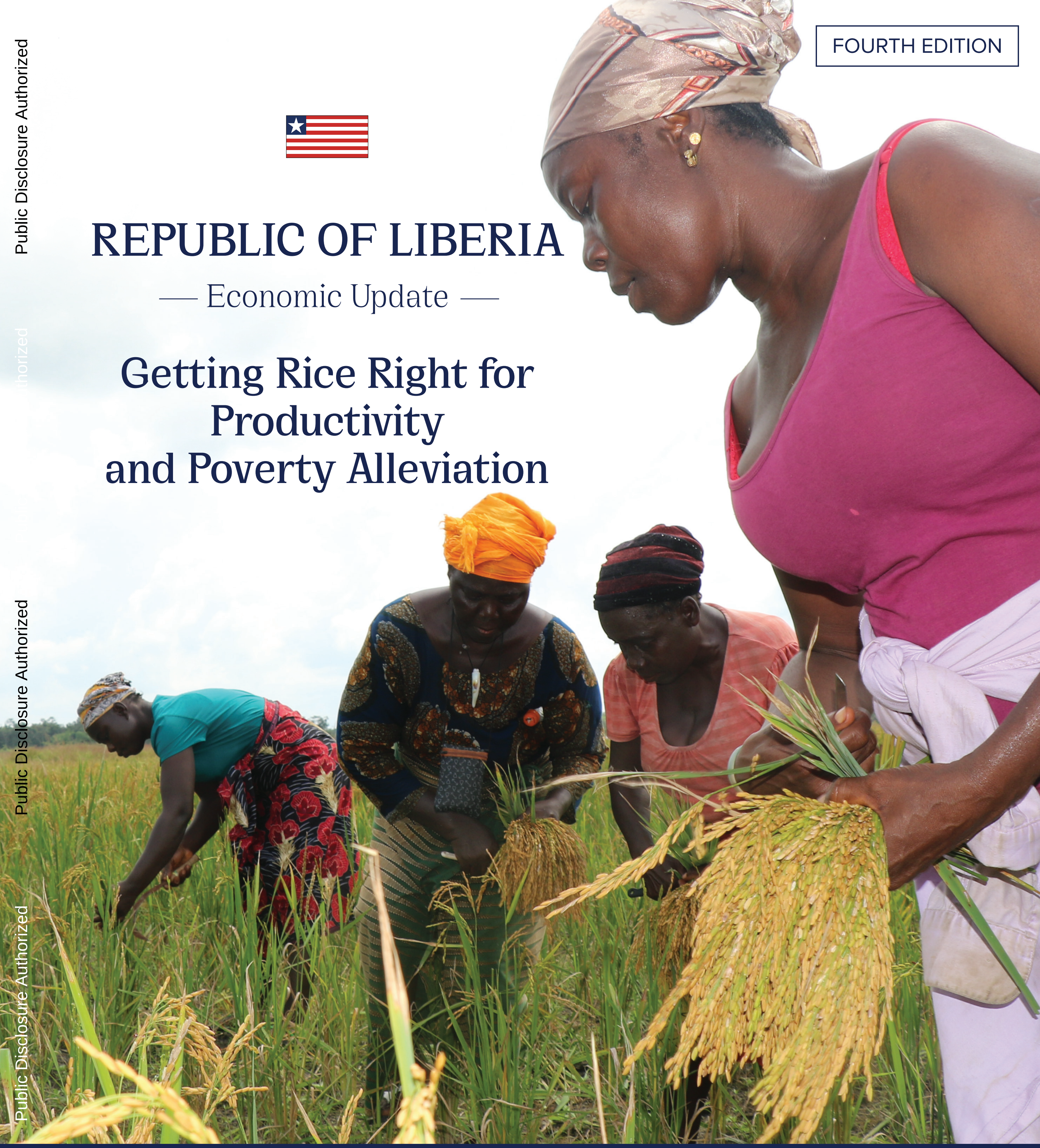
FOURTH EDITION

REPUBLIC OF LIBERIA

— Economic Update —

Getting Rice Right for Productivity and Poverty Alleviation



Macroeconomic, Trade, and Investment Global Practice
West and Central Africa Region

June 2023

WORLD BANK GROUP

1818 H Street NW
Washington DC 20433
Telephone: 202-473-1000
Internet: www.worldbank.org

Cover photo:

Cover design:

FOURTH EDITION

REPUBLIC OF LIBERIA

— Economic Update —

Getting Rice Right for Productivity and Poverty Alleviation

June 2023

WORLD BANK GROUP

Preface and Acknowledgments

This is the fourth edition of the Liberia Economic Update (LEU), a series of annual reports that assesses recent economic developments in Liberia and assists the government and its development partners in identifying emerging issues and addressing persistent challenges. It presents a broad overview of Liberia's macroeconomic context, assesses the macro-fiscal and growth outlook over the short and medium terms, and sheds light on the rice sector and the implications for productivity and poverty alleviation in Liberia. The objectives of the series are to (i) strengthen the analytical underpinnings of development policy in Liberia, and (ii) contribute to an informed debate on policy options to enhance macroeconomic management and accelerate progress on the World Bank Group's twin goals of eliminating extreme poverty and promoting shared prosperity.

The fourth edition of the Liberia Economic Update was prepared by a World Bank team led by Gweh Gaye Tarwo (Economist) and including Mamadou Ndione (Senior Economist), Kelvin N. Doesieh (Consultant), and Alari Mahdi (Private Sector Specialist). The analysis also benefited from the advice provided by Paul Andres Corral Rodas (Senior Economist, peer reviewer) and Ferdinand Owoundi Fouda (Economist, peer reviewer). Aurelien Kruse (Lead Economist), Sandeep Mahajan (Practice Manager), Mack Capehart Mulbah (Acting Country Manager, Liberia), and Pierre Laporte (Country Director, Ghana, Liberia, and Sierra Leone) provided overall guidance.

Irene Sitienei (Program Assistant) and Joseph Koilor (Team Assistant) provided administrative support to the team. Michael Sahr (External Affairs Officer) helped with external communications.

The team is also grateful to officials of the Ministry of Finance and Development Planning, the Central Bank of Liberia, the Liberia Institute of Statistics and Geo-Information Services (LISGIS), and the Ministry of Agriculture for the information obtained, and the assistance and cooperation extended during the preparation of the report.

 The report is based on information current as of June, 2023. The World Bank team welcomes stakeholder feedback on the content of the Liberia Economic Update. Please direct all correspondence to Gweh Gaye Tarwo (gtarwo@worldbank.org).

Abbreviations and Acronyms

AE	Advanced economies
CapEx	Capital expenditure
CBL	Central Bank of Liberia
COVID-19	Coronavirus disease 2019
DHS	Demographic and Health Survey
DSA	Debt Sustainability Analysis
ECOWAS	Economic Community of West African States
EMDEs	Emerging markets and developing economies
FAO	Food and Agriculture Organization
FAOSTAT	Food and Agriculture Organization Corporate Statistical Database
FDI	Foreign direct investment
GDP	Gross domestic product
GEP	World Bank Global Economic Prospects
GHI	Global Hunger Index
GoL	Government of Liberia
GST	Goods and services tax
HIES	Household Income and Expenditure Survey
IDA	International Development Association
IFAD	International Fund for Agricultural Development
IMF	International Monetary Fund
LASIP	Liberia Agriculture Sector Investment Program
LD/L$	Liberian dollar
LEC	Liberia Electricity Corporation
LEU	Liberia Economic Update
LISGIS	Liberia Institute of Statistics and Geo-Information Services
LNRDS	Liberia National Rice Development Strategy
M2	Broad money
MFDP	Ministry of Finance and Development Planning
MOH	Ministry of Health
NGOs	Nongovernmental organizations
NPL	Nonperforming loans
PAPD	Pro-Poor Agenda for Prosperity and Development
PPP	Purchasing power parity
p.p.	Percentage point
PV	Present value
PWT	Penn World Table
RHS	Right Hand Side
SDR	Special Drawing Rights
SSA	Sub-Saharan Africa
UNICEF	United Nations Children's Fund
UN	United Nations
US$	United States dollar
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
VAT	Value added tax
WBG	World Bank Group
WFP	World Food Programme
WHO	World Health Organization

Table of Contents

LIST OF BOX, FIGURES AND TABLES

BOX

FIGURES

TABLES

Executive Summary

RECENT ECONOMIC DEVELOPMENT AND OUTLOOK

In the last two years, Liberia's economic performance has improved. Following two consecutive years of contraction (2019 and 2020), reflective of high inflation, weak consumption, and the coronavirus disease 2019 (COVID-19) shock, the economy experienced a strong rebound. Real gross domestic product (GDP) grew at 5.0 percent in 2021 and 4.8 percent in 2022. Growth in 2022 was led by the agriculture and mining sectors, driven by a relatively good agricultural harvest and increased gold production. Economic growth is expected to taper off to 4.3 percent in 2023 before gradually accelerating to an average of 5.6 percent over 2024–2025 as the country benefits from tailwinds from mining and structural reforms in key enabling sectors—energy, transportation, trade, and financial services.

Inflation remained in single digits despite high global food and fuel prices and a relaxation in monetary and fiscal policies. After a significant decline from 17.4 percent in 2020 to 7.9 percent in 2021, inflation declined further to 7.6 percent in 2022. From 2021 to 2022, food prices fell by 1.6 percent, thanks to relatively good agricultural harvests, whereas nonfood inflation reached 10.6 percent, primarily driven by energy prices. The Central Bank of Liberia (CBL) kept the policy rate at 20 percent from January to July before cutting it to 15 percent in August as inflation remained in single digits. On the other hand, the government loosened its fiscal policy through the provision of subsidies, transfers, and social benefits, but this partly helped offset the impact of high international prices for key imports, including rice.

Liberia's poverty rate is projected to have declined slightly in the last two years as GDP growth rebounds and inflation moderates. The rebound in growth and decline of inflation in 2021 and 2022 boosted private consumption per capita and helped reduce poverty rates. Real private consumption per capita increased by 2.6 percent in 2021 and 1.2 percent in 2022. As a result, Liberia's international poverty rate (US$2.15 person/day purchasing power parity [PPP]) decreased by 1.0 percentage points to 36.0 percent in 2021, and further by 0.5 percentage points to 35.5 percent in 2022.

The government's fiscal position worsened in 2022. The overall fiscal deficit widened to 6.9 percent of GDP in 2022, up from 2.4 percent in 2021, with the increase entirely driven by the primary deficit that rose from 1.5 percent of GDP in 2021 to 6.0 percent in 2022. Domestic revenue fell, reflecting the poor performance of the goods and services tax (GST) and taxes on international trade, while external grants declined by 3.1 percentage points of GDP, partly reflecting the change in the International Development Association' (IDA)' lending policy for countries at moderate risk of debt distress under IDA20. On the expenditure side, the provision of subsidies, grants, and social benefits was increased by 1.4 percentage points of GDP to offset the effect of the higher food and fuel prices on the economy and households. Government consumption spending increased by 0.2 percentage points of GDP to 10.4 percent. The fiscal deficit

was mainly financed by concessional resources, including the World Bank Group (WBG) budget support, as well as borrowing from commercial banks.

On the external side, Liberia's current account balance improved in 2022, thanks to the continued increase in mining export earnings. The increase in gold export in 2022 offset the increase in imports. Gold exports surged by 74.0 percent during the year and accounted for more than one-half of the total value of exports. Imports increased by 14.2 percent, or 0.3 percentage points of GDP in 2022, mostly on account of imports of petroleum products, which accounted for close to one-third of the value of imports in 2022. As a result, the trade balance improved from a deficit of 13.1 percent of GDP in 2021 to 9.8 percent in 2022. In contrast, the other components of the current accounts did not improve. On balance, the country's current account deficit narrowed to 15.7 percent of GDP from 17.8 percent in 2021, as the reduction in the trade deficit remained dominant. Despite robust foreign direct investment (7.4 percent of GDP in 2022), financing of the current account deficit was challenging. The overall balance of payment showed a deficit of 1.1 percent of GDP, covered by drawing from the international reserves.

Liberia's medium-term economic outlook is positive, but uncertainties remain. Economic growth is expected to taper off to 4.3 percent in 2023 and gradually pick up to an average of 5.6 percent over the course of 2024 and 2025 as the country benefits from tailwinds from mining and structural reforms in key enabling sectors—energy, transportation, trade, and financial services. As global commodity prices recede and the central bank maintains a prudent monetary policy stance, inflation is expected to linger in single digits. The government's fiscal deficit is projected to narrow in the medium term as the authorities strengthen expenditure controls. The main risks to the outlook, in addition to the fluctuations in commodity prices, are the uncertainties associated with the impending general and presidential elections.

GETTING RICE RIGHT FOR PRODUCTIVITY AND POVERTY ALLEVIATION

Even as it has been trying to recover from a decade of weak economic and social performance, Liberia's overall productivity and economic efficiency remain low, especially in vital sectors of the economy, including agriculture. Food security remains a major challenge for the population. Despite the rebound in growth and decline in poverty rates in 2021, food insecurity rose by 0.9 percentage points, with more than four-fifths of the population facing moderate or severe food insecurity. In 2022, the Global Hunger Index (GHI) classified Liberia as a country in a "serious state of hunger" (von Grebmer, Bernstein, Resnick, et al. 2022). The strong preference for rice among Liberians makes it integral to the country's food security, poverty alleviation, and efforts to address vulnerabilities. Rice is Liberia's staple, and as such the demand, supply, and price dynamics of the commodity have a major impact on household diets and budgets. Consequently, in the last two decades, the government has focused its efforts on enhancing agricultural productivity, with an emphasis on achieving self-sufficiency in rice. Yet these efforts have yielded very little results due to the many challenges that confront the rice subsector.

