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Drivers of Agrifood System Transformation

Lessons from Feed-the-Future Country Studies

Xinshen Diao and **James Thurlow** (IFPRI), and many others

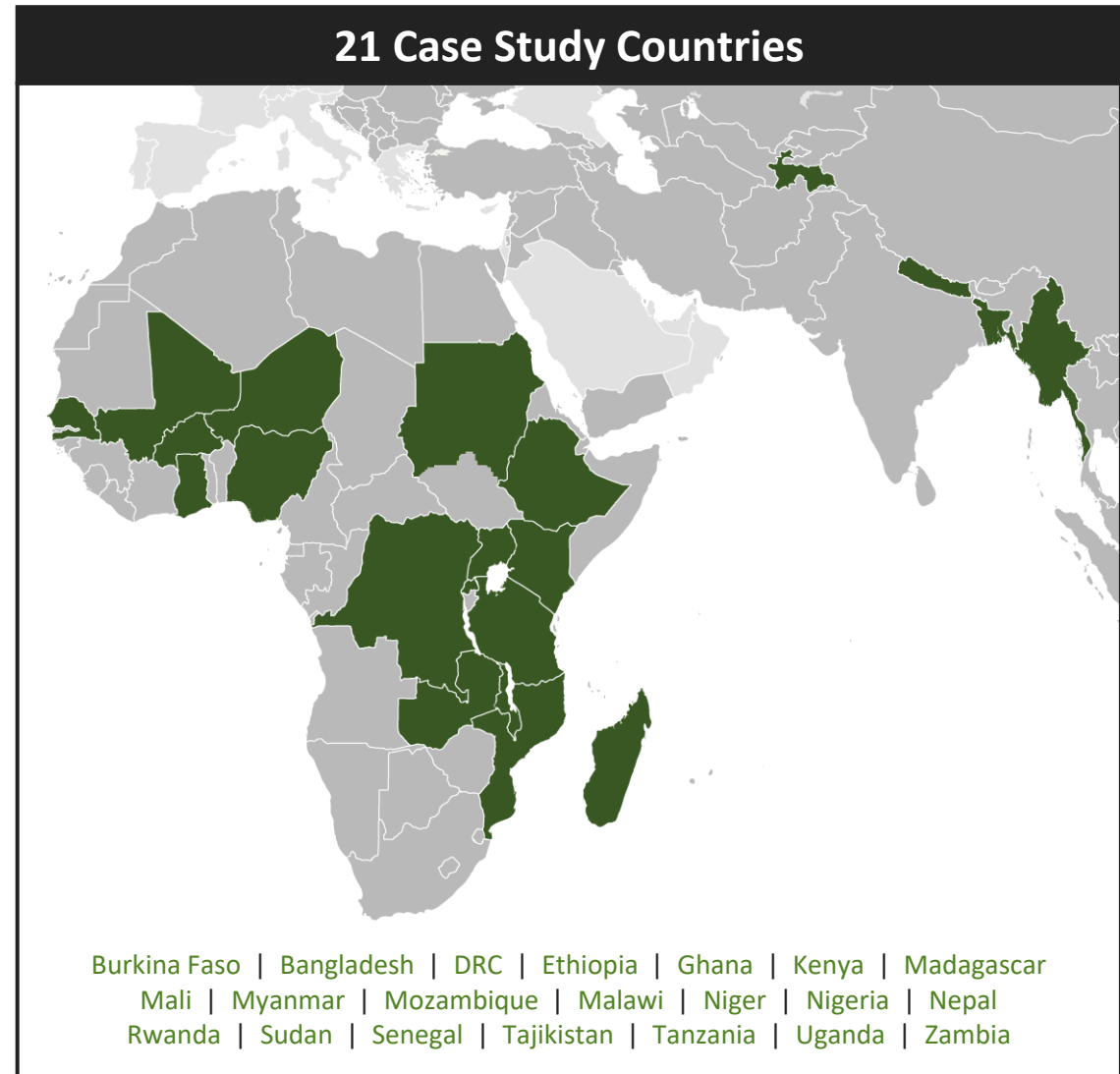
Overview

Study objectives:

- Measure national agrifood systems (AFS)
- Decompose changes over the 2010s
- Identify patterns across countries

Three parts:

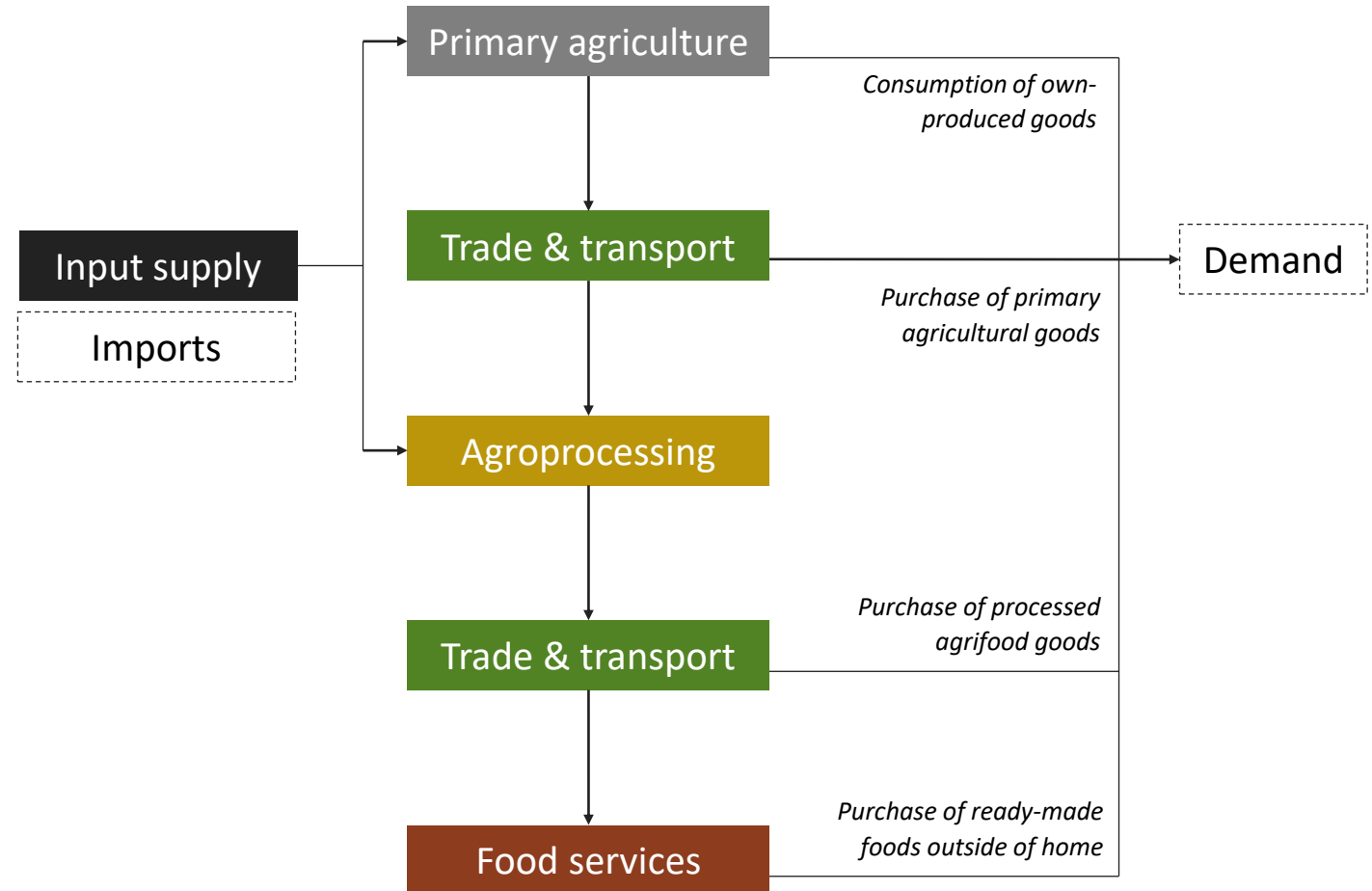
1. What is an AFS and how to measure it?
2. Example AFS growth diagnostic
3. Four lessons from across FTF focus countries



Agrifood Systems

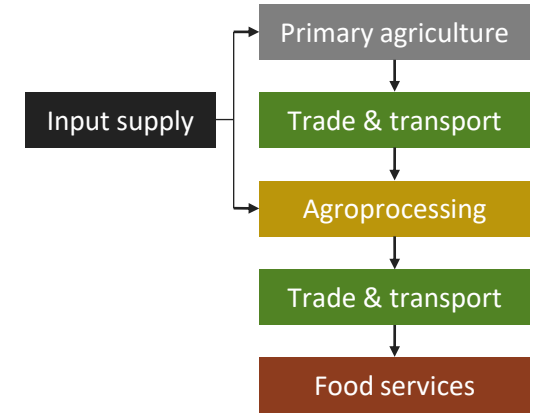
Measuring AFS gross domestic product (GDP) and employment

- Five major components
- Each maps directly to countries' own national accounts data
- Allows us to measure the changing structure of agrifood systems



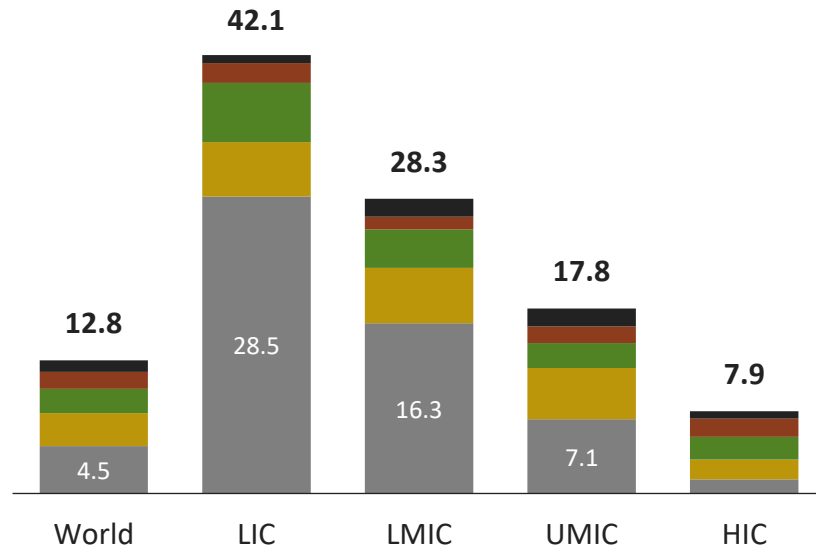
Global Agrifood System

AFS GDP = \$11.7 trillion in 2021 (13% of global GDP | 62% in developing countries)
 AFS employment = 1.3 billion workers in 2021 (38% of global workforce | 95% in developing countries)



