robert Palacios, Ana Patricia Quiroz, Claudia Rodriguez Alas, Gayatri Sabharwal, and Michael Weber

2,000) delivered electronically and exchanged for food, medicine and or medical supplies (UNDP 2020).[4]

*In-kind transfers. There have been several programs of distribution of in-kind food and some hygienic products, as part of Honduras Solidaria, the School Feeding Program, and also distribution to elderly in nursing homes, by the Secretaría de Desarrollo e Inclusión Social (Sedis) and the Secretaría de Educación.

*Access to public services. The National Telecommunications Commission (CONATEL) issues a moratorium on suspensions for fixed and mobile telephones, mobile and residential internet services in the country during the COVID-19 pandemic; it allows more flexible payment options.

*Health insurance. The government issued a decree to ensure that workers have access to health care benefits through the Honduran Social Security Institute (IHSS) even when contributions are suspended due to the suspension of work. Also, a fund was created to support the "Plan para la Promoción Solidaria y del Auxilio Recíproco" to increase the social protection coverage and access to essential services, particularly for people in vulnerable conditions.

*Social security contributions. The Private Contribution Scheme (RAP) was supposed to offer its affiliates advances related to the values they have in their Individual Capitalization Account, based on the certification by the companies affected. Also, there was a moratorium on the collection of worker and employer contributions.

The government also enacted during March 2020 a freezing of prices of basic products and personal and household hygiene and health products. Later it instituted maximum prices for 30 products of the basic food basket; this program was discontinued in 2021.

Policy responses related to production and employment

Here the focus is on policies and initiatives oriented to maintaining production and employment, which sustain the supply side of the economy. But, to the extent that those productive activities generate incomes, they also contribute to strengthening the demand side of the economy.

Credit and banking facilities and regulations[5]

Some of the measures implemented were the following, mainly through BANHPROVI (a public bank, that operates as a “first- and second-floor” institution) which was authorized “to take measures to guarantee financing to facilitate access to the productive sectors and to promote risk management and/or refinancing and readjustment of debts to natural or legal persons who are debtors of the financial system belonging to them”:

*As part of that broad mandate BANHPROVI implemented the following initiatives: a) provided different levels of guarantees to cover potential losses on new loans to SMEs and other companies (valued at 1.1 percent of GDP). Funding comes from CABEI, the Central American public regional bank; b) allocated liquidity for about 0.9 percent of GDP to finance loans to SMEs and other sectors affected by the pandemic. Funding comes from CABEI, the Central American public regional bank; c) created a redis-

[5] The list of programs comes mainly from the IMF and IFPRI COVID policy trackers.

count facility funded with accumulated profits of the bank for loans restructured as a result of the pandemic (0.7 percent of GDP); d) announced a 3-month moratorium on service of its bank loans (which covered about 5 percent of total bank credit to the private sector) and later reprogrammed the loans in the case of borrowers that had been affected longer-term in their payment capacity; and e) made available to banks 200 million lempiras to reactivate the construction industry

*The government also decreed different schemes of temporary debt service relief to companies and individuals with incomes affected by the pandemic, which financial institutions must comply with. These debt service relief must be extended without penalties or impact on credit classification.

*There were expanded credit options through Crédito Solidario and the Entrepreneurship Service (SENPRENDE) to serve 5,000 entrepreneurs.

* The government announced financial support for private companies. HNL $3,000 million would be available to lend for small companies of less than 10 workers to allow employers to provide salary payments during this emergency period.

Monetary policy

In 2020 and 2021 the Central Bank of Honduras cut the policy rate several times starting in February 10 by 25 basis points to 5.25%; after the first deaths and with the beginning of the lockdown, it cut it a further 75 basis points to 4.5% on March 24; and on August 3, a further cut of 75 bps, to 3.75%. It continued cutting the policy rate in December 2020 and January 2021, for a cumulative cut of 225 bps (and now is 3%). The Central Bank also expanded liquidity through different mechanisms by about 3.5 percent of GDP (IMF, Policy Tracker).

Employment.

There were several measures to support employment and wages. Some of those included:

*Wage support/subsidies. Through the “Ley De Auxilio Al Sector Productivo y a Los Trabajadores Ante Los Efectos de la Pandemia Provocada por el Covid-19 – Decreto 33-2020” it was instituted a “Solidarity contribution for the temporary maintenance of jobs and income for workers during the validity of the national emergency.” The purpose of the Law is that during a process of suspension of employment contracts before the Secretary of State in the Offices of Labor and Social Security due to the national health emergency of the COVID-19 pandemic (coronavirus), job stability is guaranteed, as well as the granting of a solidarity contribution, which ensures the survival of the workers and which, for the purposes of this Law, does not constitute a salary. The main objective has been to maintain jobs and the sustainability of companies, “in order to mitigate any measure that leads to the definitive termination of employment contracts and closure of companies during the validity of the national health emergency.” Workers who are subject to a suspension of contracts due to force majeure derived from the National Health Emergency may receive a temporary solidarity contribution, which may be financed in the following way:

A) For workers who are affiliated with the Private Contribution Scheme (“Régimen de Aportaciones Privadas”), with the contributions made for this purpose by the State, the Private Sector and the Private Contribution Scheme (RAP). B) For workers who work in companies covered by the Free Zone Regime (Maquila), with contributions made by the State and the Private Sector for this purpose.

B) For workers who are affiliated to the Private Contribution Regime (RAP), the company will make a contribution in the amount of L.2,000.00, and the rest, until reaching a total of L.6,000.00, will be covered with contributions from the RAP and the State. For workers who work in companies affiliated with the Honduran Association of Maquiladoras (AHM), the company will make a contribution in the amount of L.2,500.00, and the rest will be covered by the public sector until reaching a total of L.6,000.00.

*Other measures related to labor markets included the following: a) employers may grant on account of vacations, the days that workers do not show up to work in their ordinary day due to the State of National Health Emergency; b) the GoH will provide training for employment in a variety of activities (such as tourism, administration, information and communication technologies), office automation and entrepreneurship; c) authorization of teleworking for employees of public and private entities; and d) authorization to employers and workers to use holidays and vacations, with guarantees that holidays recognized in the Labor Code be accepted and paid during the time of national emergency.

Agriculture.

The sector has received special attention.

*Early on it was declared that the food-producing sector and the food agribusiness were a national priority. The "Food Security and Sovereignty Assurance Program" was created under the Secretary of State in the Agriculture and Livestock Offices (SAG) with the purpose of achieving an “orderly” system of national food production, with registration and traceability of the farms and the categorization of national and foreign producers.

*BANHPROVI made available lines of credit to banks, cooperatives, microfinance companies and rural savings banks, so that they could process the applications for "Agro credit 8.7."

*There was a special allocation of 200 million lempiras to provide technical assistance to producers of the Dry Corridor.

*A Productive Solidarity Bonus was granted to 190,000 small producers planting of beans, corn, rice, vegetables, fruits, and other products.

*A registry of ejidal, fiscal and national lands was created under the Secretary of State in the Offices of Agriculture and Livestock to monitor the effective use of the land and ensure the land was available to national producers for food production.

• A single permit was established for the operation during the pandemic of agricultural production projects, food collection and distribution centers and economic agents in the food supply chain.

•The Honduran Institute of Land Transport was directed to authorize all pending resolutions and permits for transportation of food products within 10 business days.

• The obstruction of public roads that impede the passage of workers from the agro-industry and the food supply chain was prohibited.

*The National Congress approved a decree authorizing the National Development Bank Agrícola (BANADESA) to grant to farmers whose farms were auctioned since 2005, the first purchase option to that land. The producers would also receive credit under favorable conditions to reactivate their productive units.

Tax changes

The government of Honduras implemented a variety of tax changes to support firms and households affected by the pandemic.

Basically the “Law of Assistance to the Productive Sector and Workers Faced with the Effects of the Pandemic Caused by Covid-19 (Decree 33-2020) determined the extension of terms and additional relief in terms of tax obligations. The law was approved in March. An extension was granted to taxpayers categorized as small and medium taxpayers and to natural persons and independent professionals for the presentation and payment of a variety of taxes from 2019 (the Income Tax, Solidarity Contribution and Net Assets Tax Return; the presentation and payment of the declarations of the Contribution of the Social Sector of the Economy; Specific Single Income Tax on Lease or Rental of Homes or Apartment Buildings; Special Contribution on Operating Surpluses obtained by Private Universities, Schools and Institutes of Preschool, Primary and Middle Education; and to the Social Contribution of the Cooperative Sector). The extensions varied by taxes and by the dates due, but many were moved to June and then some extended further to August, October and December, depending on when they were due in 2020.

For taxpayers who will keep their employee payroll respecting the payment of wages and rights, an additional 10% will be recognized as a deductible expense for the 2020 fiscal period.

Other measures include a) small and medium taxpayers who submitted a declaration and payment by April 30, 2020, would get a discount of 8.5%; and b) some procedural lenience to those that were not in compliance or missed deadlines; c) taxpayers who do not operate within the months decreed as a state of emergency are granted an extension of the deadlines for filing and paying the VAT return.

Finally, the Legislative Decree Number 85-2020 established facilities for the payment of Municipal Taxes, authorizing the municipalities to grant discounts (up to 10%) for prompt payment of the taxes on goods and on real estate of the year 2020, and some postponement for the dates of payments under certain conditions.

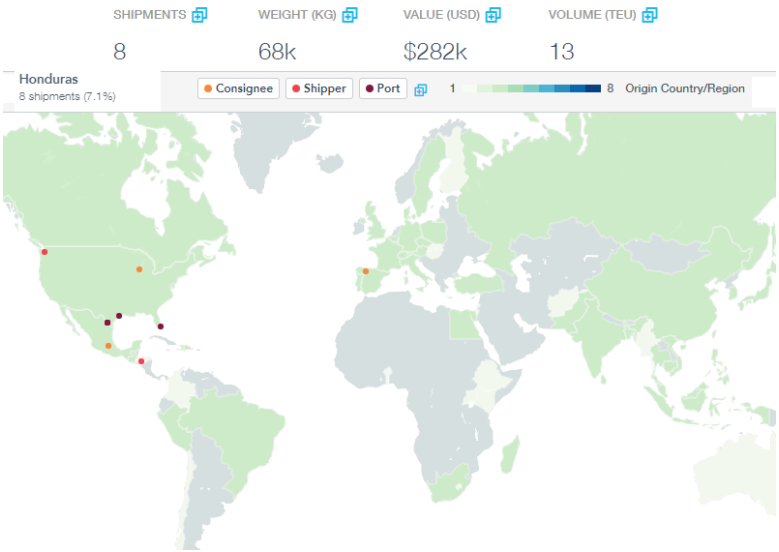
Other measures

There were other measures aimed at simplifying administrative procedures such as the implementation of electronic commerce mechanisms and electronic signature authorization to import raw materials and supplies in free zones; the recognition of the electronic signature and certificates of foreigners; and the celebration of contracts and commercial business through virtual mechanisms during the quarantine.

Trade

There was a temporary export ban on certain dried leguminous vegetables, including specifically red beans. The export of red beans has been controlled since the last price increase of 2016. As one of the top food items of the basic consumption basket, every shipment of beans outside of Honduras requires an approval letter by the Minister of Agriculture. The complete ban was discontinued early on, even before the ETA and IOTA storms. However, every time there is a climate alert (drought or excessive rain), the ministerial authorities do not process requests for exports. In the last two years (Aug 2019-Aug 2021) which cover all of the period of the pandemic, only 68MT of red beans appeared to have been shipped by sea in a trade database (see Chart 7 below).

Chart 7. Red bean exports from Honduras in the last two years



Source: Panjiva 2021

COSTS AND FINANCING

The different measures mentioned above are estimated to have increased the fiscal deficit of the Non-Financial Public Sector to 4% of GDP in 2020, when the 2019 deficit was 1% (IMF, Policy tracker).