Demographic trends, economic growth, and a strong preference for rice are the main drivers of demand. Yet, Liberia produces only one-third of its rice needs due to several constraints, including limited access to technology, inefficient farming practices, low public and private investments, and a fragmented value chain, among other factors that have kept productivity low. Amid low production, the increase in imported rice prices continues to fuel food insecurity, poverty, and vulnerabilities in Liberia. Domestic production would need to triple to satisfy local demand, but increasing production would require significant investments in the rice sector, as well as policy actions.

Some potential areas of intervention are (i) stakeholder coordination and engagement on the operationalization of the Liberia National Rice Development Strategy and the Liberia Seed Development and Certification Agency Act of 2019 to ensure seed certification and promote development of the seed industry; (ii) addressing constraints to productivity in the rice sector through registration of customary land to improve tenure security, improving the coverage and quality of roads, providing affordable energy, and avoiding policies that distort the rice economy; and (iii) improving regional market price transmission and integration to further develop Liberia's rice value chain (Tsiboe, Dixon, and Wailes 2015). To boost production, adopting sectoral policies aimed at improving seed varieties; grading; and facilitating inputs, storage, processing, and distribution would be critical. Additionally, it would be crucial to provide training to guarantee that smallholder farmers embrace modern farming methods and to enhance market access and post-harvest management.

Hence, this report provides some broad directions for policies:

1. Scale up financing to agriculture, particularly the rice value chain, and develop programs that help farmers improve farming methods or practices that boost domestic production.
2. Embark on the needed reforms to broadly unlock the potential of the agriculture sector for farmers to either increase the share of local rice production or use the available land and labor to produce other crops and earn income for purchasing rice (local or imported).
3. Attract private investment for commercial agriculture, with an emphasis on investments in the rice value chain.
4. Develop a mechanism to maintain a predictable and stable food supply, particularly of rice.

CHAPTER 1

RECENT ECONOMIC DEVELOPMENTS

Growth and Poverty: Rebounding in the Face of External Price Pressures

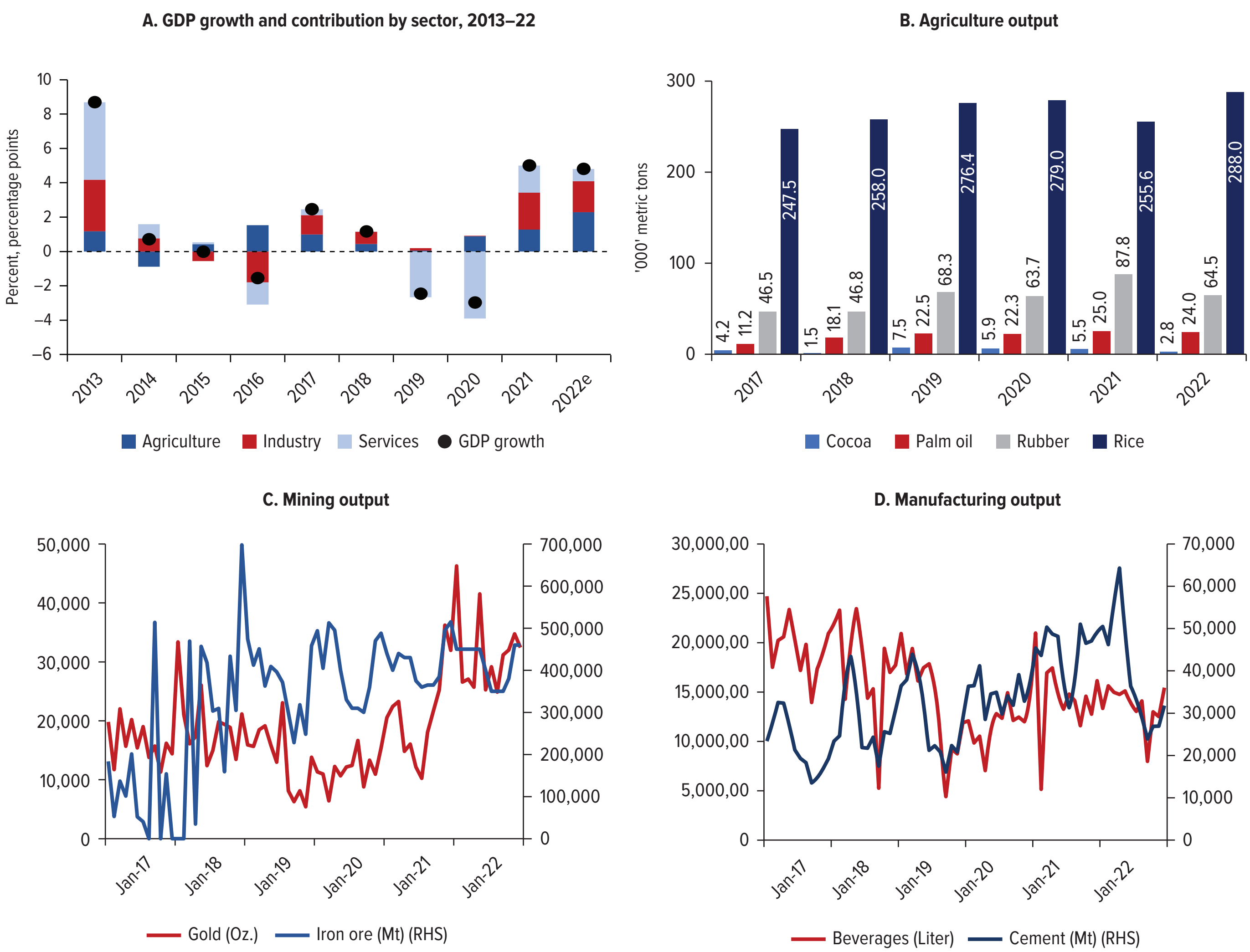
The Liberian economy has rebounded in the last two years. Following a contraction of 2.5 percent in 2019 due to high inflation and weak consumption, and 3.0 percent in 2020, reflective of the COVID-19 shock, the economy experienced a strong rebound. Real gross domestic product (GDP) grew at 5.0 percent in 2021 and 4.8 percent in 2022. The expansion in 2021 was due to improved external demand and higher prices for Liberia's exports, combined with the resumption of normal domestic activity, after the peak of the COVID-19 pandemic. In 2022, growth was driven by a relatively good agricultural harvest and increased gold production. The agriculture sector contributed the most to growth (2.3 percentage points), followed by the industrial sector (1.8 percentage points), mostly mining, while the contribution of services decelerated (to 0.7 from 1.1 percentage points), reflecting a slowdown in trade and transport services and hospitality (Figure 1A). On the demand side, gradual recovery in private consumption, greater public spending (consumption and investment), and improved external demand for Liberian exports were the main drivers of growth.

- **Agriculture:** Growth in the agricultural sector accelerated to 5.9 percent in 2022, from 3.3 percent in 2021. Increased crop production, especially rice and cassava produced primarily for domestic consumption, were the main drivers of growth in the sector.[1] Whereas rubber and palm oil production declined by 26.5 percent and 4.1 percent, respectively, rice production increased by 13.0 percent, about 10.0 percent above the five-year average. The production of cassava, a key staple that substitutes for rice in household diets, also increased significantly during the year, about 15.0 percent above the five-year average. In the last three years, growth in the agriculture sector has gained momentum, averaging 3.9 percent from 2020 to 2022, but remains below the pre-Ebola average growth rate (5.0 percent from 2011 to 2013).
- **Industry:** In 2022, industrial output grew by 10.4 percent, largely driven by mining and, specifically, increased gold production. Whereas iron ore production remained stable, gold output surged by 49.1 percent, year on year. The increased gold production reflects push-and-pull effects, namely increased production capacity coupled with high external demand. Within manufacturing, the production of cement and beverages declined by 11.4 percent and 5.1 percent, respectively, year on year due to shortage of the electricity supply during the dry season, among other factors. Cumulatively, industry grew at an average of 12.0 percent in the last two years, well above the near-zero growth recorded in 2020, but still below its pre-Ebola average growth rate (17.2 percent from 2011 to 2013).

---

1 https://www.fao.org/giews/countrybrief/country/LBR/pdf/LBR.pdf.

Figure 1: Trend in Key Output (Volume) and Real GDP



Source: Liberia authorities, International Monetary Fund (IMF) and World Bank (WB) staff estimates.

Growth in 2022 was driven by mining, specifically gold production, and a relatively good agricultural harvest, especially rice and cassava production.

- **Services:** Following a contraction of 8.6 percent in 2020 due to the pandemic, services growth rebounded to 3.0 percent in 2021, slowing marginally to 2.8 percent in 2022, reflecting the effect of higher domestic fuel prices and higher import costs on trade and transport services and the hospitality industry. However, government and financial services grew beyond 2021 levels, reflecting the expansion in fiscal expenditure.

In the last two years, poverty rates are projected to have declined thanks to robust GDP growth and moderate inflation. Following two consecutive years (2019 and 2020) of contraction and elevated inflation, the rebound in growth and decline of inflation in 2021 and 2022 boosted private consumption per capita and helped reduce poverty rates. Real private consumption per capita increased by 2.6 percent in 2021 and 1.2 percent in 2022. As a result, Liberia's international poverty rate (US$2.15 person/day purchasing power parity [PPP]) decreased by 1.0 percentage points to 36.0 percent in 2021, and further by 0.5 percentage points to 35.5 percent in 2022.

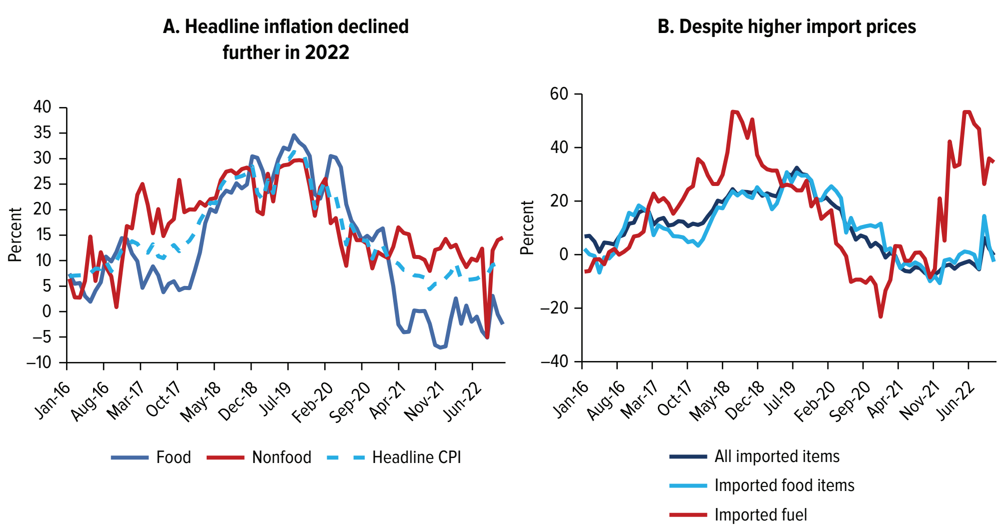
Monetary, Exchange Rate, and Financial Sector Developments

Despite high global food and fuel prices, Liberia's inflation remained in single digits in 2022. Following a significant decline from 17.4 percent in 2020 to 7.9 percent in 2021, inflation declined further to 7.6 percent in 2022. From 2021 to 2022, food prices fell by 1.6 percent year on year, thanks to relatively good agriculture harvests, whereas nonfood inflation reached 10.6 percent, primarily driven by energy prices. On average, domestic food prices declined by 3.7 percent in 2022, while imported food prices increased slightly by 0.6 percent, even though the government subsidized the price of imported rice in the first 11 months of the year (before adjusting it in early December after a supply shortage in October and November). Imported fuel prices increased sharply by 36.0 percent in 2022, compared to a decline of 3.8 percent in 2021.

Inflation remained in single digits in 2022, despite a relaxation in monetary and fiscal policies. The Central Bank of Liberia (CBL) kept reserve requirements unchanged. The policy rate was held at 20 percent from January to July, before being cut to 15 percent in August as inflation remained in single digits. The exchange rate was broadly stable, with the Liberian dollar trading at around L$153 per U.S. dollar, reflecting an 8.0 percent appreciation against the U.S. dollar between 2021 and 2022, and partly limiting the domestic price pressure from global fuel and food prices. The appreciation of the Liberian dollar was driven by high export receipts, stable net remittances, and a tight monetary policy. The government loosened its fiscal policy through the provision of subsidies, transfers, and social benefits, which partly

Despite higher import prices, Liberia's inflation remained in single digits in 2022.

Figure 2: Price Developments, 2016–22



Source: LISGIS and WB staff calculation.

helped offset the impact of high international prices for key imports, including rice. In December 2022, the price of a 25-kilogram (kg) bag of imported rice (the main staple food) was adjusted to US$17.0, up from US$13.5, to help reduce the subsidies and promote fiscal sustainability, but the full effect of the price adjustment[2] will impact inflation in 2023. As of May 2023, headline inflation had increased to 12.2 percent, up from 9.2 percent in December 2022.