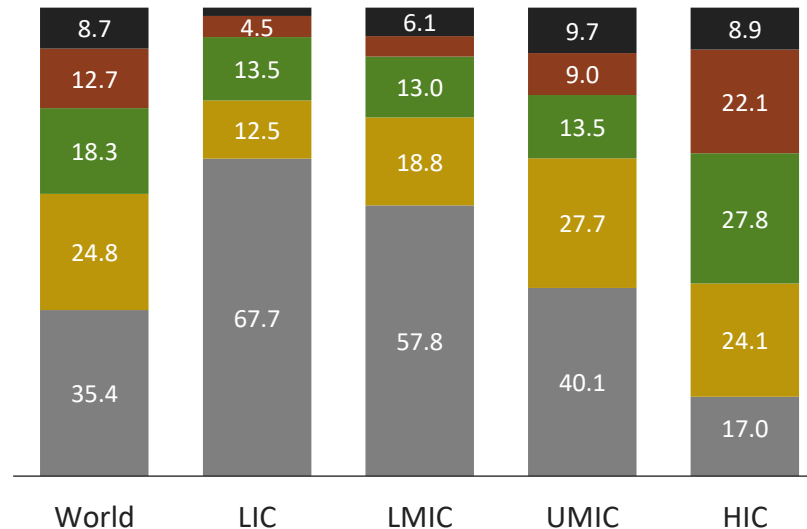
1 Share of total GDP in 2021 (%)

- Agriculture and the agrifood system contribute less to the overall economy in more developed countries



2 Share of agrifood system GDP in 2021 (%)

- Off-farm components are more important parts of the agrifood system in more developed countries



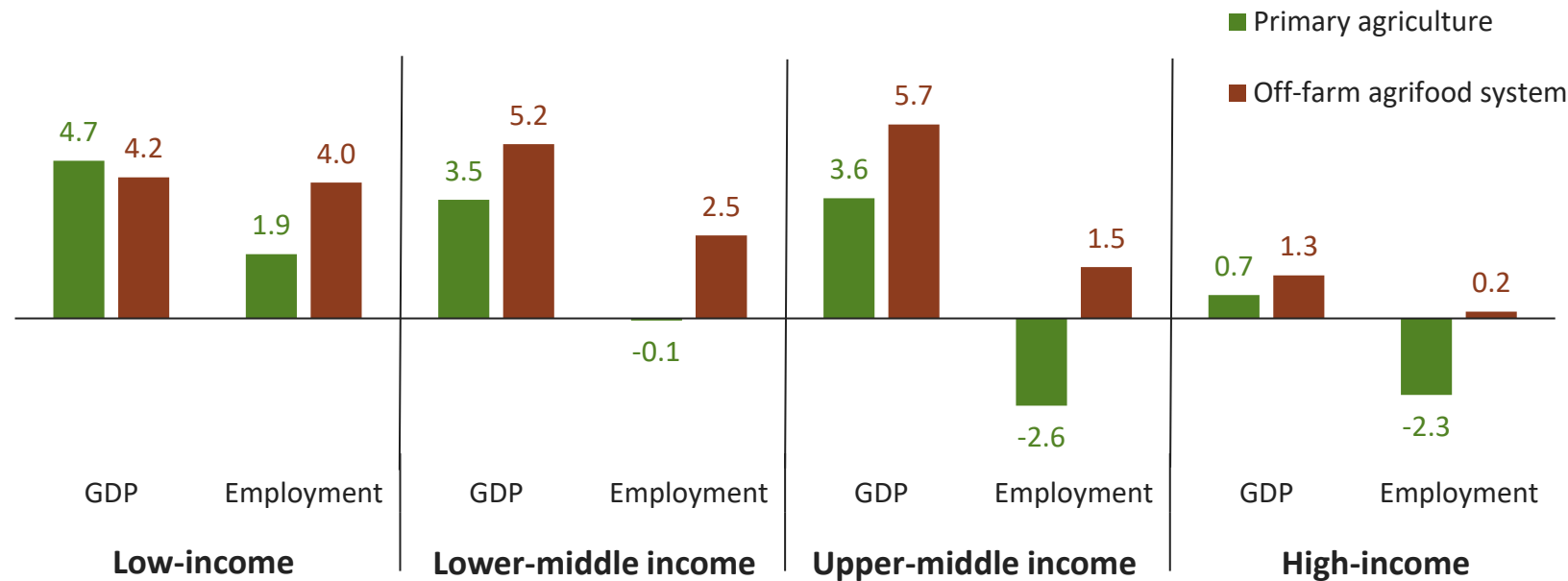
LIC = low-income | LMIC = low-middle | UMIC = upper-middle | HIC = high-income

Source: IFPRI Global Agrifood System Database of 217 countries (2023)

Global Agrifood System

3 Annual growth in agrifood system GDP and employment during 2000-2021 (%)

- Agrifood systems are transforming rapidly in middle- and high-income countries (faster off-farm GDP and employment growth)
- Mixed or weak evidence of transformation in low-income countries (off-farm employment is growing faster, but not for GDP)



Part 2

Are agrifood systems transforming in FTF countries?