The additional spending related to the pandemic is estimated in 2.1% of the GDP, allocated as shown in Table 1.

Table 1. Additional Spending Relating to the Pandemic

	As % GDP
Emergency healthcare expenditures	0.9
Temporary unemployment benefits to formal workers	0.6
Food aid to poor families	0.2
Cash transfers to informal workers	0.4
Total	2.3

Source: IMF, Policy tracker.

It is estimated that there has been a decline of taxes as a result of the economic recession (1.5% of GDP), plus the reductions approved by Congress (corporate income tax for about 0.5% of GDP; temporary VAT exemptions for medical supplies for about 0.1% of GDP; and the one-off income tax credit (10 percent of salary expenses) for companies maintaining pre-crisis employment levels) (IMF, Policy tracker).

Part of these additional fiscal costs are supposed to be covered by reassigning nonpriority spending. But other will be financed by additional borrowing.

Congress approved additional public borrowing in the amount of 2,500 million dollars in 2020-21 (or about 10% of GDP), increasing the Non-Financial Public Sector deficit to 4% and 3% of GDP in 2020 and 2021, respectively. Later in November 2020, the fiscal deficit limits were increased to 5% and 4% of GDP in 2020 and 2021. After tropical storms Eta and Iota, the maximum deficit was further increased to 5.6% in 2020, but it was maintained to 4% for 2021. But in May 2021 deficits were revised up by Congress to 5.4% and 2.3% percent of GDP in 2021 and 2022 respectively, before returning to the 1% deficit in 2023.

The Central Bank of Honduras also increased liquidity through different measures (plus reducing the interest rates as discussed before) to help finance the additional lending mentioned in previous sections). The IMF estimates that direct liquidity operations (by April 2021) represented 2.1% of GDP, with 1.2% in guarantees and 0.9% in other operations.

The fiscal stimulus, financed through increased indebtedness and money printing, has been a necessary policy response to expand health services and investments and to avoid a larger breakdown in economic activity and social conditions. In Honduras, as in the case of many countries worldwide, questions regarding how to deal with increased debt to GDP ratios and the monetary expansion could only begin to be addressed when the pandemic is under control.

Table 2 shows the evolution of government debt (internal and external) as a percentage of the GDP.

Table 2. Government Debt (internal and external)

	2017	2018	2019	2020	2021	2022	2023	2024	2025
Central Government Debt	40.1	42.2	44.9	52.9	53.7	53.4	51.6	51.3	49.3
External	30.5	31.0	30.8	37.7	39.1	37.7	35.6	32.5	29.3
Domestic	9.6	11.2	14.1.	15.2	14.6	15.7	16.0	18.8	20.0

Source: IMF 2020

Debt as a percentage of the GDP jumped in 2020 by about 8 percentage points. This was related both to the additional indebtedness but also to the decline in GDP. IMF projections suggest a modest reduction of the ratio over time, but without returning to the levels before the pandemic. Still, the ratio of debt to GDP does not seem excessive.

INTERNATIONAL CONDITIONS AND SHORT-TERM IMPACTS

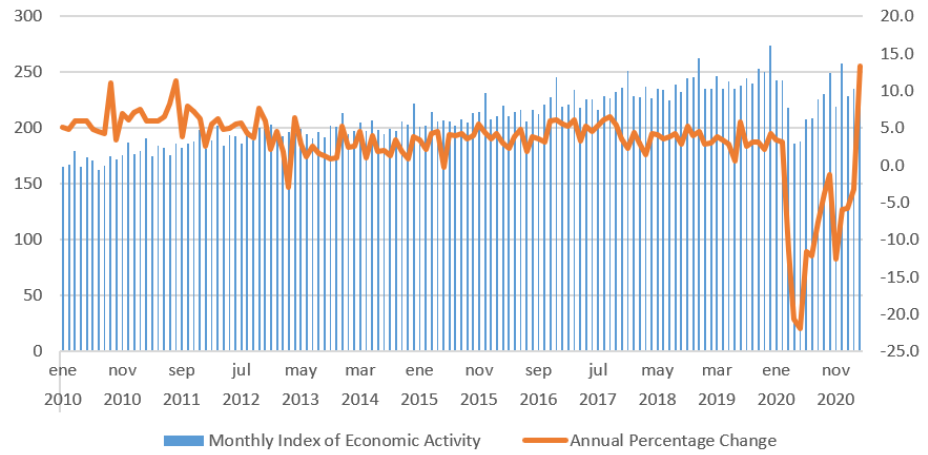
Before the pandemic the economy of Honduras was growing above the average for LAC as a whole: about 1.8% annual growth in GDP per capita between 2010-2019, with inflation (measured by the consumer price index) of somewhat above 4% annually during the same period. The country has multiple strengths, such as a strategic location, a growing industrial base, an open economy with diversification

of exports, and a young and growing population. On the other hand, it faces high levels of poverty: 50.9% of the population at 5.5 USD PPP/capita/day (compared to about 24% for LAC); it is highly unequal with a GINI of 52.1; suffers from high levels of violence (more than 41 homicides per 100,000 inhabitants in 2017), and is very exposed to adverse natural events and climate change (World Bank, 2020 https://www.worldbank.org/en/country/honduras/overview). Honduras is also very dependent on remittances (some 18% of the GDP on average in the 2010s), with emigration pushed by inequality, climate shocks, and violence.

The pandemic has impacted very negatively on an already difficult situation. The economy is estimated to have contracted in 2020 by about 8% in total GDP and 10% in GDP per capita (according to the latest figures of the IMF).

Chart 8 shows the evolution of the Honduran economy since 2010, including the period from January to March 2021. The columns indicate the level of the index of economic activity, while the line shows the monthly rate of change compared to the equivalent month the year before (i.e., is the annual rate of change for that month).

Chart 8. Index of Economic Activity (January 2010-March 2021)

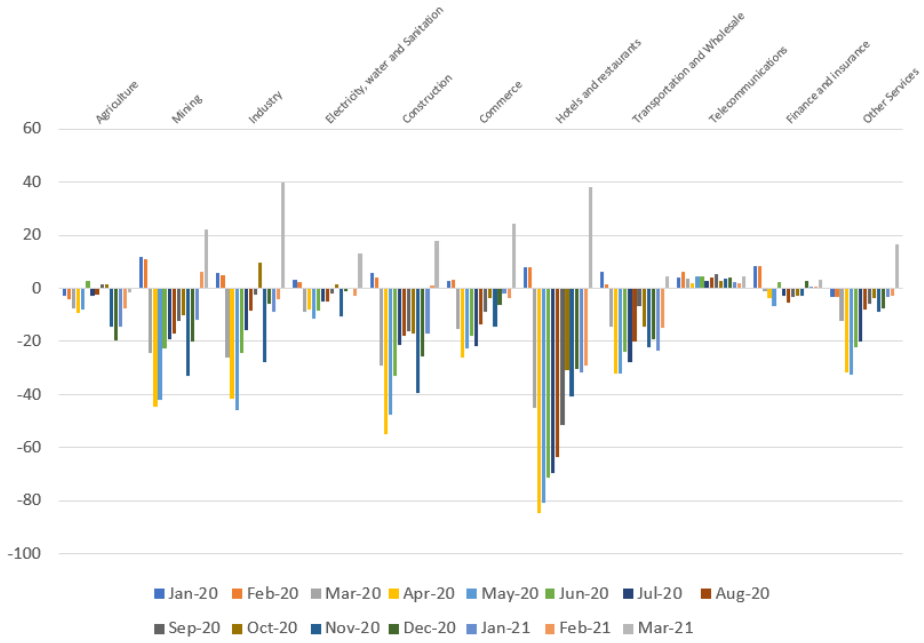


Source: Authors with data from Banco Central de Honduras

It is clear that the large decline in economic activity started in March and reached the lowest point in April. There has been a recovery since then, but still with the level of activity below the previous months). After the decline in economic activity in the first part of 2020, from which the country was recovering, there is a second drop in November as a result of the hurricanes Eta and Iota. IMF growth estimates for 2021 and 2022 do not show returns to the per capita levels of 2019 (more on this below).

Chart 9 shows the same index of economic activity but disaggregated by productive sectors. The numbers shown are the rates of growth for the period of January to March 2021 (the latest data as of this writing), compared to the same month of the previous year.

Chart 9. Index of Economic Activity by Sector (January2020 to March 2021)

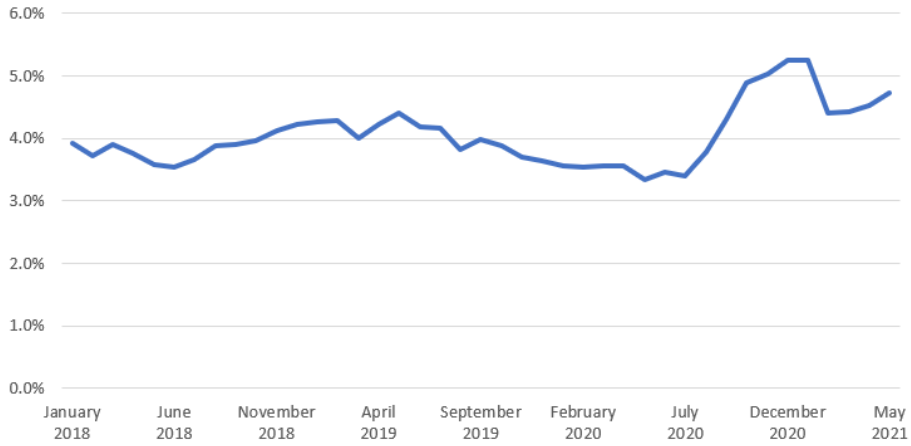


Source: Authors with data from Banco Central de Honduras.

All sectors, except Telecommunications (which in fact increased its activity due to the pandemic), have declined in 2020 compared to the equivalent month the year before. Agriculture had been affected less than other sectors but in November 2020 it can be seen the negative impact of the back-to-back hurricanes. As expected, due to the nature of the policy responses to the pandemic (quarantines and lockdowns, mainly in face-to-face activities), the declines have been particularly deep in Hotels and Restaurants. Other sectors that were badly hit include Construction; Mining; Transportation; and Other Services. In March 2021 there have been overall signs of recovery, with a large increase in activity across sectors; Mining (more than 20%), Industry (40%), Electricity, water and sanitation (by over 10%), Construction (by nearly 20%), Commerce (just over 20%) and Hotels and Restaurants (by nearly 40%). Still, as these are annualized growth rates for a month compared to the lower points reached during the lockdown, they do not imply that the sectors have recovered to the levels previous to the crisis.

Chart 10 shows the annual rate of inflation for the consumer price index (CPI), by month, compared to the equivalent month of the previous year.

Chart 10. Inflation (Annual Change)

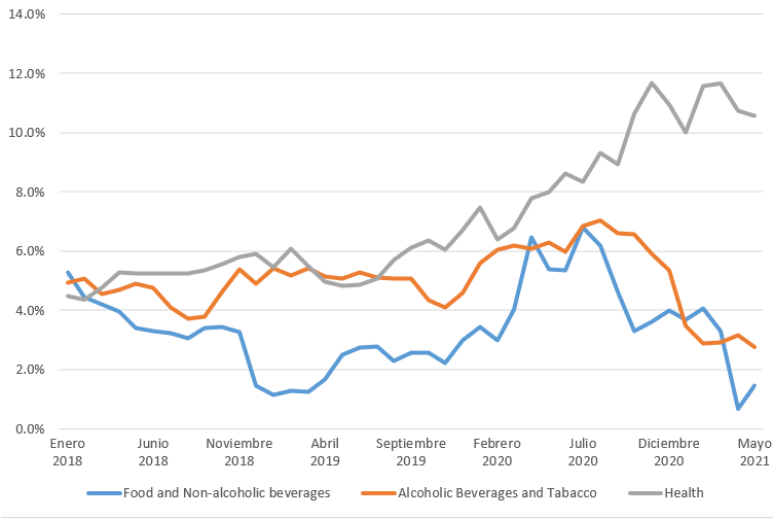


Source: authors with data from Banco Central of Honduras.