Broad money (M2) expanded on the back of fiscal policy and credit growth. M2 growth accelerated to 15.3 percent in 2022, from 9.5 percent in 2021, driven by both net claims on the government, which increased by 17.7 percent as the government loosened fiscal policy and credit to the private sector, which expanded by 13.8 percent in 2022, compared to 4.4 percent in 2021. The main drivers of credit growth in 2022 were trade finance, personal loans, and loans to the manufacturing and services sectors. Still, access to credit remains extremely low, with credit to the private sector as a share of GDP stagnating at around 15.0 percent.

Even as access to credit remains low, Liberia has made significant progress toward advancing financial inclusion. Access to transactional accounts has improved significantly, mainly driven by the adoption of mobile money accounts, which have become the dominant form of account ownership in the country. In addition to measures taken in response to COVID-19, including increased daily mobile money limits and the waiving of fees for digital payments and merchant transactions, the CBL issued new guidelines for digital credit in 2022 that helped catalyze the adoption of digital financial services. As a result, the number of mobile money agents increased eightfold since 2017 to almost 29,500 by June 2022. The total number of users of mobile money also rose sharply, from about 1.9 million in 2017 to over 8.0 million in June 2022, with over 1.8 million active users. According to the latest Findex data, more than one-half (52.6 percent) of the population over 15 years old had accounts at a formal financial institution or a mobile money provider in 2021, compared to about one-third (35.7 percent) in 2017. Although this level of account ownership remains slightly below the regional Sub-Saharan Africa average (55 percent), it is well above the average for low-income countries (39 percent). However, there is a substantial (15 percentage points) gap in account ownership between men and women—with only 44 percent of women having an account compared to 59 percent of men. Access to basic formal financial services is also significantly lower in rural areas as compared to urban locations, with account ownership rates of 46 percent among rural dwellers, as compared to 64 percent among their urban counterparts. The main reasons reported for people's lack of accounts are insufficient funds (83 percent), lack of necessary documentation (56 percent), high costs of financial services (54 percent), and long distances to financial service providers (53 percent).

The health of the banking system is relatively sound. Most primary balance sheet indicators in the banking industry expanded in 2022, including total capital, liquidity, assets, deposits, profitability, and loans and advances. Commercial banks were generally in compliance with prudential capital and liquidity requirements. As of December 2022, the capital adequacy and liquidity ratios stood at 22.8 percent and 43.5 percent, respectively—well above the minimum regulatory requirements (10.0 and 15.0 percent, respectively). Meanwhile, returns on equity and assets decelerated to

2 This is a one-off, entirely appropriate price adjustment whose role in driving inflation can be managed by the CBL.

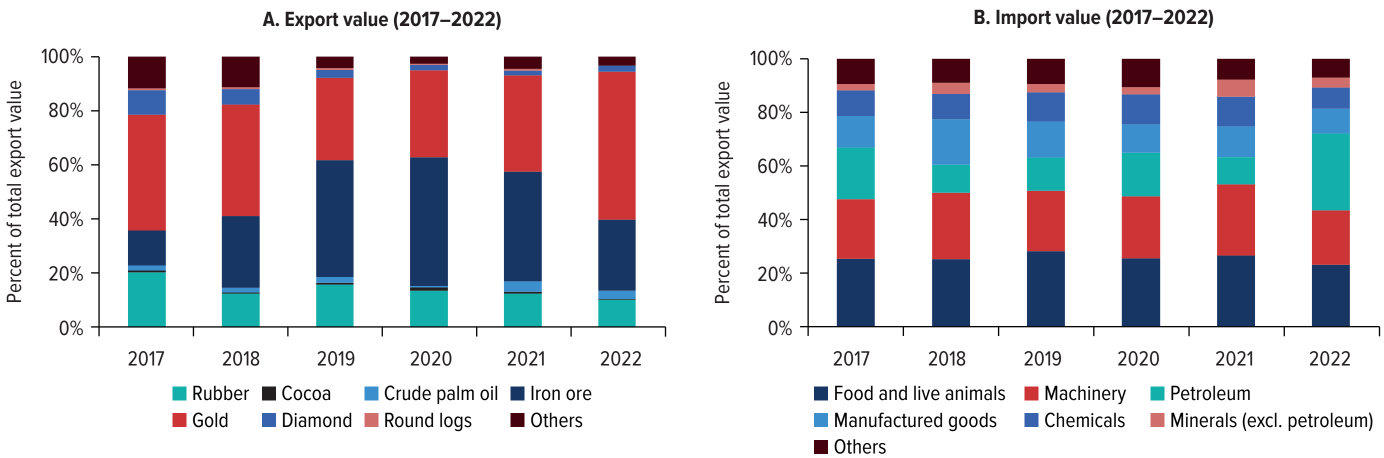
14.0 percent and 2.1 percent, respectively, in December 2022, down from 18.3 percent and 3.3 percent, respectively, in December 2021. Nonperforming loans (NPL) as a share of total loans are still above the 10 percent tolerable level set by the CBL, but the ratio declined to 16.4 percent in December 2022, from 22.4 percent in December 2021. The main drivers of NPLs in 2022 were personal loans, contributing 5.7 percentage points (p.p.); trade finance (3.1 p.p.); loans to the oil and gas sector (2.2 p.p.); and loans to the services sector (2.0 p.p.). The significant decline in NPLs in 2022 reflects the CBL's effort to improve asset quality. The CBL encouraged commercial banks to strengthen their internal credit strategy and improve asset quality. The CBL's efforts to reduce operational costs helped limit the drain on foreign exchange, whereas the general Special Drawing Rights (SDR) allocation to Liberia restored international reserves to adequate levels.

The External Position: Liberia's Current Account Balance Improved Despite Elevated External Price Pressures

Liberia's current account balance improved in 2022, thanks to the continued increase in mining export earnings. The value of Liberia's export increased by 17.0 percent, or 0.8 percentage points of GDP, driven by a significant increase in gold exports. Gold exports surged by 74.0 percent during the year and accounted for more than one-half of the total value of exports. Other than gold, iron ore accounted for one-fourth of the country's export value but recorded a 26.9 percent dip in export earnings, largely driven by the decline in the international prices of the commodity (Figure 8c). Exports of other products, including rubber, crude palm oil, and cocoa, also declined.

Merchandise imports increased, driven by higher international prices of fuel. International prices for crude oil surged by 40 percent over 2022 relative to 2021, while rice prices fell by 4.7 percent. Together, rice and petroleum accounted for more than 40 percent of imports (Figure 3B). Imports increased by 14.2 percent, or 0.3 percentage points of GDP in 2022, mostly on account of imports of petroleum products, which accounted for close to one-third of the value of imports in 2022 (Figure 3B). Imports of food, especially rice, capital goods, and manufactured

Figure 3: The Composition of Exports and Imports (2017–22)



Source: Liberia authorities, IMF and WB staff estimates.

Gold accounted for more than a half of Liberia's exports receipts in 2022. The increase in merchandise imports were mainly driven by rice and petroleum.

goods, all declined in 2022 despite the increase in international prices of food, as the reduction in volume more than offset the increase in prices.[3] As a result, the trade balance improved from a deficit of 13.1 percent of GDP in 2021 to a deficit of 9.8 percent in 2022. Trade in services stayed in deficit but also showed improvement.

In contrast, the other components of the current accounts did not improve. The deficit in the primary income account widened marginally to 6.1 percent of GDP (from 6.0 in 2021). The reduction in official transfers (including budget support grants) and relatively stable net remittances drove a decline in the current transfers surplus to 10.1 percent of GDP in 2022, from 12.9 percent in 2021. On balance, the country's current account deficit narrowed to 15.7 percent of GDP in 2022 from 17.8 percent in 2021, as the reduction in the trade deficit remained dominant.

Despite robust foreign direct investment (7.4 percent of GDP in 2022), financing of the current account deficit was challenging. The surplus of capital accounts declined to 4.6 percent of GDP from 5.9 percent in 2021 in the wake of the decline in disbursements in project grants, while the net disbursement of loans decreased from an elevated level of 13.9 percent of GDP in 2021 (occasioned by the International Monetary Fund [IMF] SDR allocations) to 2.4 percent of GDP in 2022. As a result, the overall balance of payment showed a deficit of 1.1 percent of GDP, covered by drawing from the international reserves, which declined to US$644 million (3.5 months of import cover) in 2022, from $700 million (4.0 months of import cover) in 2021.

3 The reduction in rice imports was fueled by a five-month suspension of imports by the main rice importers.

Fiscal Policy: A Larger Deficit Driven Mostly by Grant Shortfalls

Liberia's fiscal position worsened in 2022. The overall fiscal deficit widened to 6.9 percent of GDP in 2022, up from 2.4 percent in 2021, with the increase entirely driven by the primary deficit that rose from 1.5 percent of GDP in 2021 to 6.0 percent in 2022. External grants declined by 3.1 percentage points of GDP, partly reflecting the change in International Development Association (IDA) lending policies for countries at moderate risk of debt distress under IDA20. Beyond the decline in grants, domestic revenue fell by 1.2 percentage points, reflecting the poor performance of the goods and services tax (GST) and taxes on international trade. On the expenditure side, the provision of subsidies, grants, and social benefits was increased by 1.4 percentage points of GDP to offset the effect of the higher food and fuel prices on the economy and households. But this was compensated by the reduction in the wage bill (by 1.3 percentage points of GDP) and a slight reduction in capital expenditure (by 0.2 percentage points of GDP). Additionally, government consumption spending increased by 0.2 percentage points of GDP to 10.4 percent. The fiscal deficit was mainly financed by concession resources, including the World Bank Group budget support, as well as borrowing from commercial banks.

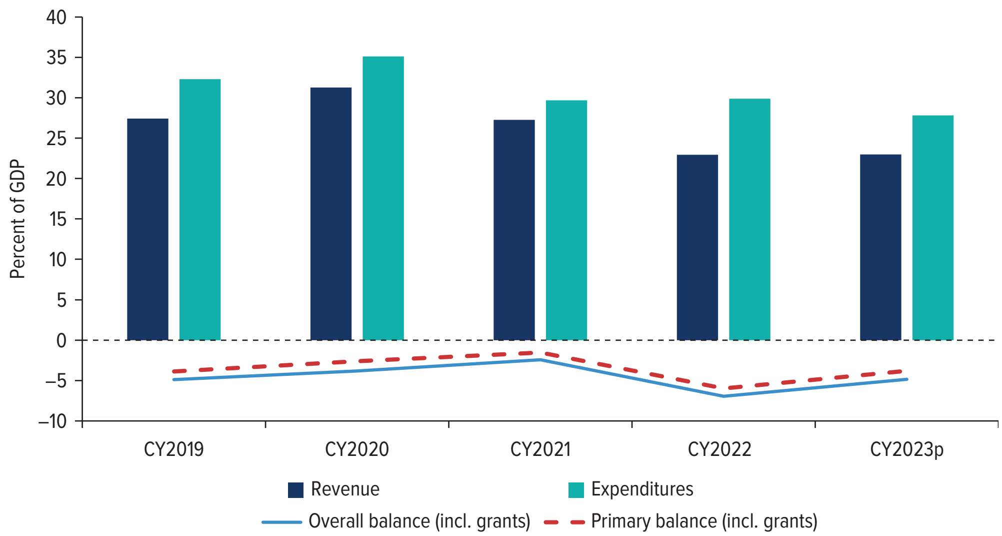
Domestic revenue, which had been rising steadily since 2019, declined in 2022. In 2022, domestic revenue dipped to 15.2 percent of GDP, from 16.4 percent in 2021. On the one hand, the decline in domestic revenue was driven by tax revenue, mainly international trade taxes and taxes on goods and services. As a result, Liberia's tax-to-GDP ratio fell to 12.3 percent of GDP, down from 13.7 percent in 2021. On the other hand, nontax revenue increased slightly, by 0.2 percentage points, to 2.9 percent of GDP in 2022, albeit 1.0 percentage points lower than expected. Total grants also fell significantly, to 7.8 percent of GDP, from 10.9 percent in 2021, partly a reflection of the change in the IDA lending policy for countries at moderate risk of debt distress under IDA20.[4] Consequently, total revenue and grants declined from 27.3 percent of GDP in 2021 to 23.0 percent in 2022.

Despite steps to contain the public sector wage bill, total expenditure and net lending increased slightly from 29.7 percent of GDP in 2021 to 29.9 percent in 2022. The increase in government spending in 2022 came from current expenditures driven by consumption spending, subsidies, transfers, and social benefits.
The expenditures on goods and services increased from 10.2 percent of GDP in 2021 to 10.4 percent, while spending on subsidies, transfers, and social benefits increased by 1.4 percentage points of GDP to 3.7 percent of GDP, reflecting the government's

4 Liberia, at moderate risk of debt distress, is now entitled to a 100 percent loan under IDA20, compared to a 50 percent grant and 50 percent loan previously.

Liberia's fiscal deficit widened in 2022 mainly due to declines in revenue and grants.