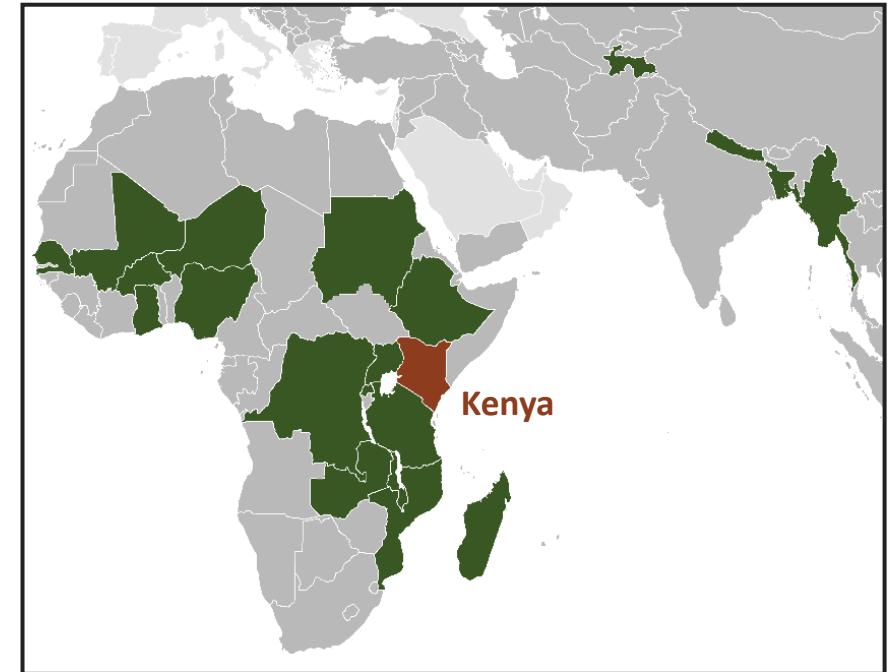
Country Case Studies

Deep-dive studies on the drivers of agrifood system growth:

- Measure agrifood system GDP and employment
- Decompose agrifood systems into their component value chains
- Track changes between 2009 and 2019

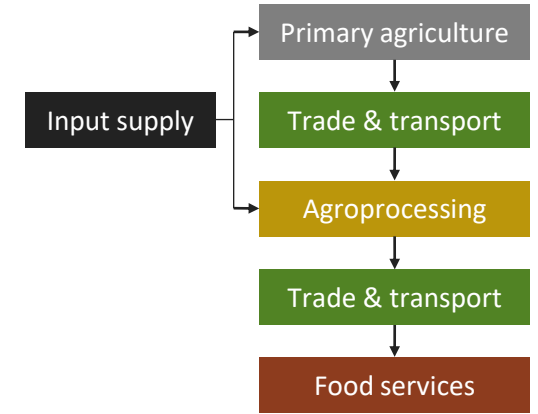
21 case studies covering most FTF countries

- Illustrate using **Kenya**
- Other studies can be downloaded [here](#)



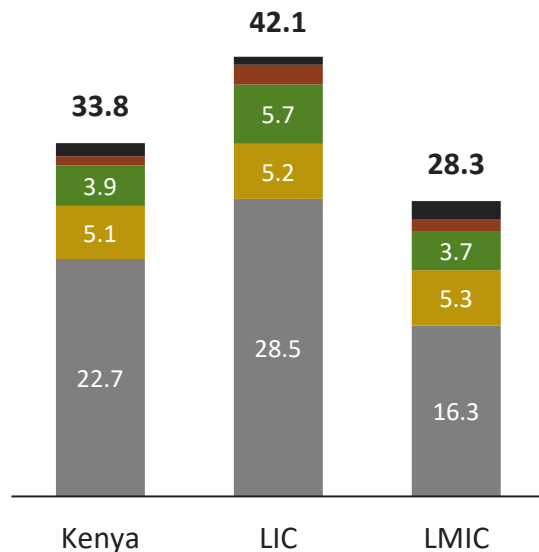
Kenya's Agrifood System

AFS GDP = \$31 billion in 2019 (34% of GDP)
 AFS employment = 10 million workers in 2019 (55% of workforce)



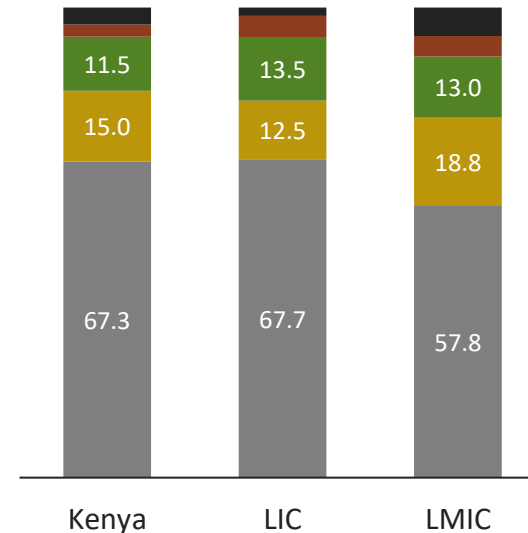
4 Share of total GDP in 2019 (%)

- Kenya's AFS lies between the average low-income and lower-middle income country



5 Share of agrifood system GDP in 2019 (%)

- In Kenya, about \$1 of GDP is generated off the farm for every \$2 generated on the farm