The initial recession related to the pandemic had forced a deceleration in overall consumer prices: inflation that was around 4% in annualized terms, dropped to around 3.35% in May-June but then started to increase in the second half of 2020, reaching an annualized rate of 5.25% in December 2020. After that, there has been a deceleration of inflation in the first part of 2021 compared to the second half of 2020, resulting in an annualized inflation level of some 4.7% in May 2021 (latest data as of this writing).

The acceleration of inflation during the second half of 2020 was related mostly of Health Products and has remained above the pre-pandemic levels during 2021 (see Chart 11). Prices for Food and Non-Alcoholic Beverages, and for Alcoholic Beverages and Tobacco also jumped initially during the pandemic, but different from Health Products inflationary pressures have declined at the end of 2020 and the first part of 2021.

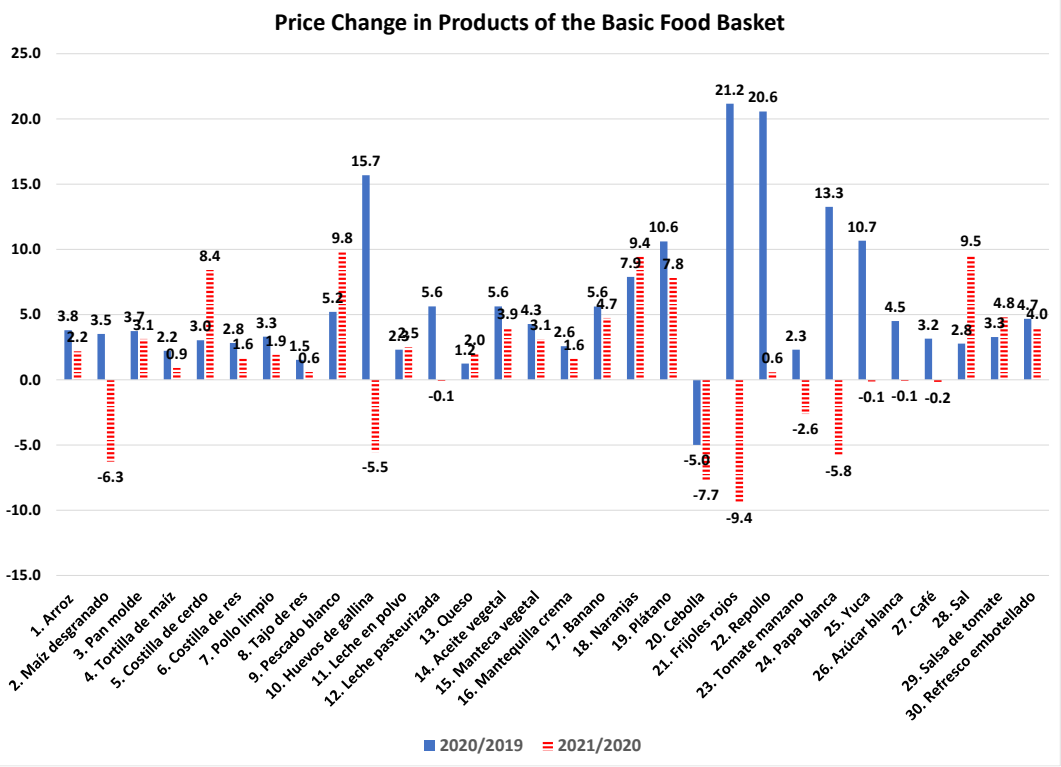
Chart 11. Inflation by Sectors



Source: authors with data from Banco Central de Honduras.

The next chart shows the changes in prices of a variety of food items of the basic consumption basket. There are two comparisons: first the average of 2020 compared to 2019, and then the first half of 2021 compared to 2020.

Chart 12. Price Change in Products of the Basic Food Basket



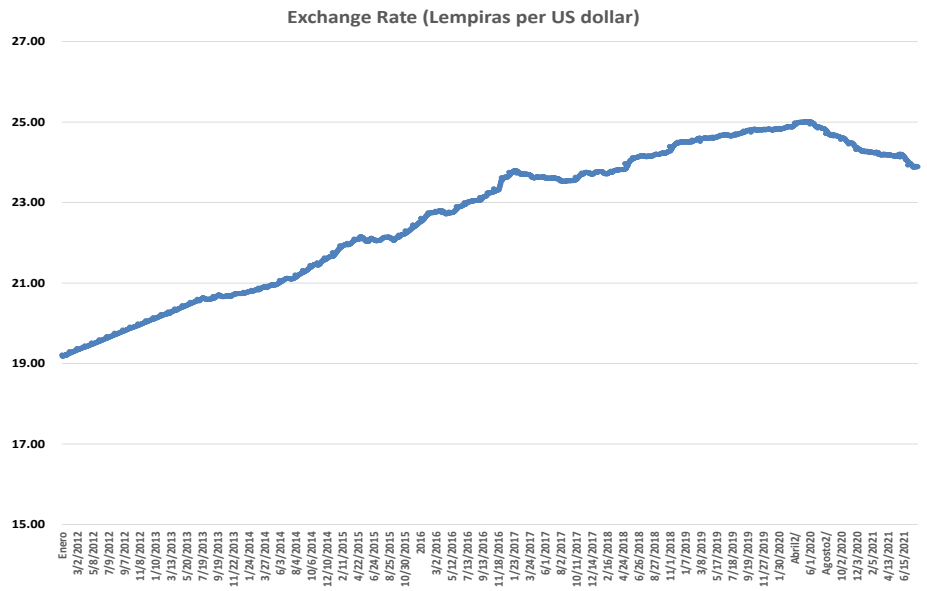
Source: authors with data from Banco Central de Honduras

During 2020 prices jumped more than 10% compared to 2019 in the cases of eggs, red beans, cabbage, potatoes, and cassava. However, in the first half of 2021, the prices of eggs, red beans, potatoes and cassava had declined. Other products that declined in price in the first half of 2021 compared to 2020 include corn, onions, tomatoes, sugar and coffee. Out of 30 food products, 16 saw in 2020 price increases that were less than 4% (the value of the trend inflation of the last years in Honduras) and another seven products had increases of less than 6%. The non-weighted average of price increases in 2020 compared to 2019 was 5.7%; and the same for the first half of 2021 compared to 2020 has been 1.5%.

In other words, although there have been prices increases in 2020 for some food items, in most cases do not seem to have amounted to big shocks, and in the first half of 2021 many prices declined compared to the average for 2020.

The exchange rate (Lempiras per US dollar) has also been depreciating in line with inflation during 2020 and has in fact appreciated somewhat in nominal terms since the second half of 2020. This implies that there have not been inflationary pressures generated by exchange rate devaluations.

Chart 13. Exchange Rate (Lempiras per US dollar)



Source: Banco Central de Honduras

ANALYSIS OF KEY FOOD VALUE CHAINS

This section includes a more detailed analysis of some food value chains, to determine whether the pandemic and the policies applied to control it, may have affected those products. Here the focus is on four products: maize, beans, poultry meat, and eggs (see Annex 1 with people interviewed).

Table 3. Basic Food Products (average 2014-2018)

	Calories (kcal/capita/day)	% total	Proteins (g/capita/day)	% total
Maize and products	742.4	28.2	19.3	31.6
Beans and pulses	110.2	4.2	7.2	11.7
Poultry	91.2	3.5	6.8	11.1
Eggs	15.8	0.6	1.2	2.0
Subtotal	959.6	36.5	34.5	56.5
TOTAL	2630.8	100.0	61.2	100.0

Source: Authors using FAOSTAT

Table 3 shows the importance of those products in food consumption in Honduras, using calories (measured in kcal/capita/day) and proteins (grams/capita/day): they represent almost 37% of the calories and some 57% of the proteins in the consumption of that country. With wheat and products, sugar and palm oil they represent 74% of all calories consumed, and also with wheat and products, but now with milk, those products amount to 79% of the proteins consumed.

In what follows there is first a description of the basic production characteristics of each of the four value chains selected (maize, beans, chicken meat, and eggs) and the channels through which the pandemic have impacted those food value chains. They were selected both because of the importance in the diet, but also because they have a large domestic primary production component and are oriented to the domestic market.[6] Then, there is a discussion of how they have dealt with the challenges imposed by the COVID-19 pandemic.

Brief description of the value chains and effects related to COVID-19

This brief description of the target value chains in Honduras focuses on the most affected functions of each value chain by COVID-19. These functions are access to inputs, technologies, dealing with production conditions and limitations induced by social distancing and other infection prevention practices. Other areas shocked by the pandemic are demand and changes to commercialization schemes as well as support services.

While there is a long list of important basic staples in Honduras, these four value chains provide a compelling story on what actors have undergone to procure inputs, deal with labor restrictions due to social distancing and adjust to the shocks on the shifting demand. As has been learned in the development of this report, actors in these value chains faced the immediate weight of policy responses to contain the virus following the declaration of a national state of emergency, but the promise of support programs such as loans and cash transfers to consumers arrived much later with varying degrees of effectiveness. As months went by, value chain operators have grown more adept to dealing with the situation.

Before, the different policy responses to COVID-19 by the Government of Honduras were discussed. How these policies percolated through different value chain functions is a different question that is only partially answered here, considering the continuous evolution of the conditions under which they operate.

Overall, the news is relatively more positive for the basic food staples sector under study compared to other sectors. Although the impact on tourism, maquila and other areas of the economy has been devastating on jobs and on the population living in poverty[7], food production and consumption has stabilized. Still, the information collected in this paper with respect to the value chains analyzed is not conclusive as the pandemic is still far from over. Continuous collection of field data and interviews with GoH officials and the private sector and closer observation of trade flows concerning imported inputs, grains and feed would be needed.

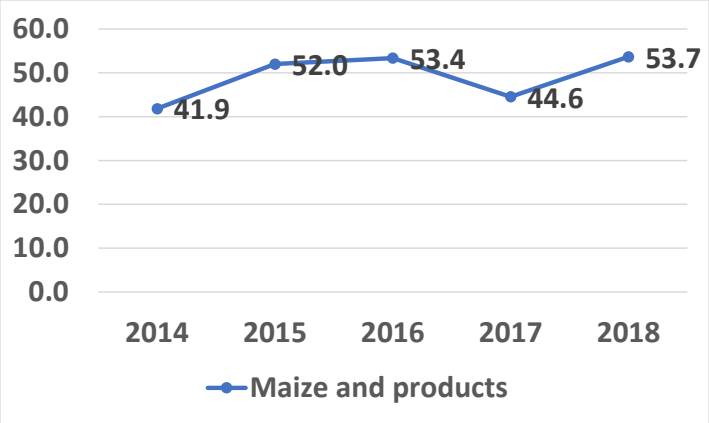
[6] The consumption of wheat and products in Honduras depends completely on imports, and palm oil and sugar are largely oriented to exports and their nutrition value is disputed.

a. Honduras maize value chain

It is necessary to distinguish white maize that is for human consumption mainly in tortillas from yellow maize used as animal feed. The area planted with the latter is limited and the domestic use is from the imported product. White maize is produced by a variety of farmers, but most of them are subsistence farmers.

Next Chart 14 shows the percentage of imports over domestic consumption of maize and products. However, it does not distinguish between white and yellow maize, and the Chart also includes maize products.

Chart 14. Maize and Products: Imports as % of Domestic Consumption



Source: authors with FAOSTAT data

In what follows the analysis is focuses on the white corn food value chain.