Figure 4: Fiscal Indicators, 2019–23



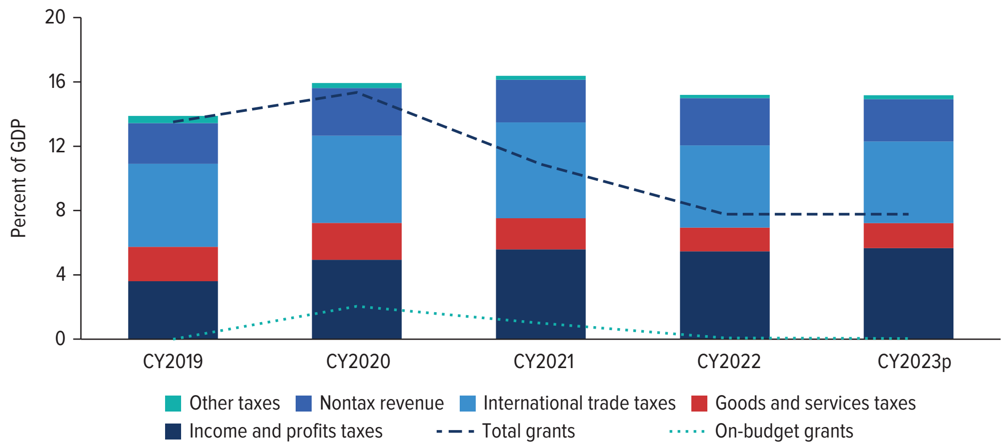
Source: Liberian authorities, IMF/World Bank staff estimates.
Note: p = projection based on the 2023 National Budget.

efforts to limit the effects of higher food and fuel prices resulting from the war on Ukraine. The subsidy on rice (the main staple) increased to 0.4 percent of GDP, as the government maintained the price of a 25 kg bag of imported rice at US$13.50 for most of the year. Later in December, the government adjusted the price to US$17 to reduce the subsidy and use existing social protection programs to target the poorest, including providing cash transfers. From the onset, the government adjusted domestic fuel prices very rapidly (immediate and full pass-through) to avoid fuel subsidies. Current spending, as a proportion of GDP, increased by 0.3 percentage points of GDP to 22.2 percent in 2022, more than offsetting a decline in capital spending, which fell by 0.2 percentage points to 7.6 percent of GDP in 2022.

This said, there were slippages on several specific budget lines in 2022. The House of Representatives and the Senate held more consultations than initially planned, and security spending was increased in advance of the 2023 elections. As a result, spending on the National Legislature (already very high relative to comparable countries) and the National Security Agency substantially surpassed the budget. A higher budget incidence for the rice subsidy also contributed to overruns in the Ministry of Commerce and Industry's budget. Both the National Elections Commission and the Liberia Electricity Corporation (LEC) did not fully execute their budgets. The LEC could not meet its budget due to delays in the availability of electricity purchased from Côte d'Ivoire.

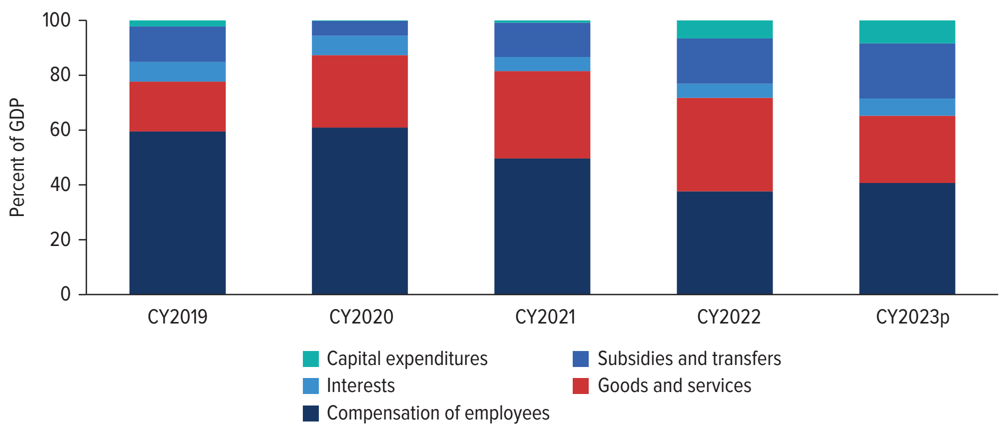
Government spending increased in 2022 driven by consumption, subsidies, transfers, and social benefits. Liberia's public debt burden also increased.

Figure 5: Sources of Government Revenue (Percent of GDP)



Source: Government of Liberia (GoL), IMF/World Bank staff estimates.
Note: p = projection based on the 2023 National Budget.

Figure 6: Composition of Expenditures (Percent)



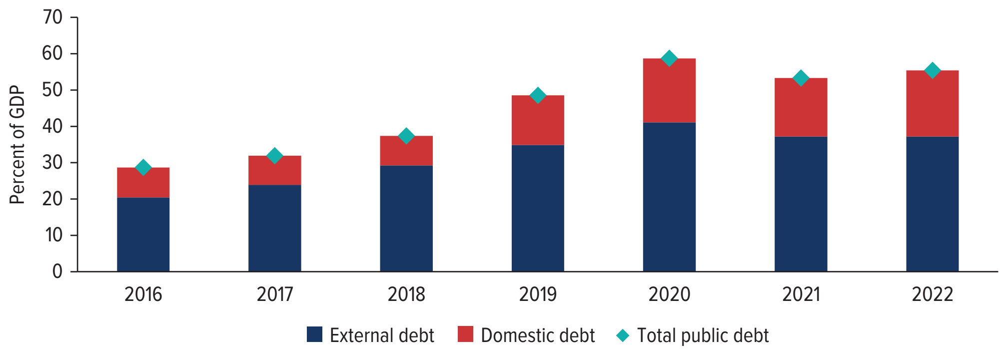
Source: GoL, IMF/World Bank staff estimates.
Note: On-budget Central Government Expenditures.

Liberia's public debt burden increased in 2022 but remains sustainable. The total public debt increased to 55.4 percent of GDP in 2022, from 53.3 percent of GDP in 2021; the impact of the higher deficit was partly offset by denominator growth. In nominal terms, the public debt stock increased by 16.4 percent, reflecting the disbursement of external loans and issuances of domestic instruments. External debt accounted for 56.2 percent of the total public debt stock, including a US$1,022.6 million debt to multilateral lenders and a US$111.7 million debt to bilateral lenders. Domestic debt, which accounts for the remaining 43.8 percent, comprises mostly government borrowing from the CBL in the amount of US$605.5 million, and US$224.5 million from commercial banks, including sovereign bonds. A recent joint World Bank–IMF Debt Sustainability Analysis (DSA)[5] assessed Liberia to

5 The recent DSA was conducted in August 2022.

be at moderate risk of external debt distress and at high risk of overall public debt distress. Under the baseline scenario of the external DSA (August 2022), the present values (PVs) of debt-to-GDP and debt-to-export ratios both remain below their respective thresholds in the medium-to-long term. However, under several standard stress tests, the threshold of the PV of the debt-to-GDP ratio is projected to be breached, calling for continued prudent external debt management. Public debt is assessed to be sustainable, as most of the domestic debt is owed to the CBL at favorable terms, and the PV of public debt-to-GDP is projected to be on a downward trend beyond 2023.

Figure 7: Liberia's Public Debt Stock, 2016–22 (Percent of GDP)



Source: GoL, IMF/World Bank staff estimates.

Economic Outlook

GLOBAL AND REGIONAL ECONOMIC CONTEXT

Global growth is expected to slow in 2023, followed by a tepid recovery in 2024. The global economy is projected to grow at 2.1 percent in 2023, down from 3.1 percent in 2022, according to the World Bank's *Global Economic Prospects* (GEP) report (World Bank 2023a). The deceleration reflects the effects of the overlapping negative shocks of the pandemic, continued policy tightening to rein in high inflation, and ongoing disruptions from Russia's invasion of Ukraine. Growth in advanced economies is expected to decelerate sharply to 0.7 percent in 2023 from 2.6 percent in 2022. With pronounced deceleration in advanced economies, the resulting spillovers are exacerbating other headwinds in emerging markets and developing economies (EMDEs). Excluding China with a sizable pickup expected due to economic reopening, tight global financial conditions and subdued external demand are expected to weigh on growth across EMDEs. In Sub-Saharan Africa (SSA), growth is projected to slow in 2023, followed by a moderate improvement in 2024. The region is projected to grow at 3.2 percent in 2023—down 0.5 percentage points from 2022. External headwinds arising from weakening growth in advanced economies, persistent inflation, and increased insecurity weigh on growth in the region. Despite China's reopening, which presents an opportunity for recovery in external demand, particularly among commodity exporters, recoveries have remained subdued. Constrained access to external financing, tight fiscal space, and high borrowing costs are expected to markedly limit the capacity of many governments to spur faster growth.

Risks to the global and regional outlook are tilted to the downside. Further negative shocks—such as higher inflation, even tighter policy, escalation of financial stress, deeper weakness in major economies, or rising geopolitical tensions—could push the global economy into a recession. In SSA, more pronounced weaknesses in major economies, further increases in global interest rates, higher and persistent inflation, fragility, and more frequent and intense adverse weather events could further slow growth, exacerbate poverty, and lead to debt distress in some countries. In the near term, urgent global efforts are needed to mitigate the risks of global recession and debt distress in EMDEs.

Global growth is projected to slow in in 2023, followed by a tepid recovery in 2024.

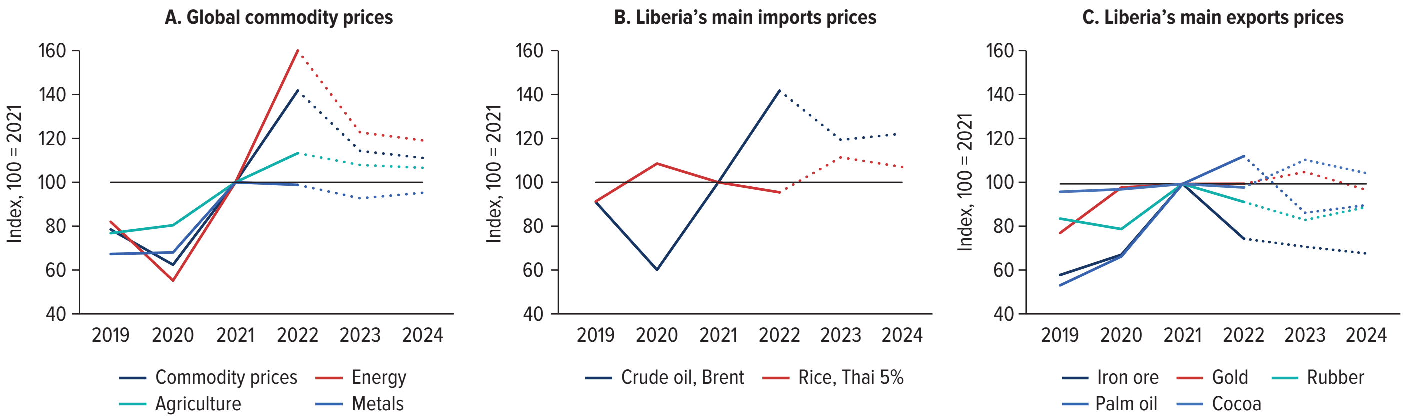
Table 1: Global and Regional Growth, 2020–24

	2020	2021	2022e	2023f	2024f
Real GDP growth (%)					
World	−3.1	6.0	3.1	2.1	2.4
AE	−4.3	5.4	2.6	0.7	1.2
EMDEs	−1.5	6.9	3.7	4.0	3.9
SSA	−2.0	4.4	3.7	3.2	3.9

Source: World Bank, *Global Economic Prospects, June 2023* (2023a).

In the wake of a global slowdown and concerns about a global recession, commodity prices are expected to ease in the next two years. According to the World Bank's *Commodity Markets Outlook* (WBG 2023), energy prices are expected to fall by 26 percent in 2023 (much of that decline has already taken place) and remain broadly unchanged (up 0.1 percent) in 2024, while agricultural prices are projected to decline by 7.0 percent in 2023 and ease further in 2024. Metals and minerals prices are also expected to fall by 8.0 percent in 2023, compared to the prices in 2022, and decline further in 2024. A sharper slowdown in global growth presents a key downside risk, especially for crude oil and metal prices. Figure 8 shows the forecast for global commodity prices and those of Liberia's main exports and imports.

Figure 8: Commodity Price Forecast



Source: World Bank Group, *Commodity Markets Outlook*, April 2023.
Note: Commodity prices line refers to the World Bank commodity price index, excluding precious metals. Dashed lines indicate forecasts.

LIBERIA'S OUTLOOK

Liberia's medium-term economic outlook is positive, but uncertainties remain. Economic growth is expected to taper off to 4.3 percent in 2023 before gradually accelerating to an average of 5.6 percent over 2024–25 as the country benefits from tailwinds from mining and structural reforms in key enabling sectors—energy, transportation, trade, and financial services. As reforms in energy, transportation, trade, and financial services take hold, growth in the nonmining sectors—agriculture, manufacturing, and services—is expected to take off in 2024–25.[6] In 2024–25, growth in agriculture is expected to reach an average of 5.1 percent, while manufacturing and services are projected to grow at an average of 6.5 percent and 5.5 percent, respectively. The average mining growth is expected to edge up to 6.8 percent.