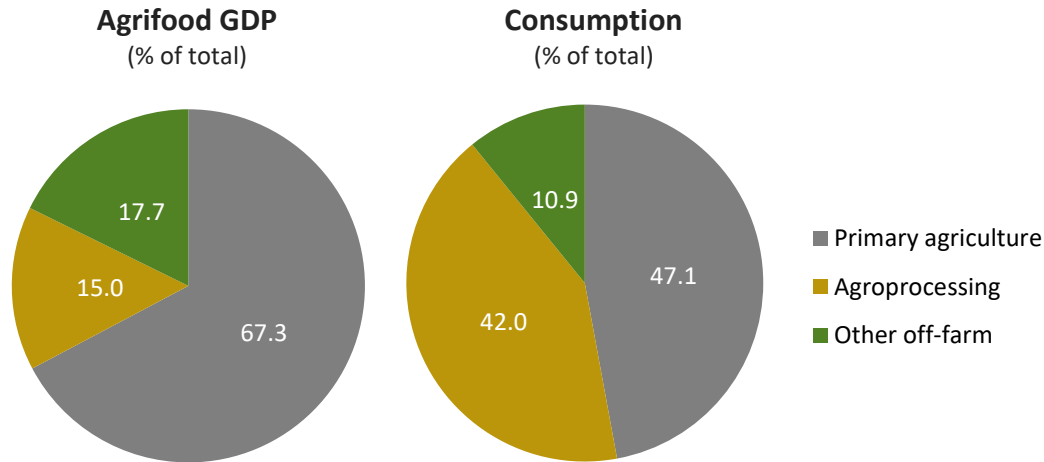


LIC = low-income | LMIC = low-middle

Kenya's Agrifood Demand and Supply

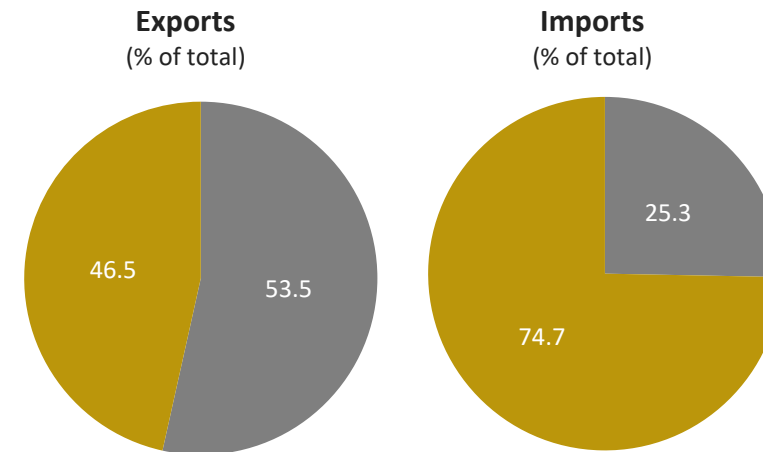
6 Agrifood GDP vs. consumption

- Processed products are a larger share of consumption than of production



7 Agrifood exports vs. imports

- Exports dominated by primary agriculture, but imports mainly processed products

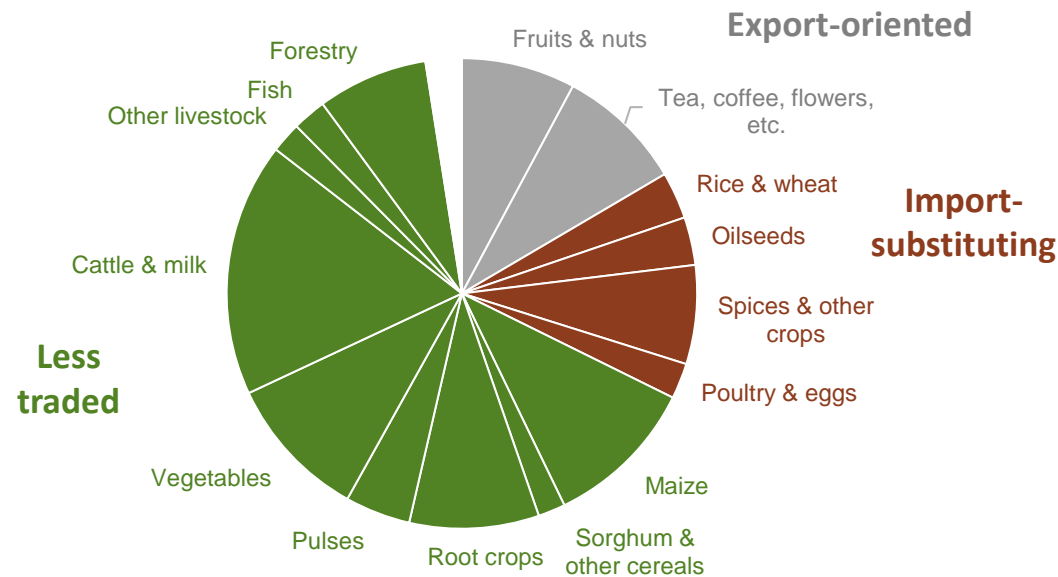


Unpacking Kenya's Value Chains

Decompose agrifood system into three groups of value chains:

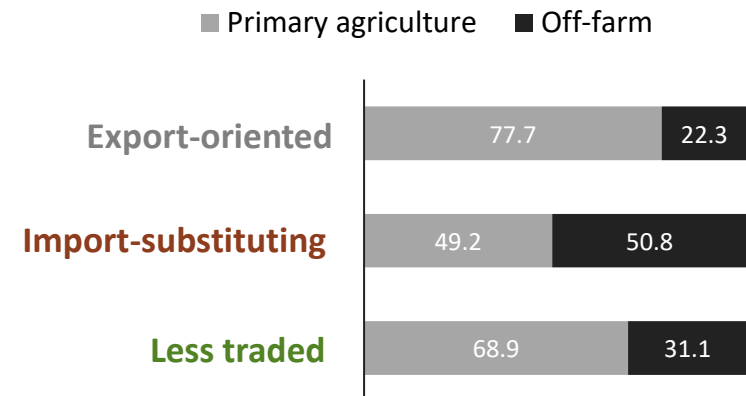
- **Export-oriented** = above average export-to-output ratio
- **Import-substituting** = above average import-to-demand ratio
- **Less-traded** = all other value chains

8 Value chain share of total AFS GDP (%)



9 On-farm vs. off-farm GDP in value chain groups (%)

- Import-substituting value chains have the largest share of off-farm value addition (i.e., GDP)