Table 4. White Maize

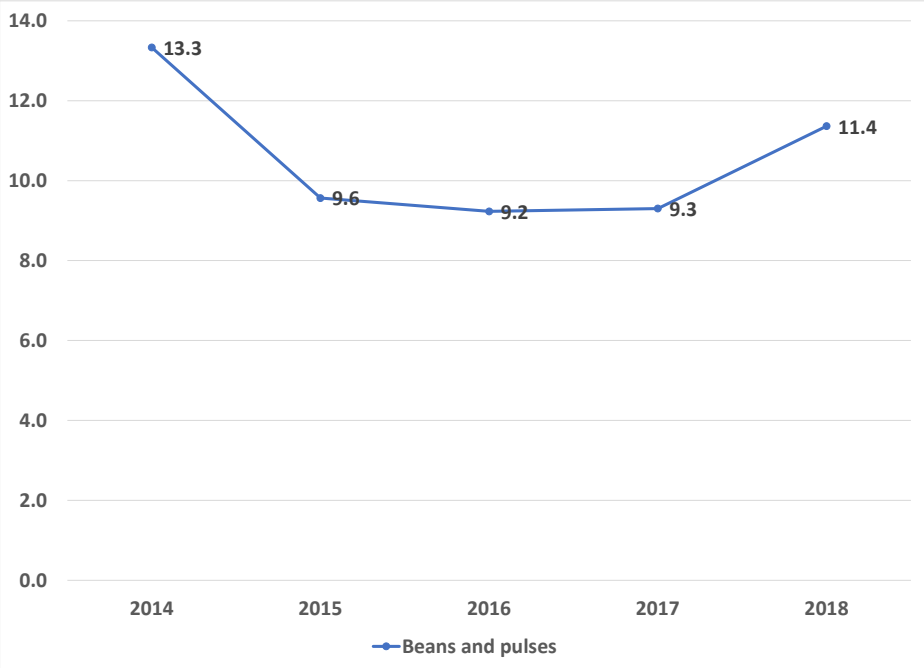
Value Chain Function	Critical value chain characteristics	COVID-19 effects
Input supplies and production	Harvested white maize areas amount to (332,760 ha distributed in the main producing departments (Olancho, Yoro, Santa Bárbara and El Paraíso). Smallholder farmers have traditionally shown low productivity averaging 2.5MT/ha. In general, small farmers cultivate less than 5ha and contribute 41% of the national production. Most of this production comes from low-fertility, marginal lands cultivated with family labor. After decades of development of certified varieties by DICTA in collaboration with CIMMYT, it is reported that nearly 98% of the cultivated area is not with certified seed of improved varieties (DICTA 2020).	Inputs such as certified seed, fertilizers and pesticides increased initially 10-15% on average. Other imported inputs such as plastic bags, paper bags and post-harvest treatments for seed increased in price and were not available during the initial months of the pandemic. Fear of not finding certain products in the usual 1-2kg features led to more purchases in bulk. This is the case of special pesticides and related inputs such as rodamina, a coloring agent in seed treatment. In general, it was a good year for maize production thanks to a well-distributed rain pattern along with the agricultural year.

Commercialization	Most of the maize is sold to intermediaries, but some 100,000 small producers are organized in 20 farmer associations grouped affiliated to the Honduras Coordinating Council of Farmer Organizations of Honduras (COCOCH) and the National Confederation of Paysans (CNC). An additional 20,000 farmers are organized in the National Federation of Farmers and Ranchers of Honduras (FENAGH) and PROGRANO with a planted area of 84,600 hectares (numbers vary 5-10% more or less per year).	When the market experiences higher than normal demand, the pressure on quality goes down. There have not been many complaints about quality. In other words, the market has been more tolerable in terms of quality.
Retail	Because of this chain's vertical disintegration with informal contracts, it is not possible to define a single channel of retail. Vertical integration from production to consumer is found in the maize flour value chain led mainly by Mexican company MASECA which operates in Guatemala and Honduras.	Given the disintegrated nature of this chain (except for maize flour for tortilla), there is little information gathered in addition to the price increase to consumers. That price was estimated initially to have been between 10-15% higher compared to 2019 prices.

b. Honduras bean value chain

Chart 15 shows the percentage of imported beans (and pulses) in domestic consumption. Basically, Honduras consumption of these products depend on domestic production, but as noted later, in some cases there is a component of imports that makes that world prices also influence the market of this product.

Chart 15. Beans: Imports as % of Domestic Consumption



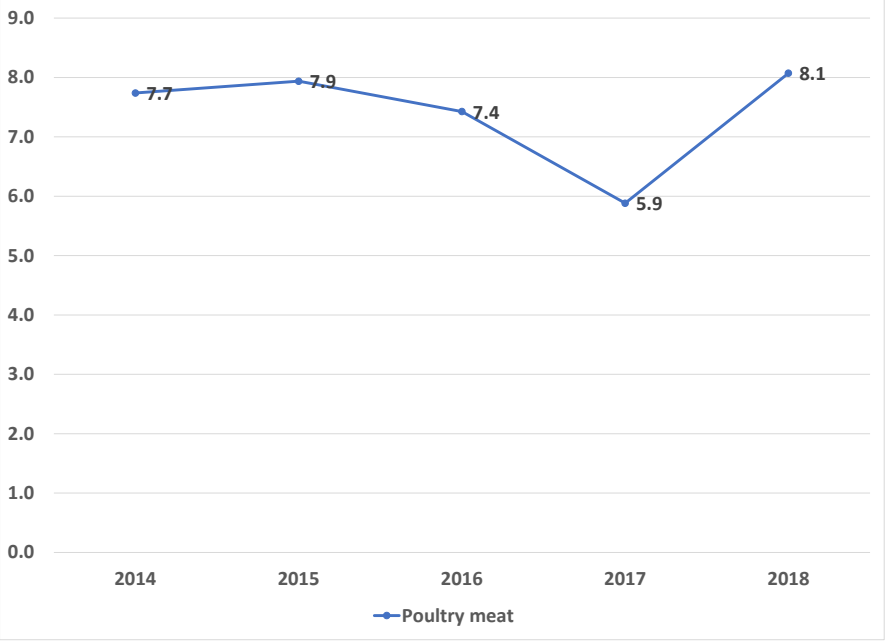
Source: authors with data from FAOSTAT

Table 5. Red dry bean value chain

Value Chain Function	Critical value chain characteristics	COVID-19 effects
Input supplies and production	It is essential in the diet of the population and is cultivated throughout the country, except in the coastal areas of the Atlantic and Pacific of the national territory. It is grown for two annual periods (first and second) and an additional period that begins in the same calendar year (sowing date between November and January, but is harvested in the following year) and that have cultivated area and differentiated productions.	Official agencies and humanitarian NGOs were initially expecting bean scarcity, along with a potential increase in demand from El Salvador. Fortunately for Honduras, the first production season was favorable thanks to an even rain pattern and higher adoption of certified seed.
	According to the National Statistics Institute (INE), estimates, approximately 143,000 hectares are planted annually under this crop, obtaining an approximate production of 2.5 million quintals based on an average yield of 17.5 quintals per hectare (INE 2020).	More area was planted in 2020 following the encouragement of the government to focus on food security.
Commercialization	Generally, bean production in the country is sufficient to meet domestic consumption. In years of considerable climatic variability, manifested in droughts or excess rainfall, a deficit in production is observed, affecting the internal supply of this grain; for the case, the foreign trade figures of the INE (INE 2020). Grupo CADELGA, an agriculture inputs distribution company, purchased more than 400 c.w.t.	The Agriculture Secretariat (SAG) announced that IHMA was going to buy the 42kg bag of dry red beans at L1250 (25% above the start-up price in May 2020 which led to more area planted). Prices were negotiated in July 2020 for the 2020-2021 agricultural year. By then, the first season has been already planted, but the most important season for beans has been the second season (to avoid heavy rain and drought).

c. Honduras poultry meat and eggs value chain

Chart 16. Poultry Imports as % of Domestic Consumption



Source: authors with data from FAOSTAT

Most of the national consumption of poultry meat and all of eggs (for the latter FAOSTAT shows zero imports) are supplied by domestic producers.

Table 6. Poultry meat and eggs value chain

Value Chain Function	Critical value chain characteristic	COVID-19 effect
Input supplies and production	There are about 100 poultry farmers in the region, of which 50 are dedicated to meat production and another 50 to egg production. In both cases, they are largely semi-technical production systems.[8] The broiler value chain is dominated on a national scale by vertically integrated companies, present in all functions of the chain. Production systems are intensive, based on a high-tech level, covering from the production of breeders and the elaboration of concentrated feed, to processing and storage. In some cases, these companies integrate horizontally through supply contracts with independent producers. These companies are Cargill Honduras, CADECA (Pollo Rey) and El Cortijo, and operate out of the Comayagua region (PYMERURAL 2014, DICTA 2020). The egg chain is fragmented, with a low level of vertical integration. However, horizontal integration is observed in the formation of a mega distributor made up of the twenty largest egg producers in the country. There are regional organizations as well as several at the national level, such as the Federation of Poultry Farmers of Honduras (FEDAVIH), the National Association of Poultry Farmers of Honduras (ANAVIH) and the Association of Poultry Producers of Honduras (PROAVIH).	The poultry meat and egg chains suffered a 40% market contraction in April and May of 2020. But there were up to 2019 levels in December. The growth forecast for 2021 has a large level of uncertainty given that the tourism and hospitality sector is still operating under COVID-19 restrictions (SAG, DICTA 2020)[9].
Commercialization	Vertically integrated companies supply chicken meat to supermarkets, restaurants and hotels visited by urban consumers in the main cities of the region. These are arrangements regulated by explicit contracts. The table egg is sold individually, in cartons of 12, 18 and 30 eggs. The mega-distributor and some independent producers supply —through agreements regulated by contracts— to supermarket chains, restaurants, and hotels. Meanwhile, the region's producers distribute it independently in the local market, mainly in municipal markets, grocery stores and delivering directly to bakeries.	As mentioned, Honduran poultry farmers reduced sales of poultry products by 40% due to coronavirus around the second quarter of 2020, but recovered in the next months (AviNews 2020)[10]

[8] http://www.agronegocioshonduras.org/wp-content/uploads/2015/06/Cadena-Avicola-Comayagua.pdf

Analysis of the operation of selected value chains under the pandemic.

To understand the conditions under which the value chains in this assessment operate, it was necessary to divide the last 12 months in three periods. From April to June 2020, reports on disruptions in production costs and supply flows were limited as many industries were still grappling with what the pandemic restrictions meant to their business.

From July to September 2020, data started emerging on the struggles faced by producers, processors, and retailers as the first assessments were written and published by the local newspapers. As for the most recent period, the last six months (last quarter of 2020 and early second quarter of 2021) continued to show stress in the tourism and hospitality industries, international travel and foodservice, but food demand in general recovered.

For the maize, beans, poultry meat and eggs value chain actors, the biggest initial impact from COVID-19 was not a shortage of inputs, but a significantly decreased demand. Organized farmers and processors have been keeping up with financing, input markets and logistics affected by the pandemic mostly on their own. The good news came at the end of the first three months of the pandemic when demand started picking up. This was certainly the case for poultry meat and eggs which, despite the loss of demand in the tourism and hospitality sectors, were showing signs of recovery. This was less the case for maize and beans which had only planted the first production cycle (Cycle Primera in agricultural year terms) keeping in mind that droughts in July and August have a history of affecting yields and overall production.

Loss of jobs in different sectors have had an impact, but food production and consumption seem to have been the least affected. Government policies that translated into programs offered a positive message for the industry (Ham 2021) (such as the ones mentioned before, including freezing payments on loans given for production and housing for three months and increases in lending).

Cash transfers to the poor were felt across the four food value chains, although the specific quantitative impact on supporting demand is difficult to estimate. Demand did grow by the end of June in 2020 leading to poultry producers (chicken and eggs) planning to get back to their original production plans developed before the pandemic.