Inflation is expected to stay in single digits as global commodity prices recede and the central bank maintains a prudent monetary policy stance. Headline inflation is expected to increase to 7.8 percent in 2023 and moderate gradually to 5.5 percent by 2025, in line with the global projection of energy and food prices. As the full effect of the price adjustment for rice takes hold in 2023, monetary policy will continue to aim at achieving low and stable inflation. Under the International Monetary Fund (IMF)-supported program, the authorities remain committed to maintaining a relatively tight monetary stance, refraining from monetizing fiscal deficits and pursuing the implementation of the Central Bank of Liberia's (CBL's) new interest rate–based monetary policy framework.[7] Further, there will be limited interventions in the foreign-exchange market, except for those solely aimed at

6 World Bank. 2023b. *Macro Poverty Outlook for Liberia: April 2023—Datasheet (English).* Washington, DC: World Bank Group. http://documents.worldbank.org/curated/en/099940004122320814/IDU0bd63989602a6304e0408ca0096b672bfd559.

7 The Central Bank of Liberia (CBL) kept its main policy rate at 15 percent in February 2023, after lowering it from 20 percent in August 2022.

smoothing short-term fluctuations and shoring up reserves. In line with growth and the decline in inflation, the poverty rate is expected to stagnate in 2023 and decline moderately in the medium term.

The government's fiscal deficit is projected to narrow in the medium term as the authorities strengthen expenditure controls. The overall fiscal deficit is expected to narrow to 4.9 percent of GDP in 2023 and further to under 4.0 percent by 2025. The primary deficit is expected to average 3.4 percent of GDP over 2024-25. Domestic revenue is expected to decline to 15.2 percent of GDP in 2023, reflecting lower intake of nontax revenue, before rising to 16.2 percent of GDP in 2024–25 as the country replaces the current goods and services tax (GST) with a value added tax (VAT) in 2024 to harmonize its system with the Economic Community of West African States (ECOWAS). The tax-to-GDP ratio is expected to increase to 12.4 percent in 2023 and reach 13.0 percent in 2024. The government will continue to review tax waivers in line with the revised revenue code and improve the collection of tax arrears. On the expenditure side, despite higher borrowing costs, current expenditures are expected to decline to 20.2 percent of GDP in 2023 from 22.2 percent of GDP in 2022, as the wage bill continues to remain flat in nominal terms, rice and electricity subsidies are reduced, and controls on the procurement and payment processing of goods and services continue to improve. The 2023 budget envisages a fiscal deficit of roughly 5 percent on the back of continued implementation of revenue measures and efforts to reduce spending. In the 2023 approved budget, allocations for entities such as the National Legislature and the National Security Agency have been significantly reduced by 33 percent and 17 percent, respectively, following large slippages in 2022. This is expected to make room for an increase in capital expenditure in the medium term.

Foreign direct investments (FDIs) in mining, agriculture, and infrastructure are expected to improve, and capital inflows are projected to exceed 10 percent of GDP between 2023 and 2026. Gross official reserves are expected to stabilize at around 3.5 months of import cover.

The main risks to the outlook, in addition to the fluctuations in commodity prices, are the uncertainties associated with the impending general and presidential elections. Although fluctuations in prices of important imports (food and fuel) and exports (rubber, iron ore, and gold) could hinder the outlook, businesses could put off crucial investment decisions in anticipation of the 2023 elections, and this could further slow the pace of recovery in economic activity. Additionally, safeguarding public finances ahead of the 2023 elections could prove challenging in the face of domestic spending pressures.

Table 2: Selected Macroeconomic Indicators, 2019–24

	2019	2020	2021	2022	2023	2024
(Annual percentage change)						
Real sector						
Real GDP growth (annual percentage change)	−2.5	−3.0	5.0	4.8	4.3	5.5
Mining	13.2	2.0	17.6	14.0	4.6	6.5
Nonmining	−3.2	−3.2	4.3	3.8	4.2	5.3
Inflation						
Consumer prices (annual average)	27.0	17.4	7.9	7.6	7.8	5.9
Consumer prices (end of period)	20.3	13.1	5.5	9.2	6.3	6.0
(Percent of GDP)						
Central government operations						
Total revenue and grants	27.4	31.3	27.3	22.9	23.0	23.1
Domestic revenue	13.9	16.0	16.4	15.1	15.2	16.0
Tax revenue	11.3	13.0	13.8	12.2	12.6	13.0
Nontax revenue	2.5	3.0	2.6	2.9	2.6	3.0
Grants	13.5	15.3	10.9	7.8	7.8	7.1
Total expenditure	32.4	35.1	29.7	29.9	27.8	27.2
Current expenditure	21.6	24.5	21.9	22.3	19.2	18.9
Compensation of employees	8.8	10.9	8.5	7.2	6.8	6.8
Goods and services	9.6	11.2	10.2	10.4	7.6	7.6
Interest payments	1.1	1.3	0.9	1.0	1.0	1.0
Subsidies and grants	1.9	1.0	2.1	3.2	3.4	3.1
Social benefits	0.1	0.1	0.2	0.5	0.4	0.4
Capital expenditures	10.8	10.6	7.8	7.6	8.6	8.3
Overall balance	−4.8	−3.8	−2.4	−6.9	−4.9	−3.9
Primary balance	−3.8	−2.6	−1.5	−6.0	−3.8	−2.9
Memo:						
Total public debt	48.5	58.7	53.3	55.4	57.1	56.1
External debt	34.9	41.1	37.2	37.2	38.1	38.1
Nominal GDP	3080	3037	3509	3974	4375	4720

Source: Liberian authorities, IMF and World Bank staff estimates and projections.

CHAPTER 2

GETTING RICE RIGHT FOR PRODUCTIVITY AND POVERTY ALLEVIATION

Introduction

Even as it has been trying to recover from a decade of weak economic and social performance, Liberia's overall productivity and economic efficiency remain low, especially in vital sectors of the economy, including agriculture. Food security remains a major challenge for the population. Despite the rebound in growth and decline in poverty rates in 2021, food insecurity rose by 0.9 percentage points, with more than four-fifths of the population facing moderate or severe food insecurity. In 2022, the Global Hunger Index (GHI) classified Liberia as a country in a "serious state of hunger"(von Grebmer, Bernstein, Resnick, et al. 2022). The strong preference for rice among Liberians makes it integral to the country's food security, poverty alleviation, and efforts to address vulnerabilities. Rice is Liberia's staple, and as such the demand, supply, and price dynamics of the commodity have a major impact on household diets and budgets. Consequently, in the last two decades, the government has focused its efforts on enhancing agricultural productivity, with an emphasis on achieving self-sufficiency in rice. Yet these efforts have yielded very little results due to the many challenges that confront the rice subsector.

This chapter sheds light on (i) the rice economy—supply, demand, and price dynamics and implications for poverty and vulnerability; (ii) challenges of the agriculture sector and related impacts on the rice subsector and the country's development outcomes; and (iii) ways to revitalize the rice subsector to help reduce poverty and vulnerability. It provides insights into the current state of the agriculture sector, focusing on the rice subsector; provides knowledge on how the supply, demand, and price dynamics of rice are shaping food insecurity and poverty; and discusses market and policy failures in the sector. Building on the findings from the analysis, it lays out broad directions for reforms and priority actions.

The Rice Economy: Demand, Supply, and Price Dynamics and Implications for Poverty and Vulnerability

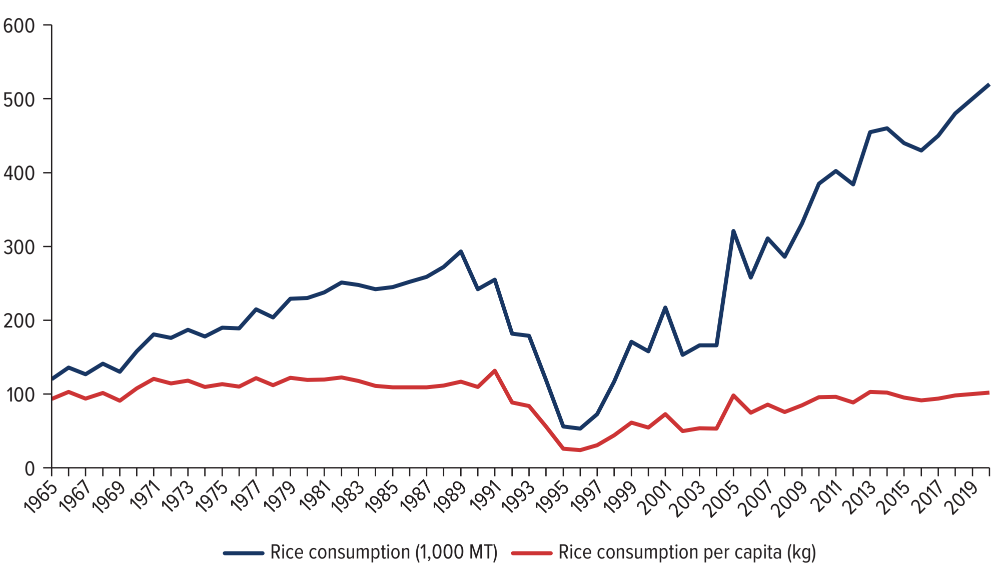
THE DEMAND FOR RICE

High population growth, households' preferences for rice, and changes in income are the main drivers of the demand for rice in Liberia.

The demand for rice is very high in Liberia. Rice accounts for a significant share of the consumption basket of households. It makes up over 20 percent of total food consumption and accounts for nearly one-half of the calorie intake of adults and about 15 percent of the overall spending of an average household (LISGIS 2017b; Wailes 2015). Over the past 15 years, rice consumption has increased by 4.6 percent yearly, reaching 560,000 metric tons in 2021. Liberia is among the top 10 consumers of rice in Sub-Saharan Africa (SSA). According to Food and Agriculture Organization (FAO) data, in 2019, Liberia was the fifth-highest consumer of rice in West Africa and the seventh-highest consumer in the SSA region. The country's annual rice consumption was 116.5 kilograms per capita compared to the West African average of 84.5 kg per capita and the SSA average of 49.1 kg per capita. In West Africa, Guinea, Sierra Leone, Guinea Bissau, Côte d'Ivoire, and Liberia were the top five consumers of rice, with Guinea holding the "record" at 156.0 kg per capita yearly.

Over the past 15 years, rice consumption in Liberia has increased at an annual rate of 4.6 percent, reaching 560,000 metric tons in 2021.

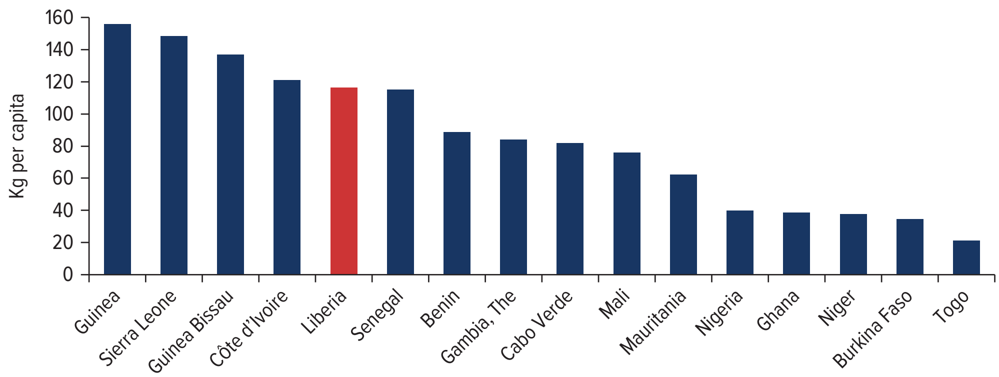
Figure 9: Liberia: Trends in Rice Consumption and Rice Consumption per Capita, 1965–2020



Source: Food and Agriculture Organization Corporate Statistical Database (FAOSTAT) and World Bank staff calculations.

In 2019, Liberia was the fifth-highest consumer of rice in West Africa.

Figure 10: Annual Rice Consumption in West Africa (2019)

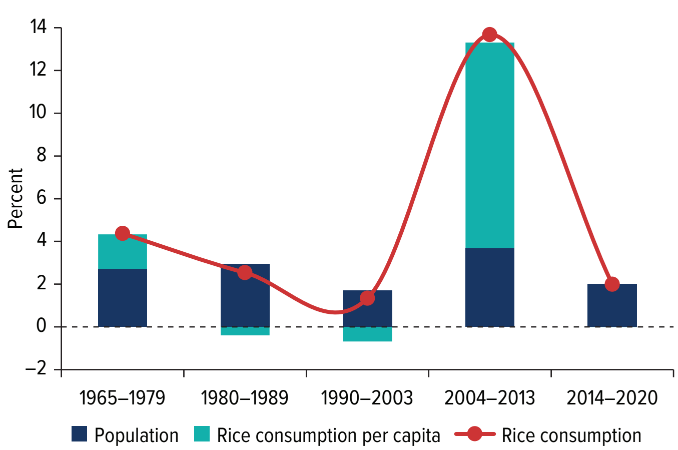


Source: Food and Agriculture Organization Corporate Statistical Database (FAOSTAT) and World Bank staff calculations.