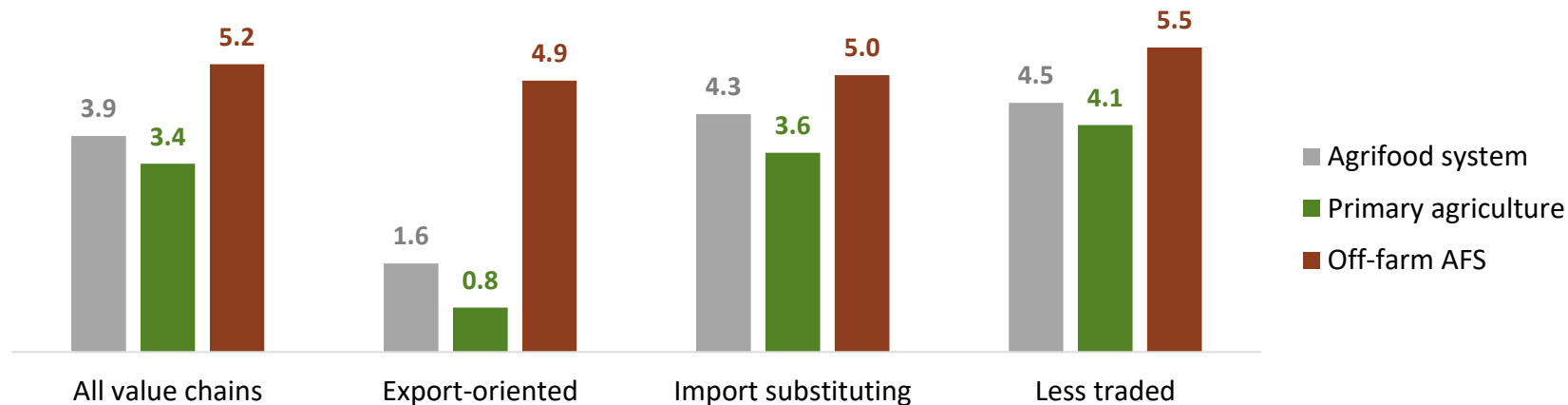
Agrifood System Growth in Kenya

Track changes in value chain GDP growth:

- Faster off-farm growth means faster agricultural transformation

10 Annual value chain growth during 2009-2019 (%)

- There was faster growth in value chains serving domestic markets (i.e., import-substituting and less traded products)



Part 3

What general lessons emerged across the 21 country studies?

Lesson 1 | Off-farm growth helps drive agricultural transformation

Evidence:

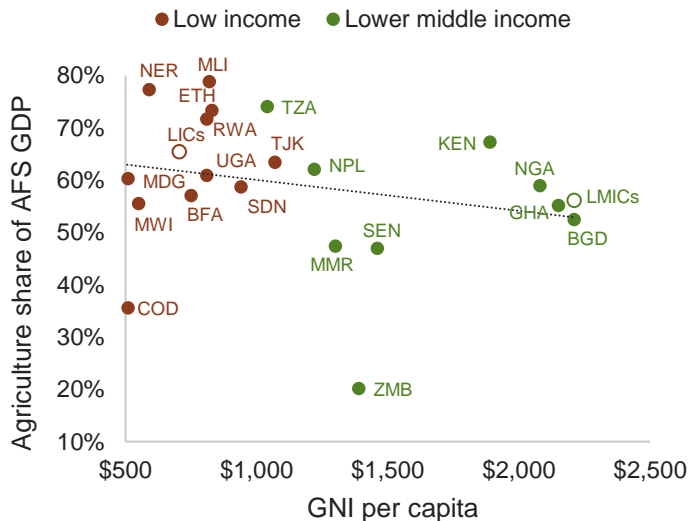
- Primary agriculture still dominates AFS in most FTF countries (Figure A)
- AFS are growing, driven by faster off-farm growth (Figure B)
- Faster off-farm growth is consistent with agric. transformation, which is occurring in most FTF countries

Implications:

- Investment portfolios should consider how they are contributing to both on- and off-farm income growth and job creation

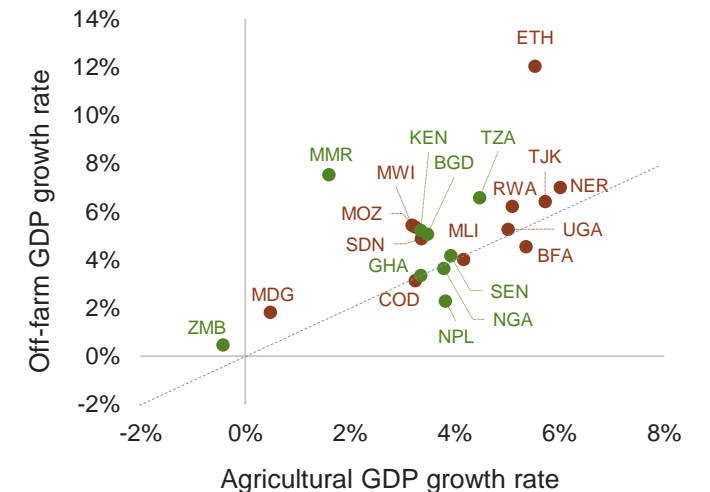
A Agriculture's share of total agrifood system GDP (2019)

- Primary agriculture is the largest share of total AFS GDP in most countries
- Off-farm components are a larger share of AFS GDP in countries with higher incomes



B Growth in agricultural & off-farm GDP (2009-2019)

- Off-farm AFS is growing faster than agriculture in most countries (i.e., above the diagonal line)



Lesson 2 | Agricultural exports are highly concentrated

Evidence:

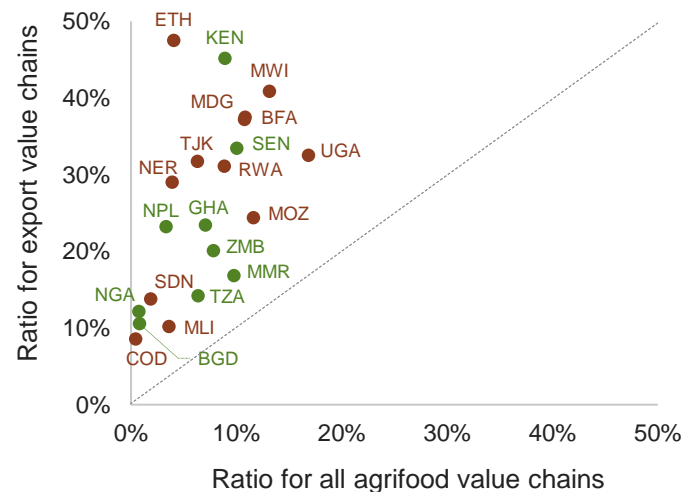
- Value chains separated into export-oriented, import-substitutable, and less traded groups
- Agric. exports tend to be highly concentrated within a narrow set of value chains (Figure C)
- Export-oriented value chains have often performed poorly compared to the overall AFS (Figure D)