The analysis of the most important, negative impacts on the studied value chains is summarized below. There are also some aspects that are positive in terms of demonstrating recovery and resiliency in different ways which should guide further assessment efforts.

a. Government focus on food security was favorable for all four food value chains

As discussed before, the Government of Honduras decided to strengthen food security safety nets through a variety of mechanisms. Because the COVID-19 pandemic started weeks before the planting of Cycle Primera of the agricultural year, the Ministry of Agriculture was tasked putting together an encompassing campaign to promote food production (mainly maize and beans) at the onset of the rainy season 2020.

A focus on boosting food security by planting more basic grains was the most accessible tool for the GoH to fend off potential food scarcity. The chicken meat and eggs value chains also acted closely with the Government alerting each other about the potential impact of limiting the mobilization of laborers on

the capacity to produce food. As a result, Honduras imposed social distancing restrictions, but declared all food handling personnel “essential workers” and therefore able to travel to their work locations. As a result, maize, beans as well as poultry (meat and eggs) did not stop working.

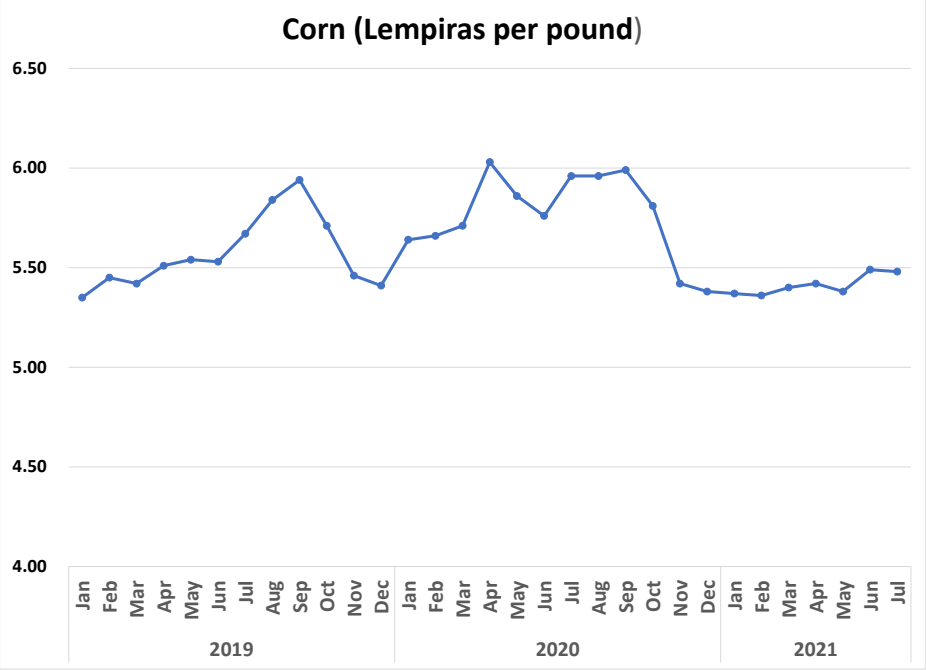
Key informants interviewed from Honduras expressed that these changes in schedules, distancing and mask-wearing practices increased food handling costs by having to purchase large tents to accommodate sorting tables. Increased costs led to some anxiety, but rising prices for basic commodities ultimately sustained production. In addition, government measures in Honduras for the purchasing price per hundred-weight sac (or 45.4kg bags) of dry beans by the National Agricultural Marketing Institute (IHMA) went from L 1000 to L 1250. Not only price was raised, but also the budget allocated to purchase bean reserves was increased. Originally, the plan was to purchase 1818MT, but was more than doubled to purchase 4535MT. This policy propelled planting in the first production cycle of 2020 from May to August and the goal was met (interview with Julio Guerrero, Red PASH, Honduras).

b. The impact on maize and bean production was not as big as expected

While some of the target value chains suffered significant adjustments on production due to expected lower demand and increased production costs, the most serious effects only lasted for a few weeks. A significant, positive factor was a benign rainy season that allowed for above-average harvests of maize and beans during the first production season from May to August. The second production season was also important, and, except for Honduras’s storm-affected areas (DALA Honduras 2021), the country was able to plant a second season.

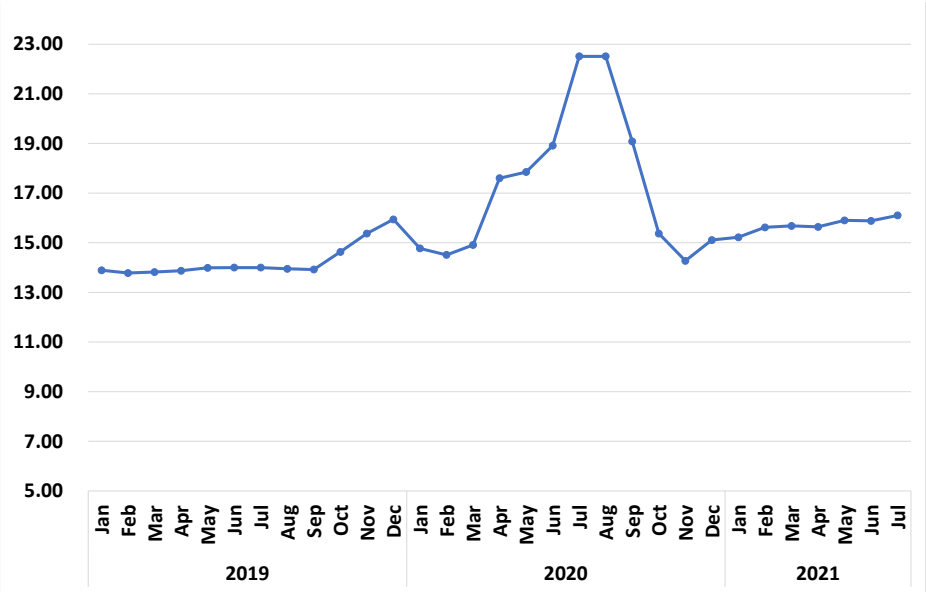
Chart 17 shows the evolution of the price of corn and chart 18 the same for red beans.

Chart 17. Evolution of corn price (2019-2021)



Source: Banco Central de Honduras

Chart 18. Evolution of red bean price (2019-2021)



Source: Banco Central de Honduras

In both cases there were jumps in prices (Lempiras per pound) in the first part of 2020, as a result of the initial disruptions, uncertainty and hoarding, but then they returned to previous levels.

c. Poultry chicken and eggs have gained market share during the pandemic

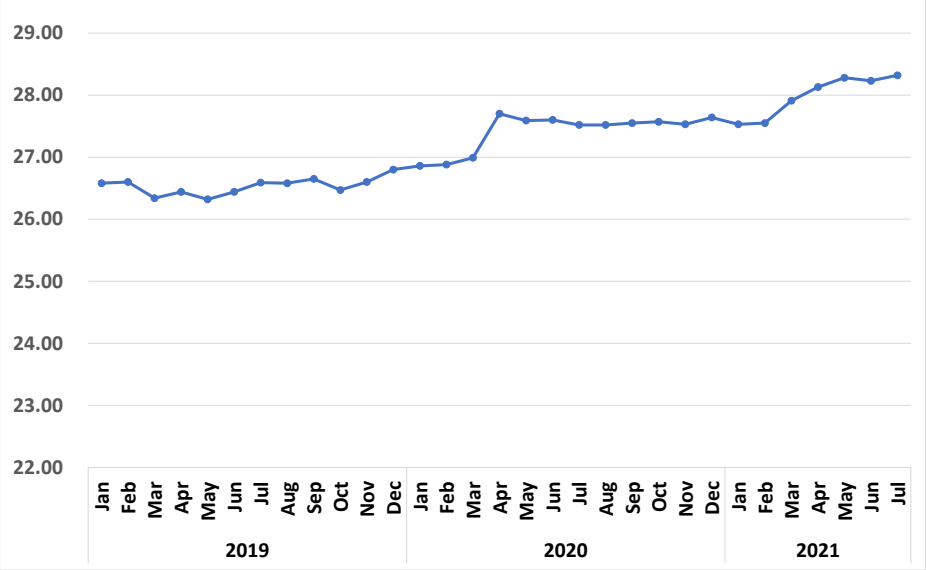
The poultry sector reacted first by cutting back production in response to a drop in consumption. At the same time, poultry operators rushed to securing several months' worth of feed supplies (soy and yellow corn) before bigger players induced a price hike with increased purchasing.

Fortunately, the reduction in production only lasted three weeks (at the end of April) because urban and rural markets were buying chicken and eggs at higher-than-expected rates. By early May, slight increases in demand compared to 2019 were registered explained by consumer preference for lower-cost chicken and eggs as opposed to beef and pork. Orders to halt the purchase of fertile eggs were reversed and feed and other supply purchases were placed more aggressively to prepare for the upcoming months. By then, China and the big poultry players of the world were buying soy, micronutrients, yellow maize, vaccines and other inputs leading to rising input prices. In late January 2021, almost a year under the pandemic in Honduras, consumer prices are on average 18% higher than 12 months ago while input prices are about 18-20% higher.

In January 2021 another development was that IDB Invest, a member of the IDB Group, approved a loan for US$75 million to the Corporación Multi Inversiones (CMI Alimentos) (a Central American family corporation with more than 40,000 employees operating mainly with food production and restaurants with brands such as Pollo Campero and Pollo Granjero). The financing supports fixed investment maintenance plans, and the strengthening of the operations of the value chain, both regarding the more than 8,000 suppliers and in relation to the small firms that are the direct sales channel in Guatemala, Honduras, and El Salvador. It is still too early to determine the impact of this project.

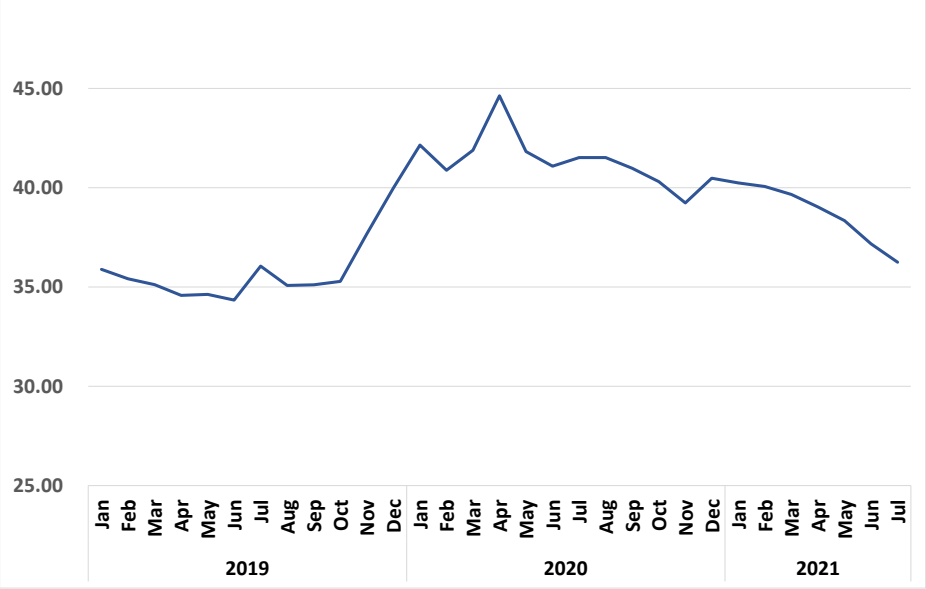
Consumer prices for poultry meat and eggs reported by the Banco Central de Honduras are shown in charts 19 and 20.