Demographic trends, economic growth, and the strong preference for rice are the main drivers of demand. The high population growth rates across regions and increases in income have triggered consistent increases in rice demand and consumption. Over the past five decades as the economy expanded and the population grew rapidly, per capita rice consumption also increased. Similarly, periods of slow population and economic growth were marked by modest increases in rice consumption, largely driven by households' preferences. For instance, during the first decade after the civil war (2004 to 2013) when the economy and the population grew steadily at annual rates of 7.4 percent and 3.7 percent, respectively, growth in rice consumption averaged 13.7 percent yearly, while rice consumption per capita grew at a rate of 9.6 percent yearly. By contrast, from 2014 to 2020, per capita rice consumption stagnated as the economy contracted by 0.4 percent and population growth fell to 2.0 percent, reflecting households' preference for the commodity.

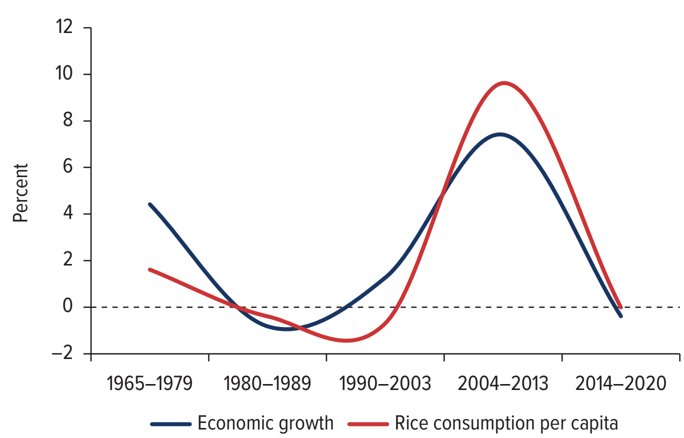
As the economy and population grow, rice consumption increases. The preference for rice in Liberia increases with income.

Figure 11: Demographic Trend Drives Rice Consumption in Liberia



Source: United States Department of Agriculture (USDA); UN population statistics, and WB staff calculation.

Figure 12: The Preference for Rice in Liberia Increases with Income



Source: USDA; UN population statistics, Penn World Table (PWT) and WB staff calculation.

THE SUPPLY OF RICE

The supply of rice in Liberia has two components: (i) imports and (ii) local production.

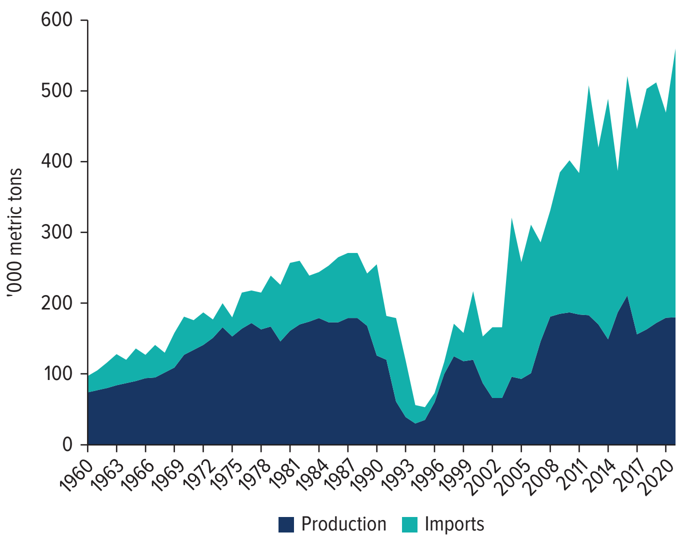
Rice imports (quantity, quality, and price)

A large share of the demand for rice in Liberia is met through imports. Rice imports now represent two-thirds of the country's total consumption, compared to only one-third in 1979—the year of the rice riots in Monrovia. In the last decade, rice imports have increased by 6.5 percent yearly to reach 380,000 metric tons in 2021, as domestic supply declined at 0.2 percent yearly. Over the same period, the self-sufficiency rate dropped from a peak of 47.9 percent in 2011 to 32.2 percent in 2021. As with the volume, the country's import bill for rice has also increased five-fold between 2011 and 2021, growing at 15.6 percent yearly. The rapid growth in imported rice supply reflects the high demand for the commodity in the wake of limited domestic supply—but also households' preferences for the improved quality of imported rice. By 2021, rice imports made up more than one-half (52 percent) of the value of imported food and about 14 percent of total imports, making it one of Liberia's major commodity imports. In Liberia, rice is imported from India (40 percent), Switzerland (20 percent), China (15 percent), the United Arab Emirates (UAE) (13 percent), and the United States of America (US) (10 percent).

A large share of the the demand for rice in Liberia is met through imports.

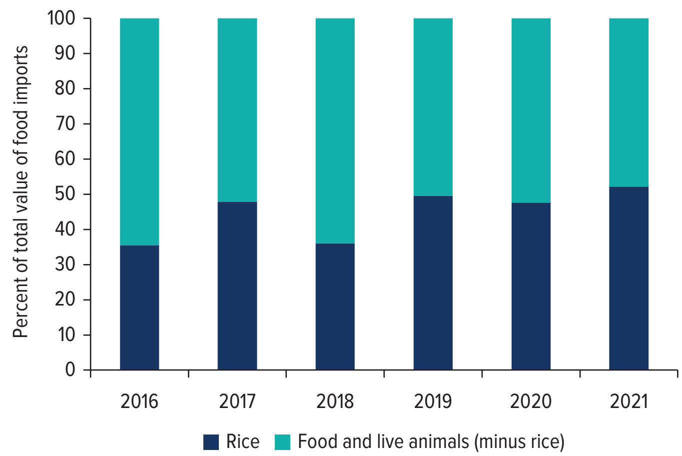
Higher shipping and distribution costs, often lifted by fuel and transport prices, are among the major drivers of imported rice prices in Liberia. Even as global rice prices are declining, imported rice prices are increasing in the domestic markets in Liberia. For instance, in 2021 global rice prices fell by 7.8 percent (Figure 15), while the average domestic retail price of rice increased by 24 percent in Liberia, with 8 out of 15 counties (Grand Cape Mount, Nimba, Grand Bassa, Grand Gedeh, Bong, Bomi, Gbarpolu, and Margibi) experiencing an increase in price above the national average. Similarly, in 2022, the average domestic retail price of imported rice rose by 20 percent in Liberia when global rice prices fell by 4.7 percent. This time, the price

Figure 13: Rice Consumption Has Increased Rapidly in the Last Decades, but Domestic Production Has Stagnated Since 2008



Source: FAO and US Department of Agriculture.

Figure 14: Rice Accounts for More Than One-Half of Overall Food Imports



Source: World Bank staff calculation based on CBL data.

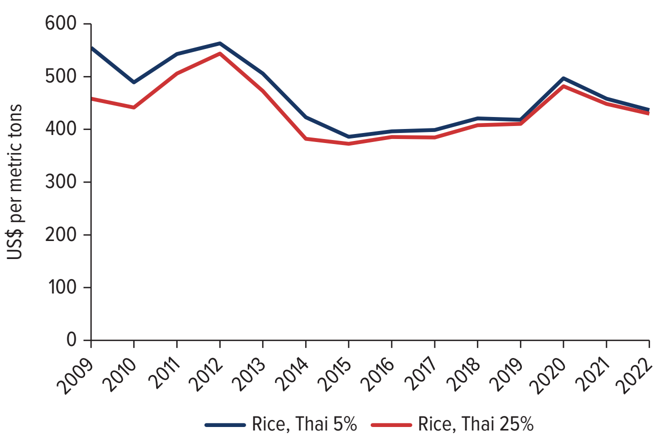
increases in 7 of the 15 counties (Gbarpolu, Bong, Grand Bassa, Bomi, Nimba, Grand Gedeh, and Cape Mount) were higher than the national average (Figure 16). Also, in 2021, data collected from the statistical offices showed that the retail equivalent price of a bag of 25 kg of imported rice was higher in Monrovia (US$19.2 per bag) than in Freetown (US$17.0 per bag) and Conakry (US$18.5 per bag). The higher retail prices of imported rice in the Liberian market often reflect higher shipping and distribution costs lifted by fuel and transport prices.

The variation in imported rice prices across counties is partly explained by other seasonal factors—particularly poor road conditions. During the rainy season or lean period, food markets on which households are highly dependent for access to imported rice supplies are often inaccessible, thereby putting upward pressures on the distribution costs of imported rice. Historically, imported rice prices have varied widely with quite large differentials across years and by geography (see price sample in Figure 16). In some instances, prices in urban areas with easier access to distribution channels for imported rice can be lower than in rural areas that are difficult to access. In 2022, the average retail prices for the equivalent of a 25 kg bag of imported rice were 10 to 45 percent higher in rural counties than the prices in Montserrado and Margibi.[8] Grand Gedeh, Grand Cape Mount, and Maryland counties recorded the highest price variations compared to Montserrado and Margibi. Even with government announcements on lawful retail prices of imported rice, there is often a gap between the price announced and the one observed in the markets.

Local production (quantity, quality, cost of production, and market price)

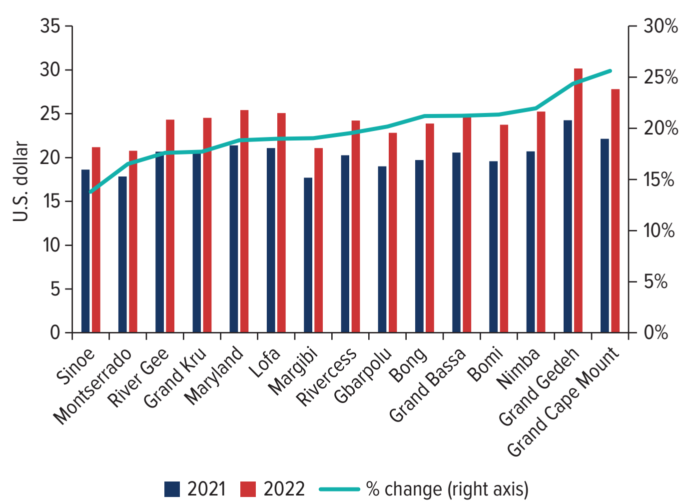
Liberia produces only one-third of its rice needs. The domestic production of rice has been insufficient to meet growing demand. About three-fourths of households produce rice, but mostly for self-consumption. The rice subsector, like agriculture more broadly, remains dominated by smallholder, subsistence-oriented farming.

Figure 15: The Trend in International Rice Prices, 2009–22



Source: World Bank, *Commodity Price Outlook* (April 2023).

Figure 16: Nominal Price Changes for a 25 kg Bag of Imported Rice across Counties in Liberia, 2021–22



Source: World Bank, Development Data Group.

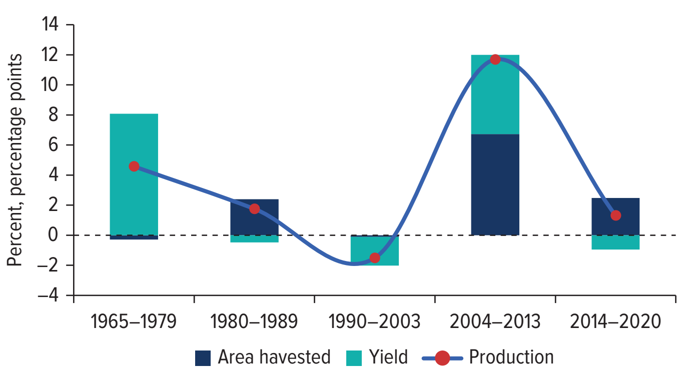
8 Except for Sinoe county (a rural area), where the price variation was less than 10 percent.

About one-third (35 percent) of Liberian households are farming households growing their own food, mainly rice and cassava. However, individual plots are small, with an average size of 1.6 hectares; less than 3 percent of farming households cultivate plots larger than 5.0 hectares. Likewise, output in tonnage is low: the average harvest is two tons per household, less than one-half a ton per person. In response to the increasing demand for rice buoyed by a growing population (Figure 9), the number of hectares cultivated for rice production has increased over time, particularly between 2017 and 2020, but with moderate and at times declining yields. Plagued by low yields as well as storage and distribution challenges, the local production of rice has stagnated at about 180,000 metric tons of milled rice equivalent since 2008.[9] Rice yields in Liberia are lower than in neighboring countries (Figure 18). In the last five years, the country's average rice yield has hovered around 1.1 metric tons per hectare, 20 percent less than the average yield in Sierra Leone, 30 percent less than in Guinea, and less than one-half of the yields in Ghana and Côte d'Ivoire. As a result, only one-third (35 percent) of the demand for rice in Liberia is met by local supply (Figure 13).