Implications:

- Diversifying agricultural exports is important, but these are often not the value chains driving broad-based AFS growth

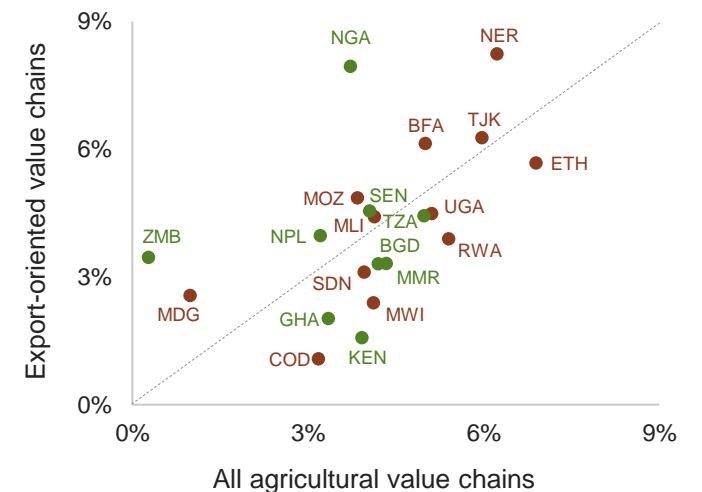
C Share of exports in total value chain output (2019)

- Export-oriented value chains export a larger share of total output than the overall agrifood system (far above diagonal line)
- Larger gaps from diagonal mean greater concentration of exports



D Growth in export-oriented value chains versus all value chains (2009-2019)

- Export-oriented value chains have not always grown faster than overall agrifood value chains (more countries are below the diagonal line)



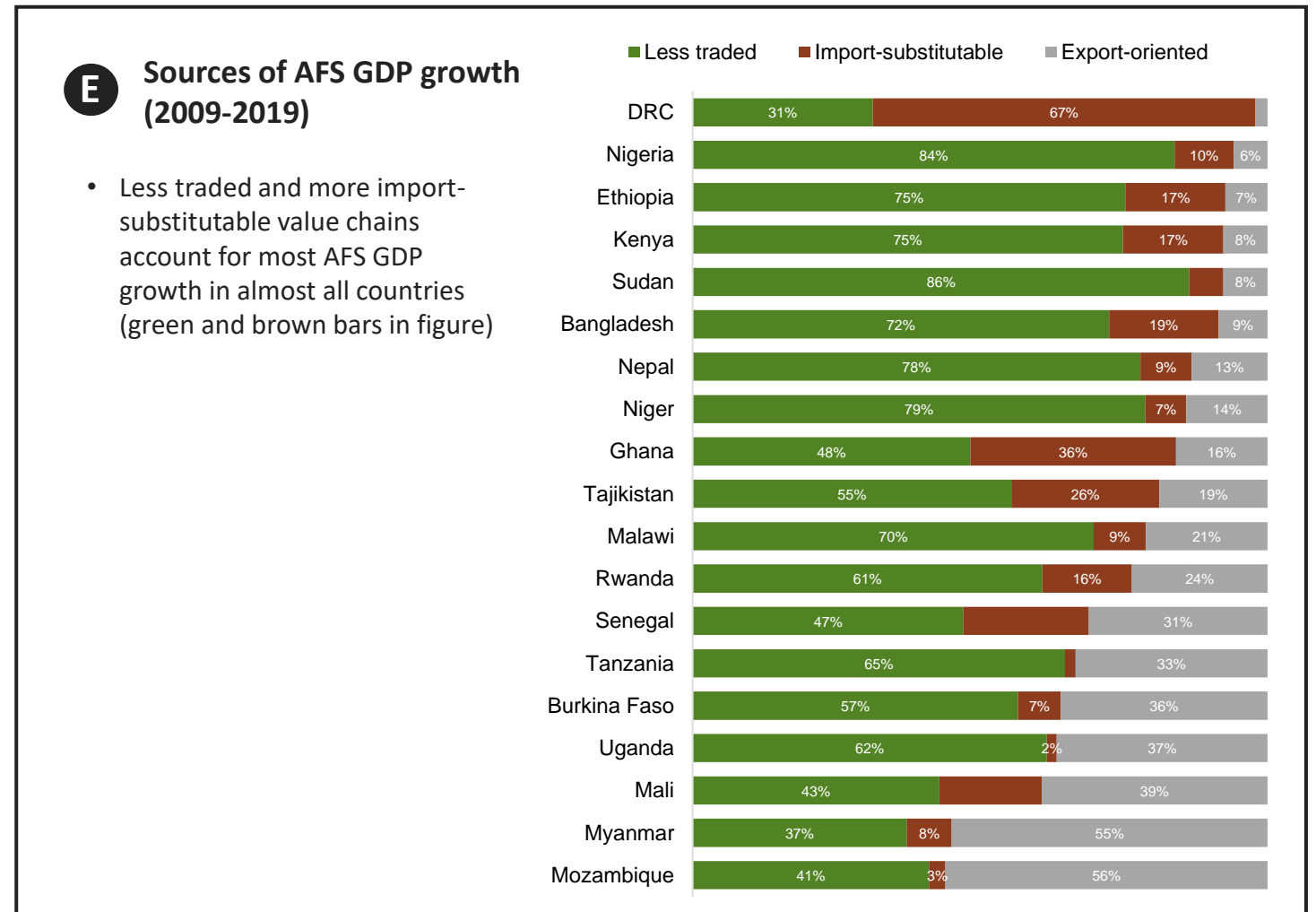
Lesson 3 | Domestic-oriented value chains are driving AFS growth