Chart 19. Evolution of poultry meat price (2019-2021)



Source: Banco Central de Honduras

Chart 20. Evolution eggs price (2019-2021)



Source: Banco Central de Honduras

The price of eggs started to increase at the end of 2019, before the pandemic, and then had another increase in the first quarter of 2020 (overall prices were about 20% the levels of the first half of 2019), but then declined and in 2021 are in nominal values comparable to those of 2019. In the case of poultry meat, the increase of prices was smaller than for eggs (in June 2020 they were only about 3% above the values of December 2019), but have remained there during 2020 and increased somewhat more in

2021: still by June this year they were about 5.6% above the levels of December 2019, which is not very different than the average inflation trend.

d. Small, medium and large poultry growers face similar situations

Contacted key informants in medium or large companies talk about percentage increases in costs, market shifts, the cost of inputs, etc., but small players in rural areas have not felt the effects on COVID-19 at the same rate. In rural areas, markets have been buying more and at higher prices while municipalities have risen as new players on the purchasing side. The balance so far points out the resilience of food value chains showing signs of slow, but steady recovery. Government programs were announced at the start of the pandemic, but small players interviewed are unaware of what happened to those programs in the poultry business (from interviews with two small poultry producers).

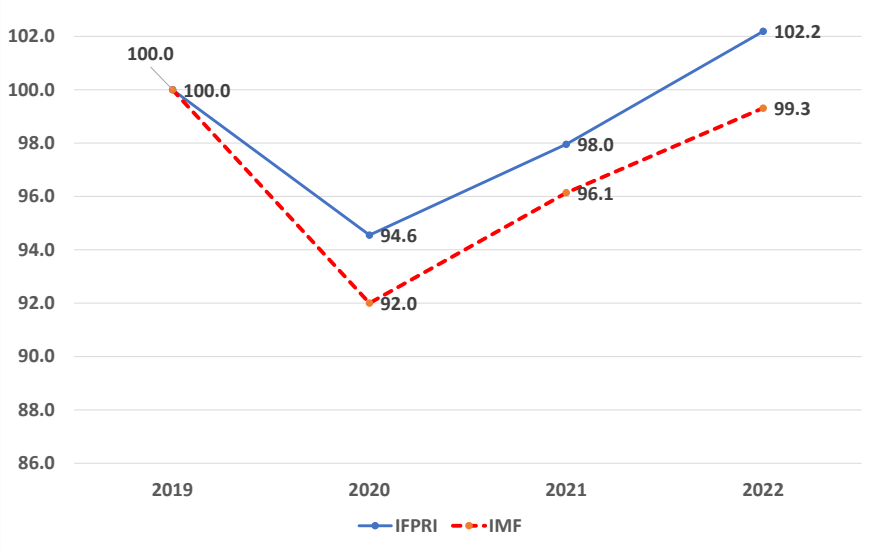
Despite some positive news, the compounded effect of the pandemic on health, jobs, demand and the functionality of input and credit markets is still undetermined. Continued policy work and governmental support to the economy will be necessary for the next few months until the economy returns to the expected levels of normalcy.

RESULTS FROM THE PREVIOUS SIMULATIONS AND SOME UPDATES

In the previous report (Díaz-Bonilla, Laborde, and Piñeiro, 2021) we presented simulations for 2020 to 2023 using the MIRAGRODEP model with epidemiological adjustments (see Annex 2 for more details). The simulations included three scenarios: optimistic, intermediate, and pessimistic. They were performed around October 2020, with the information available at that time, and without including governments' policy responses.

Chart 21 shows IFPRI simulations (averaging the results for the 3 scenarios) with the current projections by the IMF, which include the existing information until April 2021. The comparison is for total GDP, and it is done rebasing 2019 to 100.

Chart 21. Total GDP (index 2019=100)



Source: authors from IFPRI simulations and IMF/WEO database.

The average of IFPRI projections have been more optimistic because they were done before hurricanes Eta and Iota hit Honduras almost back-to-back in early and mid-November 2020, while the IMF projections incorporate those impacts. With the new estimates, total GDP will not recover even by 2022.

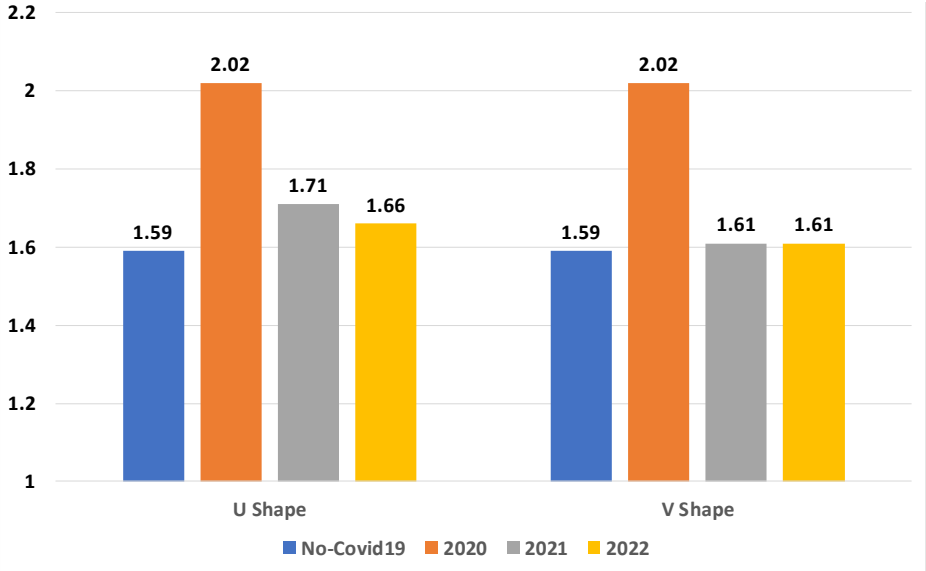
From the sectoral point of view, the previous IFPRI simulations showed that the agricultural sector would have been less affected than industry and services, which is what eventually happened. However, the hurricanes mentioned before, hit Honduras by the end of the year, causing agriculture to close in worse shape than projected initially (although by February 2021, the Index of Economic Activity was already above the average for 2019). Also, the simulations suggested that the agricultural sector may be affected negatively by the delayed impact of the pandemic in 2021, while the other sectors would have rebounded. As noted, this year is still in evolution, and there are uncertainties linked to a further wave of contagions. Prices of agricultural commodities—which have rebounded in world markets for reasons not necessarily related to the impacts of the pandemic—may offer some incentives to producers while affecting consumers. The simulations for the current year and the next one will be revisited in the next report.

The simulations also compared changes in consumption, measured against a baseline without COVID-19. Food consumption in 2020 was estimated to decline compared to the baseline without the pandemic, but the drops will be larger in products such as dairy, meat, fruits, vegetables and pulses, compared to grains and sugar. This suggested a reallocation of consumption towards less healthy diets. The simulation for 2021 consumption of most products still showed declines compared to the baseline.

In summary, it was noted then that the simulations suggested both a decline in food consumption and a shift in composition towards less adequate diets continuing in 2021. However, an important aspect to be noticed is that the simulations (as was explained in the previous report) were done without considering the policy responses. It was shown before that the government of Honduras expanded social protection and other related programs by about 2.3% of the GDP, which should have certainly cushioned the economic shock of the pandemic on employment and incomes.

Chart 22 shows the estimated evolution of extreme poverty (at 1.9 PPP dollars/capita/day) in the previous report.

Chart 22. Honduras, Extreme Poverty (millions of people)



Source: authors based on MIRAGRODEP.

Extreme poverty was estimated to increase to more than 2 million people in 2020 or somewhat more than 400,000 persons above the about 1.59 million that were calculated to be in that category in 2019. Then with the recovery, it was considered that the number of extreme poor would drop to between 1.71 and 1.61 million people (optimistic and pessimistic scenarios respectively) in 2021 and to between 1.66 and 1.61 million people (optimistic and pessimistic scenarios, respectively) in 2022. Therefore, the prevalence of extreme poverty was estimated to remain even in 2022 above the 2019 levels.

A recent report of the World Bank (2021) estimates the difference in what would have been the poverty levels at 5.5 PPP dollars/capita/day (a higher poverty line) during 2020, considering the situation without and with policy responses.

Table 7 shows the percentage of the poor population at that poverty line in 2019, and the range of estimates in the cases of no policy response, and with such responses for 2020. There are no projections for 2021 or 2022.

Table 7. Honduras: Population below poverty of line of 5.5 PPP dollars/capita/day

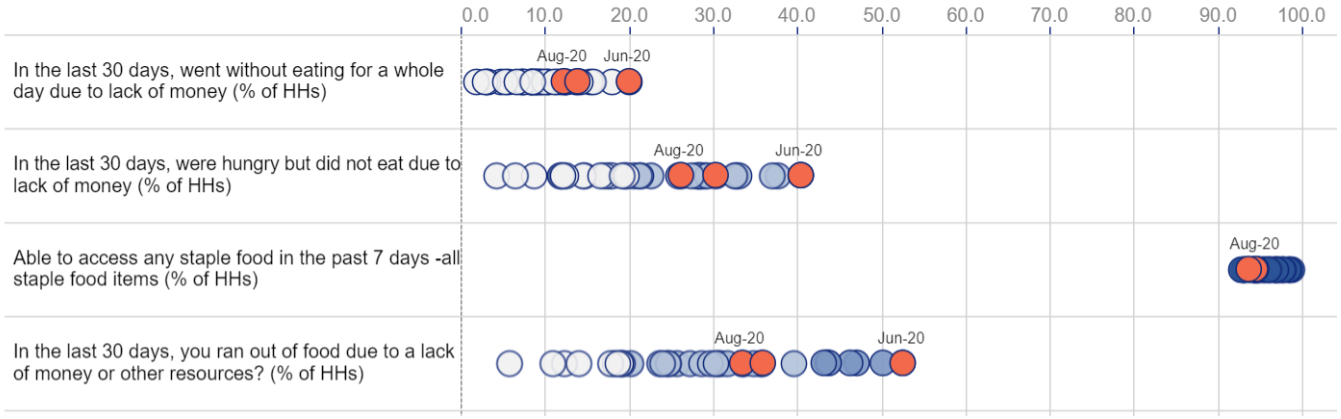
	2019	2020. No policy response	2020. With policy response
Percentage	49.0	55.9	55.5
Number (millions)	4.78	5.54	5.50
Change in numbers (millions)		0.76	0.72

Source: authors with data from Annex 8 WB 2021 from calculations in Diaz-Bonilla, Carolina, Laura Moreno Herrera, and Diana Sanchez Castro, forthcoming.

The policy response is estimated to have marginally reduced the number of additional poor generated by the pandemic (40,000 less persons).

Additional information for some variables during 2020 has been collected by the high frequency telephone surveys implemented by the World Bank in many countries in the world, including Honduras (https://www.worldbank.org/en/programs/lsms/brief/lsms-launches-high-frequency-phone-surveys-on-covid-19). Among the information collected are the questions on food security reported in Chart 23. It shows the results for Honduras (orange dot), compared to the answers for other LAC countries with data. The dots also indicate the time of the survey, which allows a tracking by time of the impact of the pandemic.

Chart 23. Food Security Indicators



Source: from LSMS-Supported High-Frequency Phone Surveys on COVID-19

The surveys indicate that by June 2020, about 20% of the respondents have gone at least one day without food due to lack of money, about double (40%) were hungry but did not eat because of lack of money, and about 55% ran out of food due to lack of money (the questions are in inverse relation to the degree of hardship with not eating for a whole day the worse condition). The other question about being able to access staple foods (which more than 90% of the respondents said they were able to do that) indicate that the problems were not related to supply issues but rather demand problems for lack of money. In any case, the percentages of households with food problems dropped in the next survey of August 2020 but still some 12-15% went without eating for a whole day. There are not additional surveys for Honduras after August 2020.

Even with the improvements, if those numbers are extrapolated to the total population, the percentage in August of people not eating for a whole day would represent about 1.2-1.5 million people, and the number of people that were hungry would have been about 2.5 million, bracketing the numbers simulated for extreme poverty projected in the previous report and shown in Chart 22 (it should be noted that the poverty line is the one that allows food consumption for the minimally accepted levels of energy).

