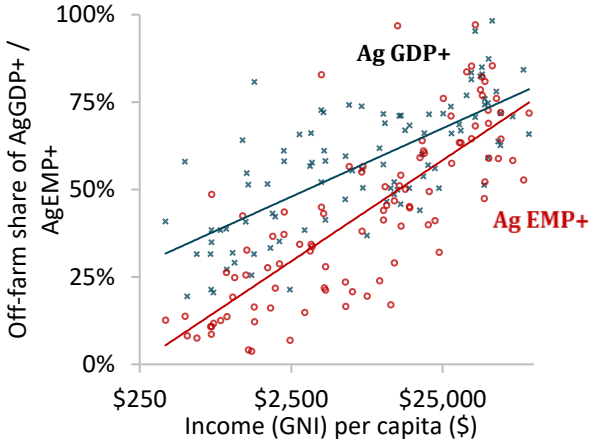
Measuring Changes in Guatemala's Agri-Food System

Transformation of the agri-food system (AFS) is a leading pathway to achieve the USG Global Food Security Strategy Objective 1 of "Inclusive agriculture-led growth". The AFS encompasses the primary agricultural sector, as well as all upstream and downstream agriculture-related activities. An expansion of the AFS's off-farm components is central to the process of agricultural transformation and is strongly associated with economic development. The *Percent change in value-added in the agri-food system (AgGDP+)* and *Employment in the agri-food system (AgEMP+)* indicators are useful to track this process.

Off-Farm Components of the AFS Become More Important as Countries Develop



Actual Results for 2017-2020 and Projections to 2022 Using Historical Trends

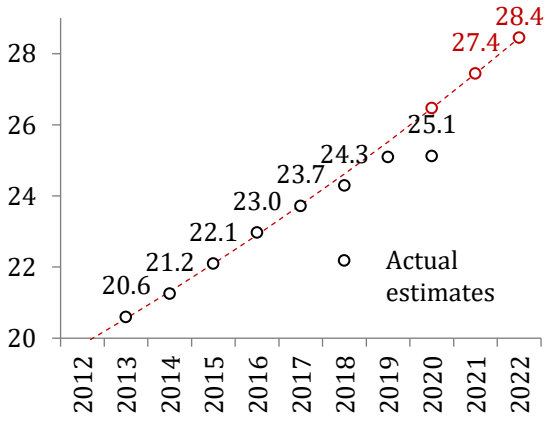
Indicators (* FTF indicator)	Units	Actual estimates				Projected estimates	
		2017	2018	2019	2020	2021	2022
Total GDP	$ bil.	**67.0**	**69.1**	**71.6**	**70.5**	**76.5**	**79.1**
Agriculture	$ bil.	7.0	7.1	7.3	7.3	7.7	7.9
Agri-food (AgGDP+)	$ bil.	23.7	24.3	25.1	25.1	27.4	28.4
* Change from 2017	%	-	2.4	5.8	5.9	15.7	19.9
Total employment	**Mil.**	**6.5**	**6.7**	**6.9**	**6.5**	**7.5**	**7.7**
Agriculture	Mil.	2.1	2.2	2.2	2.0	2.3	2.4
* Agri-food (AgEMP+)	Mil.	3.5	3.6	3.6	3.5	4.0	4.2

Summary

- In 2020, the AFS generated 35.6% of total GDP in Guatemala and 53.2% of total employment, while agriculture alone represented 10.3% and 30.8%, respectively.
- AgGDP+ grew at 0.1% and and AgEMP+ fell by 3.6% between 2019 and 2020, reaching $25.1 billion and 3.5 million workers in 2020.
- If 2013-2020 trends continued, AgGDP+ and AgEMP+ would have reached $28.4 billion and 4.2 million workers by 2022.

Note: GDP is measured in constant 2017 US$

Projecting AgGDP+ in Guatemala ($ bil.)



Guatemala's Agri-Food System in 2020

This section provides data on the structure of Guatemala's economy as a whole and of its agri-food system in 2020. Table 1 shows the breakdown of national GDP, employment, and trade. Table 2 reports AgGDP+ and AgEMP+ estimates broken down by the components of the AFS. Table 3 disaggregates the latest AgGDP+ estimate across major products or value chains.

Table 1 shows agriculture is an important part of Guatemala's economy – it generated 10% of national GDP and 31% of total employment in 2020. Crops dominate the agricultural sector, while livestock is also an important source of GDP and employment. Part of agriculture's output is supplied to the manufacturing sector for processing. Total manufacturing generated 15% of GDP and 12.4% of employment. Guatemala depends on agricultural and agro-processing exports (agro-processing is aggregated into manufacturing exports in Table 1). Most foreign earnings are used to pay for imported manufactured goods, such as machinery, vehicles, and chemical products. More than three-fifths of national GDP is generated from services with trade & transport the largest service subsector.

