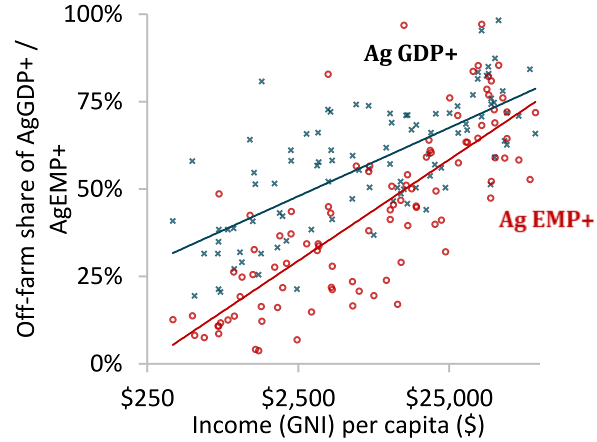
Measuring Changes in Kenya's Agri-Food System

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

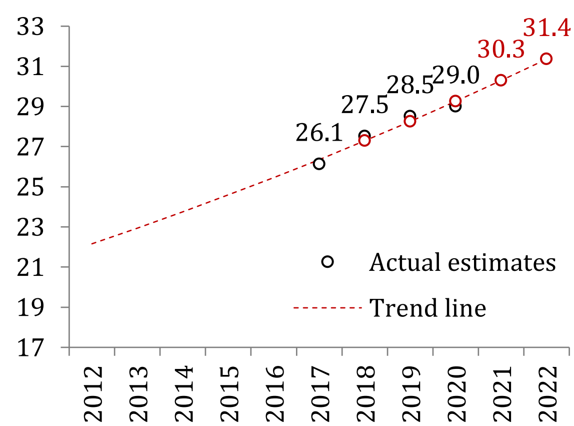
Indicators (* FTF indicator)	Units	Actual estimates 2017	2018	2019	2020	Projected estimates 2021	2022
Total GDP	$ bil.	**74.9**	**79.1**	**83.2**	**83.5**	**88.0**	**91.4**
Agriculture	$ bil.	17.1	18.1	18.5	19.5	20.3	21.1
Agri-food (AgGDP+)	$ bil.	26.1	27.5	28.5	29.0	30.3	31.4
* Change from 2017	%	-	5.3	9.1	11.0	15.9	20.0
Total employment	**Mil.**	**21.5**	**22.0**	**22.5**	**22.8**	**23.3**	**23.7**
Agriculture	Mil.	7.6	7.5	7.5	7.7	7.7	7.7
* Agri-food (AgEMP+)	Mil.	10.5	10.5	10.6	10.7	10.8	10.9

Summary

- In 2020, the AFS generated 34.7% of total GDP in Kenya and 47.2% of total employment, while agriculture alone represented 23.3% and 33.6%, respectively.
- AgGDP+ and AgEMP+ grew at 1.7% and 1.4% respectively between 2019 and 2020, reaching $29.0 billion and 10.7 million workers in 2020.
- If 2013-2020 trends continued, AgGDP+ and AgEMP+ would have reached $31.4 billion and 10.9 million workers by 2022.

Note: GDP is measured in constant 2017 US$.

Projecting AgGDP+ in Kenya ($ bil.)



Kenya's Agri-Food System in 2020

This section provides data on the structure of Kenya'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 how agriculture is an important part of Kenya's economy – it generated 23% of national GDP and 34% of total employment in 2020. Crops dominate the sector, but livestock is also an important source of GDP and employment. Part of agriculture's output is supplied to the manufacturing sector for processing, although manufacturing as a whole generated only 9% of GDP and 7% of employment. Kenya depends heavily on agricultural and agro-processing exports (agro-proessing exports are aggregated into manufacturing exports in Table 1), and most foreign earnings are used to pay for imported manufactured goods, such as machinery, vehicles, and refined petroleum. More than half of total GDP is generated from services with trade & transport and finance & business the largest service subsectors.