SOME PRELIMINARY POLICY CONSIDERATIONS

Health issues

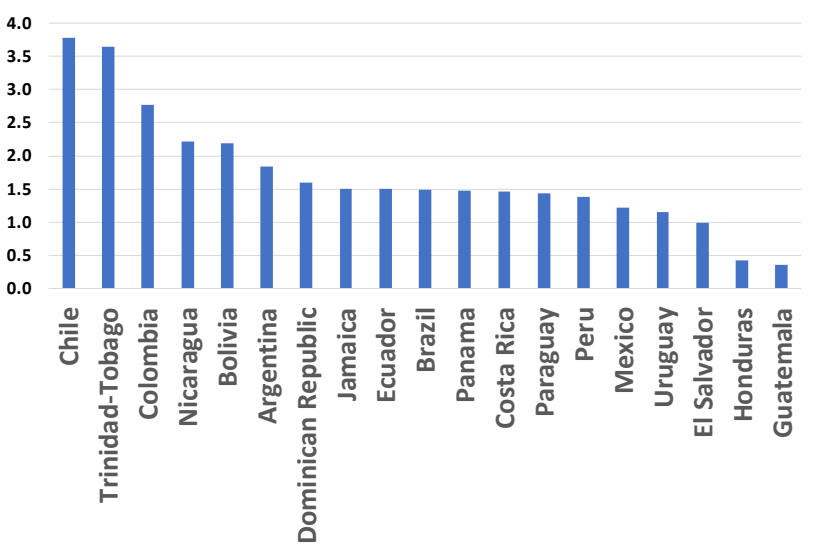
As noted in the previous report, the simulations by LSHTM (see Annex 2 for the references) estimated a larger number of deaths absent health mitigation measures than what seems to have occurred in Honduras with the mitigation measures applied. Therefore, a preliminary conclusion in the previous report was that the health measures implemented would have had the beneficial result of reducing the death toll (from some estimated 22,000 deaths without mitigation measures, to about 2500 recorded deaths). Notwithstanding, it was also noted that the difference could have been not because of the mitigation measures applied but due to a) the original model overestimated the number of deaths in the unmitigated case; or b) the number of true deaths has been higher than officially recorded.

Recently, the reopening of the economy, which was needed to help recover incomes and employment, has led to the larger levels of mobility documented before, potentially leading to an increase in contagions and deaths. Therefore, as in many countries, the only way out of the dilemma economy versus health is to step up the work on vaccinations. However, as noted before, Honduras is behind in the vaccination campaign. As an additional component it seems necessary to strengthen testing and contact tracing, and isolation of identified cases, to slow the evolutions of the pandemic while updating the treatment protocols.

Social protection

Social safety nets will have to be maintained and expanded, because the impact of the pandemic will continue in 2021 and beyond. Before the pandemic, Honduras had the second to lowest levels of expenditures on social assistance programs in Latin America and the Caribbean (less than 0.5% of GDP in the last data available in 2018) (see Chart 24).

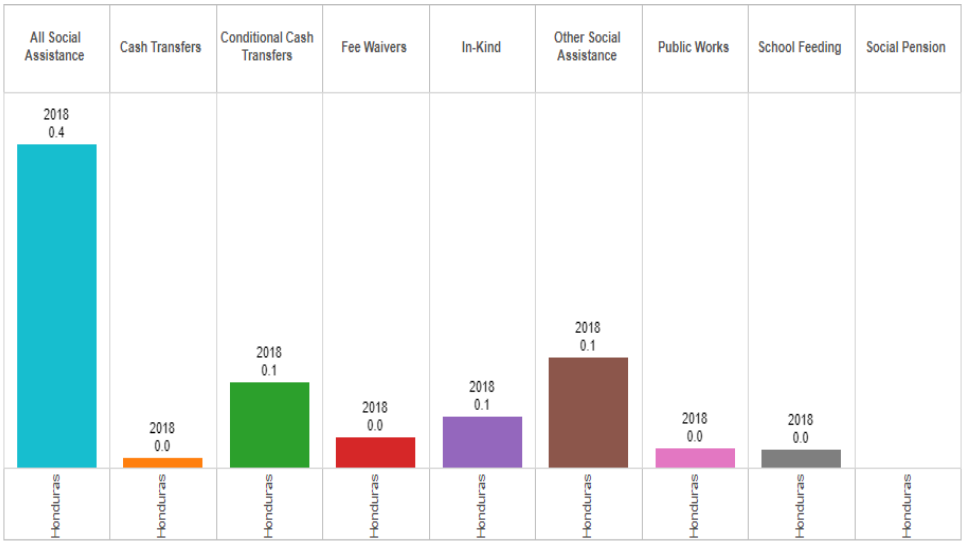
Chart 24. Social protection as percentage of GDP



Source: ASPIRE database, World Bank.

Chart 25 shows the division of social assistance across different programs.

Chart 25. Public spending on social assistance programs



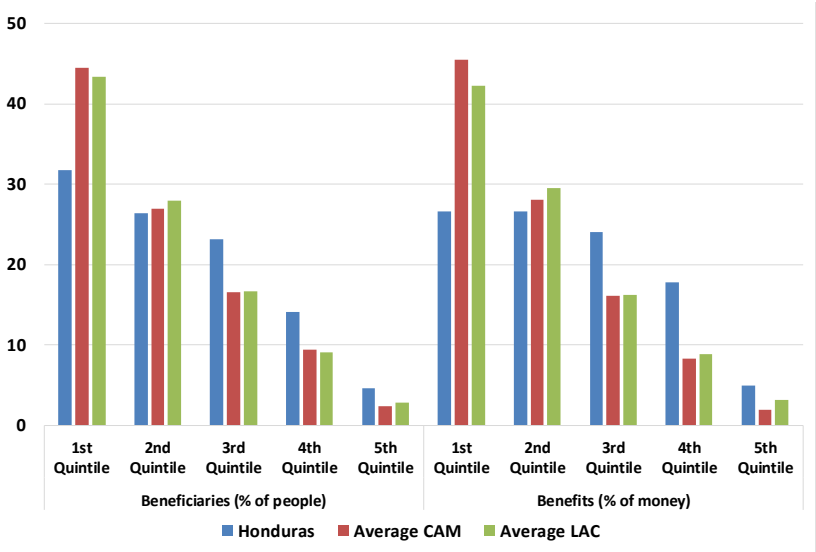
Source: ASPIRE Database, World Bank.

The main programs are conditional cash transfers, a broad category of “other social assistance” and food in-kind.

Chart 26 shows the distribution of the CCT program across quintiles of income (with the first quintile being the poorest one).

The first indicator is the incidence of beneficiaries and refers to how the total transfers are distributed in persons per quintile. That is, of all those who receive conditional transfers, how many people are in each quintile (they have to add 100% for all quintiles). The benefit incidence refers to how the value of the total transfers is distributed by quintile. That is, of all the amount of money that was distributed in subsidies, what value was received by each quintile (which also have to add 100% for all quintiles). Data for Honduras is compared to the average for Central America and Mexico (CAM) and for Latin America and the Caribbean. The data correspond to the last years in the database (usually 2015-2016, but for Honduras it is 2014).

Chart 26. Incidence in beneficiaries and benefits



Source: Authors with data from ASPIRE.

Compared to CAM and LAC, Honduras has fewer beneficiaries in, and a lower value of benefits for, the two poorest quintiles (and especially the poorest), while there are a higher percentage of beneficiaries in rich quintiles, and therefore these groups receive more benefits than the average for the region and the subregion.

Therefore, the information shown in charts 26 to 27 indicates that Honduras does not spend a high percentage of GDP compared to other countries in the region, and secondly, that the distribution of benefits among the different income quintiles indicates that the poorest groups receive relatively fewer resources than in other comparable countries (and, on the other hand, higher-income sectors receive comparatively more funds in Honduras).

This suggests two types of adjustments: a) better targeting with the same levels of spending; and b) an increase in the level of spending.

The first is obvious if the objective is to help the poor, when now part of the money is leaking to higher income groups.

Regarding the second aspect, the additional expenditure on social protection was estimated in 0.2% of the GDP (food aid to poor families) and 0.4% (cash transfers to informal workers). If maintained, that value would still place Honduras among the LAC countries with lower levels of expenditures (see Chart 24).

A third aspect to consider is the reconceptualization of the operation of CCTs to adapt them to rural conditions. It has been argued that in many of the countries, social assistance programs in rural areas have simply been a mechanical extension of the urban social protection system, in which those in formal employment receive benefits within contributory systems and the poor and those with informal jobs are served with non-contributory schemes, to try to remedy ex-post labor problems and income distribution (see for example, FAO, 2016).

This discussion is leading to consider the development of specific models of social protection that consider the specific characteristics of the peasantry, small producers, and informal workers in rural areas

(see, for example, Natalia Winder 2018; Ana Paula de la O Campos et al., 2018; FAO, 2016, 2017 and 2018).

Honduras could analyze the adequacy of conditional cash transfer programs in rural areas, expanding the focus to productive and technological support that can contribute to improving the economic and environmental sustainability of the families involved. It seems relevant the analysis and creation of an instrument for the rural area that can combine the social, productive, and environmental dimensions, with a percentage of cash transfers related to poverty levels; another to cover the additional cost of implementing sustainable adaptation and mitigation technologies; and another for environmental, forest, biodiversity, and ecosystem protection/restoration services. This instrument could include other forms of productive, organizational, and commercial support for poor producers.

Recent work by the World Bank has expanded the framework for social inclusion, both in rural and urban settings, by defining multidimensional programs with social safety nets, livelihoods and jobs, and financial inclusion (see Andrews et al. 2021). Special emphasis will be placed on the support to women and youth.

These instruments may be particularly important to reduce migration. According to the Migration Policy Institute, using data from the 2017 US Census, there were somewhat more than 3.5 million migrants from Central American countries, of which close to 700,000 were from Honduras.

Additionally, the emergence of the “new poor” from the current pandemic should also lead to expansion and reconfiguration to the urban programs.

Nutrition problems

Lower incomes or no incomes (and perhaps some increases in prices in the domestic prices of some foods due to supply disruptions) are in general leading to declines in food purchases in general and to some shifting of purchases towards cheaper and less nutritive products (buying more calorie-intensive and starchier products and less of those rich in proteins, vitamins, and minerals) (Headey and Ruel, 2020). These problems are also highlighted in the simulations presented here. Diets need to be monitored at a more granular level and evaluate their long-term effects on human health.

The combination of lower quality and quantity of diet, along with limitations in nutritional and health services, problems with water and sanitation, and population density in low-income urban areas, would weaken individual immune systems increasing the vulnerability and chances of dangerous contagion among the poor and vulnerable (Headey and Ruel, 2020).

In the next report, there will be simulations about the affordability of diets.

Food value chains

This report has taken a more detailed view of four main products in Honduras: maize, beans, poultry meat and eggs during the COVID-19 pandemic from April 2020 through the early second quarter of 2021. In general, productive actors in the four value chains have shown that they can adapt to difficult conditions and maintain production. The programs implemented by the government, including the declaration of essential workers in food production, have helped to maintain the supply side, after some disruptions in the first half of 2020.

During these major challenges, the maize, beans and poultry meat and eggs have done well and are in fact in an advantaged position when it comes to production and market performance. Their status as some of the most basic food staples every Honduran family must have on their plates has been enhanced during the pandemic (AVINEWS 20202, ANAVI 2021). The problems they face related to COVID-19 did not start with the pandemic but were exacerbated by it.

Some of them appear to have been more on the demand side, due to employment problems, although government programs helped as well. Still, the recent report by the World Bank (2021b)) estimated that the mitigation measures in Honduras only covered about 30% of the population, with the value of the transfers representing about 8% of the income pre-Covid19. This puts Honduras the fifth to last in terms of population coverage and also lower than the LAC average for transfers as a percentage of pre-pandemic income (17.6% for all 16 countries with data, and 14.5% if Brazil is excluded[11]).