Table 1. Structure of Guatemala's Economy in 2020

Economic sector	Share of total (%)			
	GDP	Employ-ment	Exports	Imports
Total	**100**	**100**	**100**	**100**
Agriculture	**10.3**	**30.8**	**25.8**	**4.7**
Crops	6.2	25.0	25.4	4.3
Livestock	2.7	3.3	0.1	0.3
Forestry	1.2	2.3	0.2	0.0
Fishing	0.2	0.3	0.1	0.0
Industry	**23.2**	**20.2**	**54.1**	**87.6**
Mining	0.4	0.1	0.9	0.9
Manufacturing	15.0	12.4	52.2	86.2
Electricity & water	2.4	0.5	0.9	0.4
Construction	5.3	7.1	0.1	0.1
Services	**66.5**	**49.0**	**20.0**	**7.7**
Trade & transport	23.6	21.8	2.6	0.6
Hotels & food services	2.7	4.8	0.0	0.0
Finance & business services	19.5	4.8	11.5	4.0
Government, health & education	12.0	8.6	0.5	0.1
Other services	8.7	8.9	5.4	3.0

Source: IFPRI estimates using supply-use tables, national accounts, and ILO employment data.
Note: GDP is gross domestic product measured in constant 2017 US$.

The importance of agriculture for the economy extends well beyond the sector itself, with many industrial and service sectors forming parts of the AFS. Table 2 reports estimates of AgGDP+ and AgEMP+ by component of the AFS. Agriculture generated $7.3 billion in GDP and employed 2 million workers in 2020. Agro-processing generated a further $5.3 billion in GDP and 0.3 million jobs. Both sectors use domestic inputs, whose production created more value-added and jobs. However, the supply of inputs to farmers and processors account for a relatively small share of the AFS. A larger off-farm component is the trading of agriculture-related products between farmers, processors, and consumers. This created $8.4 billion in GDP and employment for 0.7 million

workers, making it the second largest component of Guatemala's AFS and responsible for about half of the total trade and transport GDP (shown in Table 1). In total, Guatemala's AFS generated 36% of total GDP and 53% of employment in 2020.

Table 2. GDP and Employment in Guatemala's Agri-Food System in 2020

Economic sector	Value		Share of total	
	GDP ($ billion)	Employment (millions)	GDP (%)	Employment (%)
Total	**70.5**	**6.5**	**100**	**100**
Agri-food system	**25.1**	**3.5**	**35.6**	**53.2**
Agriculture	7.3	2.0	10.3	30.8
Agro-processing	5.3	0.3	7.5	5.3
Input supply	2.4	0.1	3.4	1.8
Trade & transport	8.4	0.7	11.9	11.1
Hotels & food services	1.8	0.3	2.5	4.1
Rest of the economy	**45.4**	**3.1**	**64.4**	**46.8**

Source: IFPRI estimates using supply-use tables and ILO employment data.
Note: GDP is gross domestic product measured in constant 2017 US dollars.

Table 3 breaks down the AFS into different value chains based on major product groupings. The horticultural value-chain, for example, includes the on-farm cultivation of fruits and vegetables (agriculture); the processing and packaging of fruit and vegetable products (manufacturing); the trading and transporting of horticultural products, including exporting costs; and the preparation of meals in hotels and restaurants using fruits and vegetables as inputs (food services). The horticulture value-chain makes up 27.9% of Guatemala's AFS. The last column shows the share of off-farm components (beyond the farm gate) in AFS GDP by each value chain. For example, of the GDP generated by the horticulture value-chain, 64.6% comes from off-farm activities.

Table 3. Breakdown of Guatemala's Agri-Food System GDP by Value Chains, 2020

Value chains	GDP ($ billion)			Share (%)			Off-farm share of total (%)
	Total	On-farm	Off-farm	Total	On-farm	Off-farm	
Agri-food system (AFS)	**25.1**	**7.5**	**17.7**	**100**	**100**	**100**	**70.3**
Cereals	**1.6**	0.6	1.0	6.4	7.6	5.9	64.8
Pulses & oilseeds	**1.4**	0.4	0.9	5.4	5.8	5.3	68.5
Horticulture & roots	**7.0**	2.5	4.5	27.9	33.3	25.6	64.6
Livestock products	**5.5**	1.3	4.2	21.7	17.2	23.6	76.5
Fish products	**0.4**	0.2	0.3	1.6	2.1	1.4	61.3
Export-oriented crops	**3.1**	1.8	1.3	12.3	23.8	7.5	42.7
Forestry products	**1.1**	0.8	0.4	4.4	10.2	2.0	31.7
Beverages & other foods	**5.0**	0.0	5.0	20.1	0.0	28.6	100.0

Source: IFPRI estimates using supply-use tables.
Note: GDP is gross domestic product measured in constant 2017 US$. Off-farm GDP includes agri-food processing; trading and transport of agricultural and food products; food services; and the domestic production of inputs (see Table 2). Final column is the ratio of off-farm to total GDP generated by each value chain (column 3 divided by column 1).

Horticulture and livestock products were largest agricultural value chains in 2020. Guatemala's AFS value chains generate more value-added off the farm with the export-oriented value chain (e.g., cardamom) as an exception where more value-added is generated on the farm. Finally, "beverages and other foods" include highly processed products whose agricultural origins are difficult to determine (e.g., baby foods and baked goods) or whose value-added is already assigned to other value chains (e.g., cereals used in the production of alcoholic beverages). As such, all the value-added for beverages and other foods is reported as occurring entirely off the farm.