The preference for imported rice over locally produced rice, and the relatively high cost of local production, limit the competitiveness of local farmers. Rice producers and rice millers face major disincentives to increasing investment and production. The high-cost differentials between locally grown and imported rice, combined with consumer preferences for imported varieties, make it difficult for local producers to compete. According to a study conducted by the United States Agency for International Development (USAID), the costs of producing a 25 kg bag of paddy and milled rice equivalent are US$4.95 and US$7.49, respectively, for upland rice production using traditional farming methods. For lowland farming projects, the cost goes up to US$5.01 and US$7.59, respectively. The main cost driver is labor, which makes up more the 80 percent of total costs. Adding producer margins, the farmgate price of a 25 kg bag of milled rice equivalent is about US$8.84. Even though the

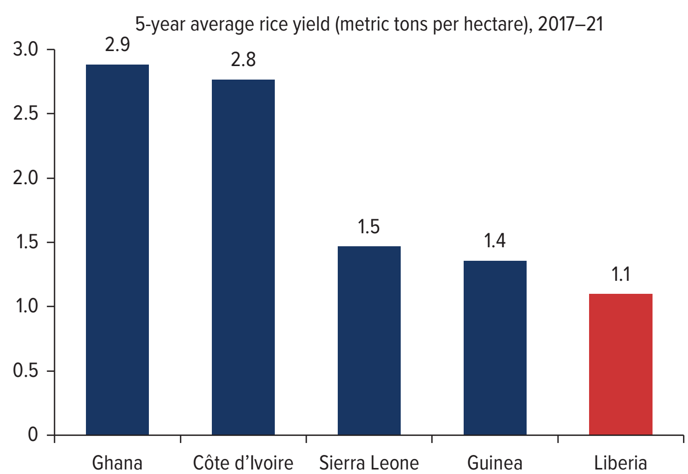
The number of hectares cultivated for rice production in Liberia has increased overtime, but with moderate and at times declining yields.

Figure 17: Rice Yields Remain Low Despite Increase in Areas Harvested



Source: FAOSTAT and World Bank staff calculation.

Figure 18: Rice Yields Are Lower Than in Neighboring Countries



9 The tariff on imported rice was first suspended in 2008 and is still suspended now.

estimated farmgate price of a 25 kg bag of milled rice is less expensive than the retail price for a 25 kg bag of imported rice, the costs of transportation, traders' and retailers' margins, and other expenses raise the price of locally produced rice, making it less competitive to compete with other varieties.

Liberia's rice value chain is fragmented, and most locally cultivated rice is used for subsistence purposes. Despite national initiatives aimed at increasing domestic production, significant constraints persist along the rice value chain in Liberia that hinder production, storage, and processing, and create disincentives for investment in the sector. These include poor access to improved seed varieties, fertilizers, and pesticides, as well as expensive energy and difficult market access. As such, most of the rice produced is consumed within the household, because farmers have limited commercial-scale production ambitions. In the face of multiple and major constraints to domestic supply, it would be impractical to expect that stronger tariff protection would have a positive effect on domestic production. Rather, addressing the constraints along the rice value chain would be critical for boosting local production.

Domestic production would need to triple to satisfy local demand, but increasing production would require significant investments in smallholder rice farmers or a shift in farming practices. Currently, upland and lowland rice production are the predominant practices in Liberia. Upland rice farming proves less labor intensive, but it is also less productive and often relies on intercropping for better yields, whereas lowland farming seems to be more productive. However, the use of traditional farming methods has resulted in low yields, even though yields from lowland rice production were 20 to 30 percent higher than those of upland production (Wailes 2015). Increasing production would require investment in improved technology, use of fertilizers, and improved seed variety, but also commercial-scale farming.

The market for rice in Liberia is large and expanding, which means there is room for locally grown rice to satisfy demand. Moreover, the rice sector has a high job creation potential, given the labor-intensive nature of rice farming and the fact that Liberia only uses 2 percent of the overall arable land that is suitable for growing rice (Kazadi and Ryan 2016). The end markets also exist. Broadly, there are three end market segments: (i) the high-end urban segment seeking high-grade international rice or imported specialty rice (such as U.S. parboiled rice and other varieties); (ii) the low- and mid-range segment, made up of urban consumers targeting lower- and medium-grade parboiled rice (more broken pieces, black flecks, mixed varieties, and so forth); and (iii) the rural segment, whose demand is often met through local production. Liberian producers cannot realistically target high-end consumers in the near-to-medium term, as the benefits of meeting the market requirements do not justify the costs. However, the low- and mid-range urban consumers present opportunities in the medium term for Liberian rice producers. It is a growing segment that demands rice that can be produced and delivered by local producers. Within the third market segment, the volumes of rice supplied by rural producers are currently insufficient to satisfy the rural demand. Meeting the needs of the rural population by upgrading basic production should be the near-term goal of the local rice industry.

Box 1: Major Actors in the Rice Value Chain in Liberia

The key actors in the rice value chain in Liberia are (i) importers/wholesalers and/or distributors, (ii) producers (farmers), (iii) input suppliers, (iv) millers, (v) traders, and (vi) the government and development partners/nongovernmental organizations (NGOs).

Importers, wholesalers, and/or distributors: With imported rice dominating the volume of rice in the chain, the primary flow of rice to the Liberian markets is from Freeport of Monrovia to the warehouses of the importers/wholesalers/distributors, from where it is sold to licensed retailers for national rice distribution. Currently, there are five major importers—also the principal wholesalers of rice, who are required to sell only to retailers with dealership licenses issued by the government. Rice dealership licenses are renewed annually. The principal wholesalers of rice, or importers, sell directly to retailers but also have their own networks for distribution to the counties outside of Monrovia. Some traders also function as wholesalers and in turn retail rice in the local informal markets, but they concentrate on domestic and not imported rice. The wholesalers of imported rice in Monrovia sell directly to retailers who will either contract transportation services directly or provide their own transportation services.

Producers/farmers: The domestic production of rice is informal, with smallholders often producing just enough for their family network and selling any excess to the local community markets. Currently, farmers are being segmented into emerging commercial, entrepreneurial, and subsistence farmers.

Input suppliers: In the recent past, vast input supplies and seed rice have been predominantly distributed for free through donor-financed projects or by development partners and NGOs. This has discouraged commercial seed demand.

Millers: There is minimal milling of rice in Liberia, with virtually all domestic production being milled either by hand or with portable mills that have been randomly distributed throughout the countryside through donor-financed projects or by development partners and NGOs. There are also state-owned mills that are being or need to be rehabilitated.

Traders: Traders serve a key role in bringing domestic rice to regional markets within Liberia. Typically, they travel to remote rice growing regions (usually an area where they have historical connections), purchase rice from local farmers, either milled or paddy, and bring the locally produced rice to the regional markets.

Government, development partners/NGOs: these actors play various roles ranging from the issuance of permits and licenses on one hand to direct intervention, such as inputs distribution, granting of waivers or tariff suspension on imported rice, and so forth on the other, thereby affecting the proper functioning of the market system of rice.

The key actors in Liberia's rice value chain are importers, producers, input suppliers, millers, traders, and the government and development partners.

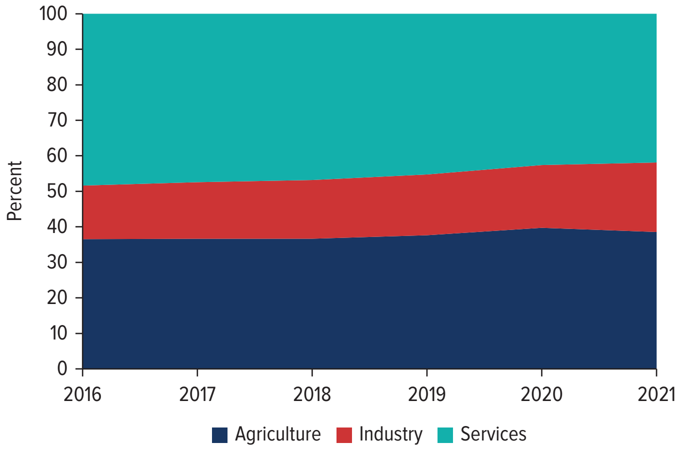
THE RICE SECTOR–CONSTRAINTS, CHALLENGES, AND OPPORTUNITIES

Limited access to technology, inefficient farming practices, low public and private investments, and a fragmented value chain, among other factors, have kept productivity low.

The factors affecting the productivity of the rice subsector, as well as demand and price dynamics, are reflective of the broader challenges in Liberia's agriculture sector. The Liberia National Rice Development Strategy (LNRDS) identified several constraints to increasing rice production. The most notable was an inadequate transportation infrastructure (Wailes 2015): value chains are undeveloped, and markets are inaccessible because of the lack of rural infrastructure, including limited and dilapidated roads (LASIP 2010). The Liberia Agriculture Sector Investment Program (LASIP 2010) asserts that farmers are unable to incorporate appropriate information into production and marketing decisions due to the poor linkage between producers and markets.

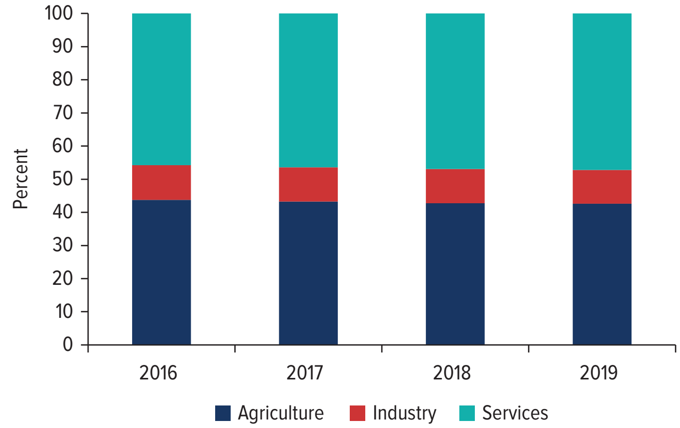
Liberia's agriculture sector has considerable potential but remains untapped. The country's climate is well suited for farming, there are water resources to support widespread irrigation, and fertile land is plentiful. About one-fifth of the land is

Figure 19: Agriculture's Output Share Has Remained Stable



Source: World Bank, World Development Indicators (WDI).

Figure 20: While the Share of Employment Has Stagnated



Source: World Bank, World Development Indicators (WDI)

The agriculture sector accounts for over a third of Liberia's GDP and provides job to more than 40 percent of the labor fore, but employment in the sector has stagnated in the last few years.

considered suitable for agriculture. The agriculture sector is already one of the backbones of the economy. It accounts for over one-third (38 percent) of GDP and provides jobs to more than 40 percent of the labor force, particularly women and young people. Rice and cassava are the primary staple food crops, whereas rubber, palm oil, and cocoa are the main agricultural exports (accounting for about one-fifth of the country's exports in value). However, the development of the agriculture sector is hindered by the still widespread use of rudimentary methods, with many farmers eschewing modern techniques and inputs. Other overarching constraints include the complex land tenure system, limited access for farmers to market their products due to bad roads, and limited access to energy for storage and processing.

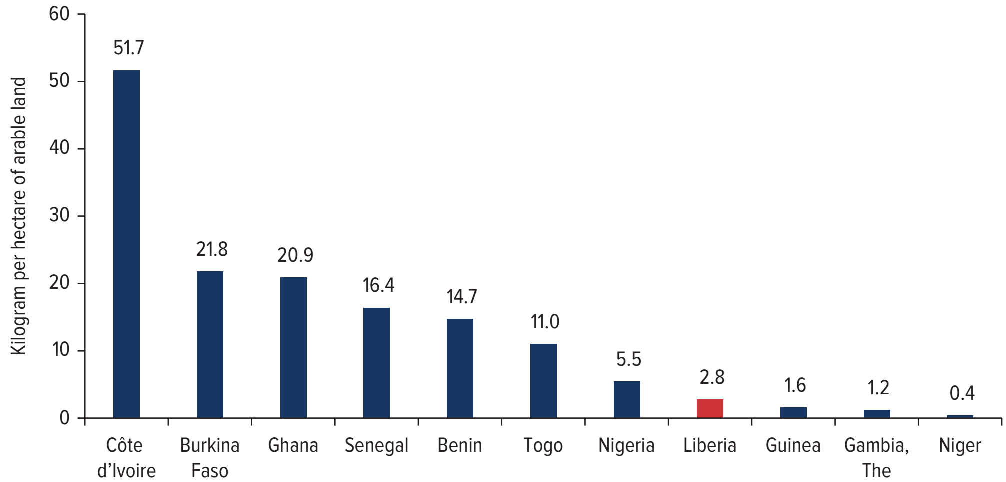
Farmers are still using rudimentary methods of farming. Liberia's agriculture sector is dominated by traditional subsistence farming systems: labor-intensive shifting cultivation, limited use of technologies, and rudimentary inputs. Only minute fractions of the planted areas are irrigated (4.0 percent), fertilized (5.5 percent), or treated (2.0 percent). The average amount of chemical fertilizer used per hectare is less than 3 kg: desirable norms vary by crop and country, but for reference, the US Environmental Protection Agency indicates that a typical phosphate fertilizer application rate is about 40 kg per hectare. The transition to modern techniques and higher quality entrants would need to come hand in hand with extension services, offered by competent public agents. But at the national level, less than 5 percent of farming households have access to these services. As a result, yields and productivity are extremely low.

Land tenure security is a challenge for many Liberian farmers. Liberia's low levels of tenure security affect agricultural productivity, particularly rice production (41 percent of rural landowners perceive their land tenure to be insecure[10]). Customary tenure is the dominant form of tenure in rural areas, and communities are permitted to maintain lineage-based communal tenure. The average land area holding is about 1.6 hectares per farm household (LISGIS 2017a), mostly under rain-fed conditions and

---

10 https://www.prindex.net/data/liberia/.