But the productive sector also suffers from long standing problems on the supply side. A traditional one relates to access to credit programs. Interviewees complained that loan programs do not get down to the neediest. They also argued that new credit programs for agriculture do not address the underlying challenges and they should be more creative to reach more producers with financing.

Inequality among men and women, land conflicts, different market failures and low literacy levels are indeed disadvantages widely documented in Honduras, but these are generalized in the resource-poor, spatially distributed, small-holder maize and bean growers (CESPAD 2020). Maize and bean seed and input distributors expressed that, from the five programs launched to deal with the pandemic, the GoH could do more in facilitating credit. The “bono productivo” provides seed and fertilizers since 2006 (DICTA interview 2020), but there are more needs than that in terms of access to technology and market organization.

Chicken meat and egg producers—even if at a small scale—are in a different category as they show, in general, more assets to use as collateral, are more connected to markets and can afford more technology and paid technical assistance through veterinary doctors and input suppliers.

If the experience of the pandemic could leave a positive legacy in the agriculture sector in Honduras, it would be a more aggressive look at agricultural credit for production in the hands of SMEs. Agriculture credit will be affected by transaction costs in rural populations, production, and market price risks, shifting levels of demand, etc., but food markets will continue to exist. The missing link is a more adequate and effective policy to introduce insurance policies as adequate instruments to deal with risk.

Producers and processors would like to see more of that with a serious long-term evaluation program that can produce the best model for Honduras. That goal is necessary during this pandemic and for any future challenges and disruptions that may arrive.

More generally, it would be useful to consider more broadly the four sources of finance that can support the agri-food sector: international development funds (multilateral and bilateral); public sector budgets; banking systems and capital markets (Díaz-Bonilla, Swinnen, and Vos, 2021). Bilateral and multilateral funds, as well as public sector budgets in many countries are constrained, but they can be used more strategically to mobilize the resources of the other two sources, to support small farmers and scale-up productivity-enhancing technologies, which also help with climate adaptation and mitigation, improving

[11] This country implemented a very generous program of mitigation measures, that covered 53% of the population with transfers that represented 64% of the pre-Covid19 income.

resilience. In the case of Honduras, there is a large fragmentation of public programs and lack of coordination among them.

Also, it could be explored the possibility of engaging global private investors in projects that, in addition to some levels of returns considered adequate, also include environmental and social objectives (Díaz-Bonilla, 2021). One of the problems, however, is the lack of projects and investable opportunities organized for small farmers and structured in ways that can attract financial resources (Sadler et al. 2016). Structuring these opportunities is a complex task, involving small and family farms with very site-specific constraints; operating in local communities that have a variety of social and productive profiles; involving, in the case of water projects, complex issues of water rights and environmental sustainability; and need other services and infrastructure support to produce and market the incremental production, among other challenges. Furthermore, involving private investors and the banking system would necessitate structuring the investment opportunities (as projects but possible as another type of investable assets too) as to make them attractive at reasonable rates of return and risk profiles. All that work would require a cadre of specialists with the specific task of developing the needed pipeline of specific projects and investable opportunities, working with small farmers and their associations and the public and private organizations related to the sector, and linking the work to a solid base of science and technology (Díaz-Bonilla et al, 2018).

Honduras also needs to invest more in R&D in agriculture: the country is the third to last country in LAC with just 0.17% of the agricultural GDP (average for LAC 0.71%) and the seventh to last with 13.2 full time employed researchers by 100,000 farmers (average for LAC 71.3 FTE/100,000 farmers). The additional investment is necessary not only to improve productivity and to adapt and mitigate climate change, but also, as the pandemic has dramatically demonstrated, to make food value chains resilient to health shocks.

Finally, contrary to Guatemala, Honduras has benefitted grain producers through government strategic purchases at fixed and attractive prices (see additional price data from Oseguera 2021). Those purchases are voluminous in nature and pay better per unit than intermediaries. Those programs could be enhanced to include more purchases of dry products such as maize, beans and rice, but also other non-perishable products (processed fruits and vegetables) that benefit a broad range of value chain actors. The strategic purchases will not lose their ability to keep prices under some horizon, but also would give IHMA a stronger role to play incentivizing national production and as a broker of basic food items being purchased by municipalities, NGOs and the private sector. This could be considered a necessary complement to enhanced agricultural credit programs since a common problem at the end of the production cycle is accessing attractive and better organized markets.

Macroeconomic policies for the pandemic

Public debt, which was below 43% of the GDP in 2019, is estimated to increase to about 51% by 2023 (IMF, 2020), indicating that Honduras has some fiscal space if there is the political decision to address the social problems that pre-existed the pandemic and have been greatly exacerbated by it. Fiscal, monetary, and exchange rate policies will have to be managed in a consistent manner to ensure a sustainable macroeconomic path going forward (Díaz-Bonilla, 2020).

In particular, the scheme of “zero hunger bonds” could be utilized as explained in Díaz-Bonilla 2021.[12] In a separate document, this possibility will be discussed in greater detail, particularly in the context of both the program for the Central American triangle and the Summit of the Americas.

[12] The specific design will have to be discussed with potential private and institutional investors, but some features to consider were discussed in Díaz-Bonilla, 2021: the “zero hunger bond” can be a console or perpetual bond; issued in dollars; paying an adjustable rate with a cap (say 5%); and callable, with call protection (for example, until 2050). It is suggested that 2% of the new allocation of SDRs of 650 billion dollars (13 billion dollars) can be assigned to a fund, which could be set up within the IMF, to guarantee the interest rate payments of zero hunger bonds issued by countries with programs to end hunger and recover from the pandemic.

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ANNEX 1. VALUE CHAIN OPERATORS

Value chain operators for maize, beans and poultry meat and eggs are listed below for different value chain functions and support services. These functions and services were well characterized in 2014 in "Value Chain Governance" study done on the maize and beans value chains in Central America by García-Jiménez and Gandlgruber (2014) for the Latin-American and Caribbean Economic Commission (CEPAL). More recent assessments have not been found.

While sections of this report have been shared with key informants, the list of contacts is not exhaustive but focuses on the main links of every chain for further information. In the case of some institutional contacts, no specific person was identified, but information on press releases and COVID-19-specific strategies was obtained.

a. Honduras white maize and beans

Table 8. Input suppliers

Value Chain Link	Leading Actors	Contact Information
Input suppliers (seed, fertilizers and other agrochemicals)	Ciencia y Tecnología Agropecuaria (DICTA)	**Ricardo Salgado** Director Agriculture Technology Transfer Program. Email: ricardoradillo@yahoo.com Phone # : +504 9990 0712
	Escuela Agrícola Panamericana-Zamorano	**Ing. Jaime Roberto Nolasco Martínez. M.A.E.** Instructor Planta de Semillas Departamento Agroindustria Alimentaria Apartado Postal 93. PBX: (504) 2287-2000 Ext. 2219 (504) 2287-2219 Email: jnolasco@zamorano.edu
	CADELGA	**Jennifer Rivera** San Pedro Sula 21104, Honduras Phone: +504 2552-2220 jrivera@cadelga.hn
	DISAGRO	**Manuel Rodríguez, Distributor** +504 9935 6610 CA 5, Peña Blanca 21101, Honduras
	AGROVAL Agrochemicals supplier in San Pedro Sula, Honduras	**Mauricio Fonseca Gaitán** (504) 9790-7182 maurifonsi@yahoo.com

Commercialization	Red de Productores y Acopiadores de Semilla de Honduras (RED-PASH)	**Santiago Pineda** RED PASH 9850-93-48
	Instituto Hondureño de Mercadeo Agrícola	**Mario Gomez**, Gerente General del IHMA. gerenciageneral@ihma.gob.hn. (504)31710438.

Table 9: Honduras poultry meat and eggs

Value Chain Link	Leading Actors	Contact Information
Broiler producers	PRONORSA/CARGILL	ALTIA Business Park Torre 3, Piso 6 San Pedro Sula, Honduras Tel: (504) 2518-2200
	Pollos El Cortijo Fertilized eggs, improved genetics	**Jasio Zapata** Gerente General Colonia Rio Grande Parque Empresa-rial Perisur. Condominio #11 Phone # (504) 226-3080/2226-3081
	Ciencia y Tecnología Agrope-cuaria (DICTA)	**Ricardo Salgado** Director Agriculture Technology Trans-fer Program. Email: ricardoradillo@yahoo.com Phone # (504) 9990 0712
	FEDAVIH	**Marco Antonio Baquedano** Director FEDAVIH
Chicken producers	Asociación Nacional de Avicultores de Honduras-ANAVIH	**Ing. Luis Valle Coello** President San Pedro Sula Barrio Suyapa, 14 y 15 avenida, 4 calle S.O Casa 106 Teléfono: 2550-2443 / 2550-2339
	Asociación Productores Avíco-las de Honduras, San Pedro Sula PROAVIH	**Graciela Ayala Merino,** President San Pedro Sula, Honduras Phone # (504) 2557-4636/4669 Fax: (504) 2557-4761 Email: proavih@sulanet.net

ANNEX 2. SIMULATION MODEL

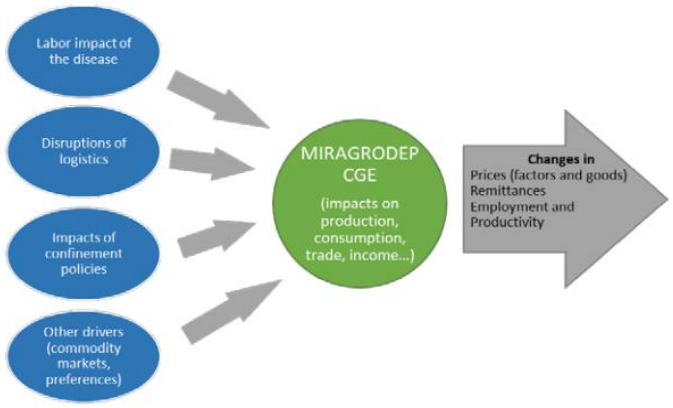
The simulations start with year 2020 and extend to 2021 and 2022. There are three global reference scenarios and they are compared to the counterfactual of no Covid-19. Those three potential scenarios are related to the speed of recovery represented by different shapes of the upturn. A first scenario is **V-shaped.** It assumes quick control of the outbreak, financial stimulus for investors, central bank support and continued demand from national, regional and international markets. The second global scenario is **U-shaped.** It includes financial stimulus and central bank support, but the control of the outbreak is slower and/or the recovery of demand from national, regional and international markets is also sluggish. The third global scenario is **W-shaped,** with a slow recovery of demand that stays below pre-outbreak levels, followed by countries prioritizing national/regional markets over international markets, which would force a change in investment strategies and reallocation of capital across countries/regions. This scenario could also happen with a second outbreak of the virus.

The implications of the economic slowdown for poverty and food insecurity depend on the assumptions made about the duration of the pandemic and the transmission mechanisms.

The analysis was done focusing on a COVID-19 scenario for 2020 and under a range of assumptions of short-term impacts of the pandemic for the next two years. The factors underlying the socio-economic effects of COVID-19, such as health impacts, and the mitigation strategies the countries impose, including social distancing measures, restrictions on labor mobility and on international transport, define the design of the scenarios. Then using IFPRI's MIRAGRODEP model, this paper analyzes the impact of the pandemic on economic growth, incomes, employment, consumption, prices, trade, and poverty.

The direction of causality in the model is shown in Chart 28.

Chart 27. Modeling Framework



Source: Laborde, Martin, and Vos, 2020.

The methodology builds on David Laborde, Will Martin, and Rob Vos (2020) but differs in the epidemiological assumptions, which are based on the scenarios run by the London School of Hygiene and Tropical Medicine (LSHTM) (Pearson, Van Zandvoort, Jarvis, Davies, Thompson, Checchi, Jit, and Eggo. 2020).

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