Table 1. Structure of Kenya's Economy in 2020

Economic sector	Share of total (%)			
	GDP	Employ-ment	Exports	Imports
Total	**100**	**100**	**100**	**100**
Agriculture	**23.3**	**33.6**	**15.2**	**2.2**
Crops	17.5	24.7	15.0	2.2
Livestock	4.2	6.6	0.1	0.1
Forestry	1.0	2.1	0.1	0.0
Fishing	0.6	0.3	0.0	0.0
Industry	**19.2**	**15.3**	**48.9**	**83.4**
Mining	0.9	0.8	1.8	0.5
Manufacturing	9.1	7.0	47.1	80.8
Electricity & water	2.6	0.4	0.0	0.0
Construction	6.6	7.1	0.0	2.1
Services	**57.5**	**51.1**	**35.9**	**14.3**
Trade & transport	19.6	24.5	10.3	4.6
Hotels & food services	0.7	3.6	0.1	0.0
Finance & business services	18.9	4.3	10.1	8.4
Government, health & education	13.0	10.3	0.0	0.0
Other services	5.2	8.3	15.4	1.3

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 $19.5 billion in GDP and employed 7.7 million workers in 2020. Agro-processing generated a further $4.5 billion in GDP and 0.7 million jobs. Both sectors use domestic inputs, whose production created more value-added and jobs. However, the supply of inputs to farmers and processors accounts for a relatively small share of the AFS. A much larger off-farm component is the trading of agriculture-related products between farmers, processors, and consumers. This created $3.3 billion in GDP and employment for 1.1 million workers. In total, Kenya's AFS generated 35% of total GDP and 66% of employment in 2020.

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

Economic sector	Value		Share of total	
	GDP ($ billion)	Employment (millions)	GDP (%)	Employment (%)
Total	**83.5**	**22.8**	**100**	**100**
Agri-food system	**29.0**	**10.7**	**34.7**	**47.2**
Agriculture	19.5	7.7	23.3	33.6
Agro-processing	4.5	0.7	5.4	3.0
Input supply	1.4	0.2	1.7	0.9
Trade & transport	3.3	1.7	3.9	7.3
Hotels & food services	0.4	0.6	0.5	2.4
Rest of the economy	**54.5**	**12.0**	**65.3**	**52.8**

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

Table 3 breaks down the AFS into different value chains based on major product groupings. The cereals value-chain, for example, includes the on-farm cultivation of cereal crops (agriculture); the milling of cereals into flours (manufacturing); the trading and transporting of cereal products; and the preparation of meals in hotels and restaurants using raw and processed cereal inputs (food services). The cereals value-chain makes up 14.3% of Kenya'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 cereals value-chain, 20.3% comes from off-farm activities.

Table 3. Breakdown of Kenya'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)	**29.0**	**20.2**	**8.8**	**100**	**100**	**100**	**30.3**
Cereals	4.2	3.3	0.8	14.3	16.4	9.6	20.3
Pulses & oilseeds	1.9	1.3	0.5	6.4	6.6	6.1	28.5
Roots	2.7	2.5	0.2	9.1	12.3	2.0	6.5
Horticulture	6.2	5.4	0.8	21.3	26.8	8.5	12.2
Livestock products	5.9	3.3	2.6	20.4	16.2	30.1	44.7
Fish products	0.6	0.5	0.1	2.2	2.5	1.5	20.3
Export-oriented foods	2.7	1.8	0.9	9.2	9.0	9.9	32.4
Export-oriented nonfoods	0.6	0.4	0.2	2.0	1.8	2.4	37.1
Forestry products	2.0	1.7	0.3	6.8	8.5	3.0	13.2
Beverages & other foods	2.4	0.0	2.4	8.2	0.0	27.0	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).

Horticultural products were the largest agricultural value chain in 2020, followed by livestock products. Kenya's value chains typically generate most of their value-added on the farm. Livestock and the two export-oriented value chains have larger parts of their value-added generated off-farm. Note that "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.