Evidence:

- Less traded and import-substitutable value chains mainly supply domestic markets (for consumption or input use by local producers)
- Domestic-oriented value chains are the main source of AFS growth (Figure E)
- These were a large share of AFS GDP a decade ago, and have grown faster than export-oriented value chains

Implications:

- Investment portfolios should be guided by household consumption patterns and dietary change, since these are crucial drivers of future AFS growth



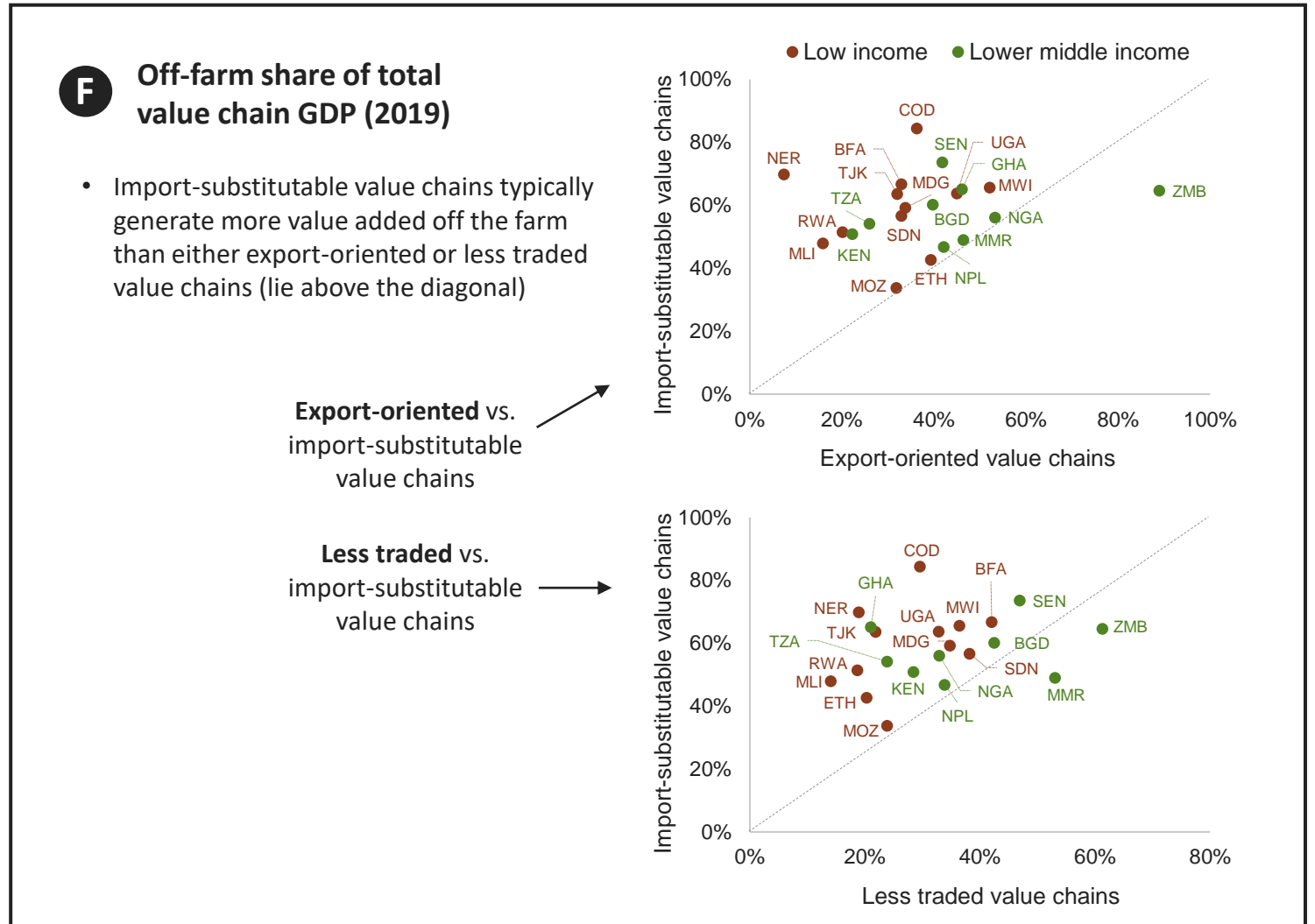
Lesson 4 | Import-substitution could accelerate transformation

Evidence:

- Off-farm GDP growth is associated with agricultural transformation (Figure A)
- Import-substitutable value chains tend to generate more off-farm GDP (Figure F)

Implications:

- Promoting value chains that substitute for imports may be more effective at driving agricultural transformation and job creation beyond the farm (while also improving trade balances)



Summary

Lesson 1 : Off-farm growth helps drive agric. transformation

- Investment portfolios should contribute to both on- and off-farm income growth and job creation

Lesson 2 : Agricultural exports are highly concentrated

- Diversifying agric. exports is important, but export-oriented value chains are currently often not driving agrifood system growth

Lesson 3 : Domestic-oriented VCs are driving AFS growth

- Investment portfolios should be informed by consumption patterns and dietary change, since these are crucial drivers of future AFS growth

Lesson 4 : Import-substituting VCs could drive transformation

- Value chains that substitute for imports may be more effective at driving agricultural transformation and creating off-farm jobs