Figure 21: Fertilizer Consumption in Selected Countries in West Africa



Source: World Bank, WDI; Liberia *HIES 2016* (LISGIS 2017b).

generating small marketable surpluses. According to the *Comprehensive Food and Nutrition Survey* conducted in 2018 (Ministry of Agriculture 2018), two out of every three households lack access to farmland, and more than two-thirds of households with access to farmlands do not have title deeds. Ownership rights over land plots are uncertain. Nationally, only 5 percent of farms are privately owned; less than 3 percent of households possess deeds to their farmland (LISGIS 2017b). For most plots, ownership has a high degree of uncertainty despite the introduction of the Land Rights Act in 2018, which for the first time in Liberia's history legally recognized customary tenure, prevalent in rural areas. This customary land was previously designated as public land, contributing to exploitation by the elites, land disputes, and insecurity of tenure. The Land Rights Act calls for the demarcation and registration of customary land to increase tenure security. Although successful pilots have been implemented,[11] there is no government program for registering customary tenure systematically at scale, due to limited fiscal space at the Liberia Land Authority. This, in turn, tends to discourage investment because the one who sows may not be the one who reaps. Long-term investments in farms are more likely to occur when tenure is secure. Liberia's legal and regulatory regime signals formal respect for property rights, but contract enforcement and the resolution and enforcement of property disputes continue to pose challenges. Even though customary land disputes are dealt with by customary institutions, disputes between investors and customary landowners still exist, and resolution mechanisms remain weak.

The limited coverage and low quality of roads present a major obstacle. The cost of bringing in inputs or taking out outputs to markets depends on many factors, but it is especially sensitive to transport conditions. Liberia's road network falls short of the country's needs both in coverage and quality. According to the 2018 road network survey (World Bank 2018), Liberia had an estimated 11,423 kilometers (km) of all types of roads—primary, secondary, urban, and feeder roads. The area of Liberia is comparable to that of the U.S. state of Virginia, but the network of only state roads in

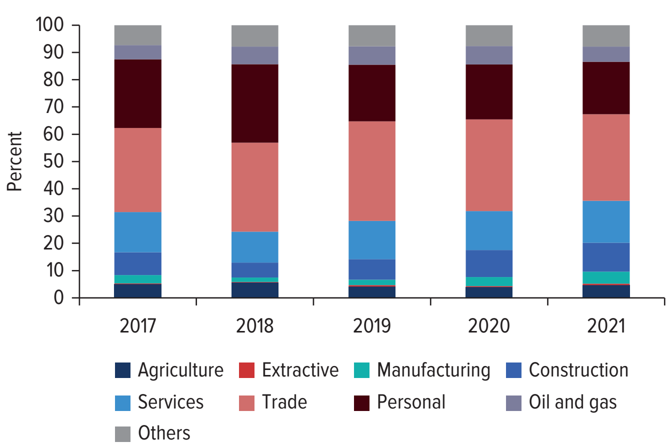
11 See, for example, Liberia Land Administration Project (P162893): https://projects.worldbank.org/en/projects-operations/project-detail/P162893.

Virginia (not federal, municipal, and so on) is 93,000 km (about 57,787.52 miles), nine times as much as the entire network of Liberia. Of these, only 565 km (about 351.07 miles) were paved. Not even all these paved roads were in good condition. Poor road conditions are pervasive across the board. For example, two-thirds of secondary and feeder roads (the segment that should reach farmers) are in poor or extremely poor condition. Many road links become heavily saturated and suffer extreme deformation under the weight of traffic during the extended rainy season (from May through October). This reflects several factors, some physical, some man-made, and, in the latter category, the lack of road maintenance. The consequences for many rural communities are severe and multifold, but they are particularly toxic along the economic dimensions of farm activities, hindering productivity. Beyond productivity, the poor coverage and conditions of roads impact distribution costs and rice prices across counties.

Access to finance for the agriculture sector, particularly for rice growers, remains limited. Access to credit is low and highly concentrated in a few types of loans. Trade finance, personal loans, loans to the services sector, and loans to the construction sector make up most of the domestic credit. Agriculture gets shorted shrift: in 2021, credit to agriculture was less than 5 percent of total credit to the economy, compared to 31 percent to trade finance, 19 percent to personal loans, 15 percent to the services sector, 11 percent to construction, 5 percent to oil and gas, 4 percent to manufacturing, and close to 10 percent to other sectors, including public corporations. Further, the share of private sector credit to the agriculture sector has declined from 5.6 percent in 2018 to 4.7 percent in 2021. Together, rubber, forestry, and fishery made up close to two-thirds (62 percent) of private sector credit to agriculture, with all other subsectors, including rice, cassava, and livestock, accounting for the remainder in 2021.

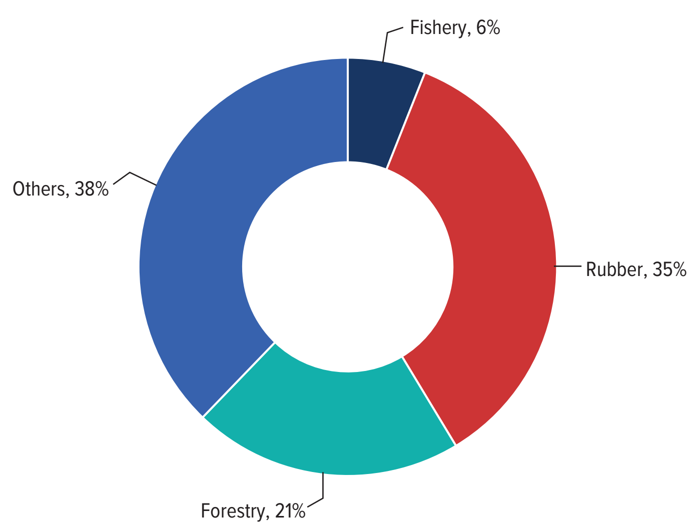
Public funding for agriculture has also been consistently inadequate for a sector of such significance to the economy and poverty. In fact, it is estimated that the budgetary allocation to the agriculture sector declined by one-sixth (15.5 percent) from 2014 to 2020. Typically, only 1 percent of the national budget is allocated to the sector, mainly for recurrent expenditures. The figure is similar for the part of

Figure 22: The Share of Credit to Agriculture Has Been Declining



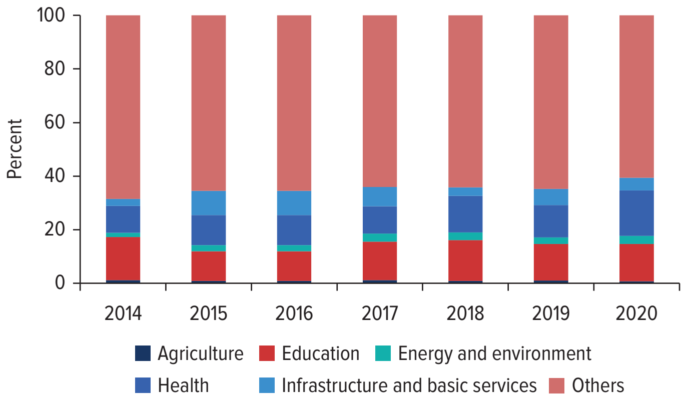
Source: Central Bank of Liberia.

Figure 23: The Composition of Credit to Agriculture, 2021



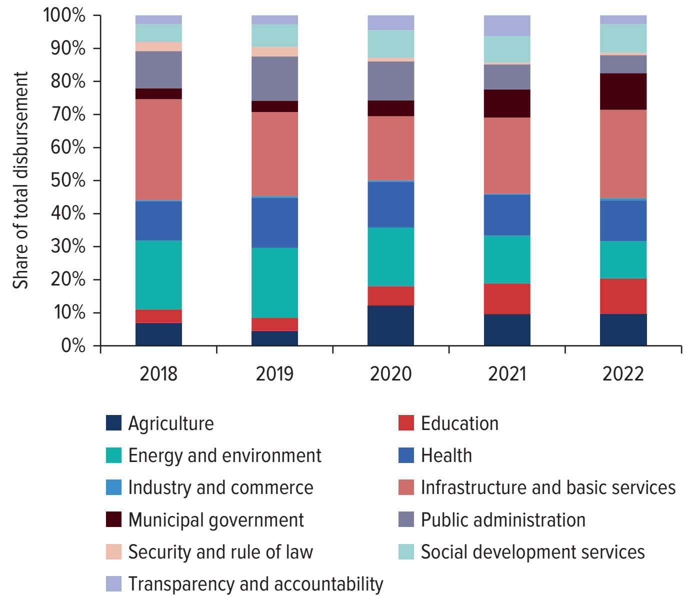
Source: Central Bank of Liberia.

Figure 24: The Share of Budgetary Allocation to Agriculture Stagnated at 1.0 Percent between 2017 and 2020



Source: Liberia Public Expenditure Review (WBG 2021).

Figure 25: The Sectoral Composition of Disbursements of External Resources, 2018–22



Source: Liberia Project Dashboard (MFDP).

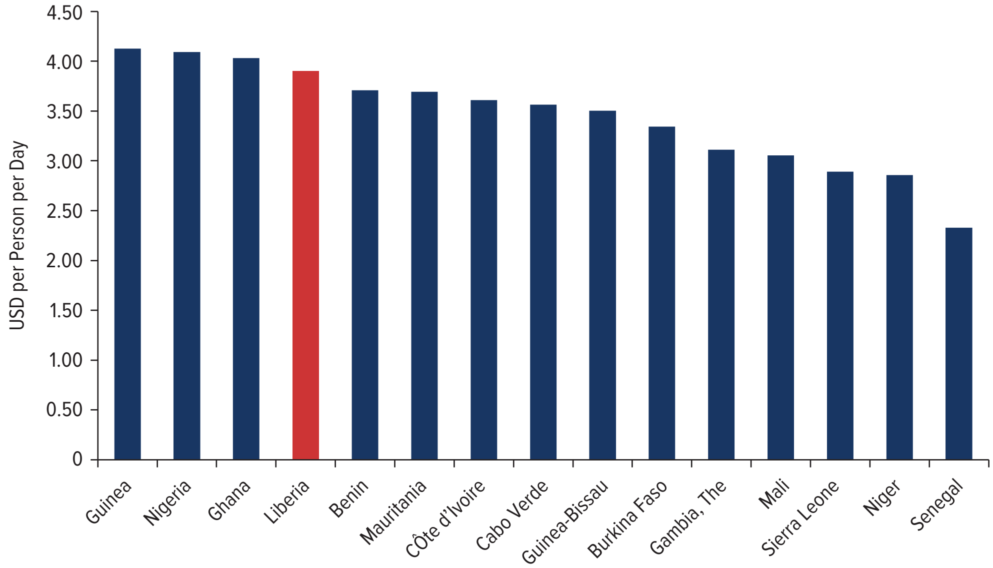
capital expenditures (CapEx) that are domestically financed. Over the period of 2018 to 2023, the government's Pro-Poor Agenda for Prosperity and Development (PAPD) anticipated total capital expenditures of US$3.5 billion, of which a little over 10 percent would go to agriculture. This included both government ("domestically financed") and donor ("foreign financed") capital spending. In the event, for the first two years—2018 and 2019, for example—the government part was only 1.8 percent of total capital spending. Further, foreign-financed spending did not offset the low government contribution, making up less than 5 percent (4.5 percent) of all CapEx disbursements (WBG 2021). Overall, domestically or externally funded investment in agriculture remained well below the target set in the PAPD.

RICE, POVERTY, AND VULNERABILITIES

Amid low production, the increase in imported rice prices continues to fuel poverty and vulnerabilities in Liberia.

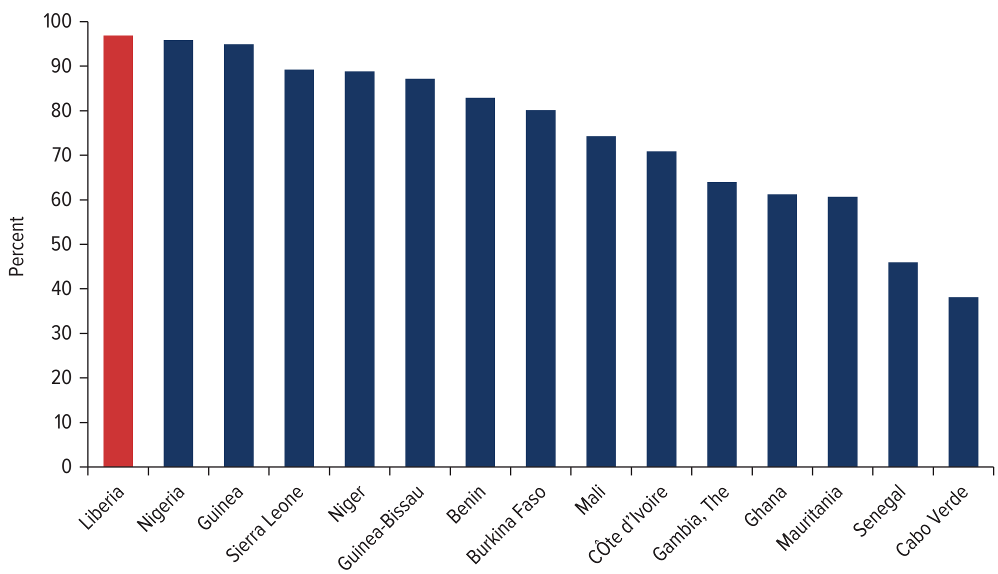
The increase in imported rice prices in Liberia and the high variation in prices across regions are adversely impacting households' welfare. The increase in rice prices on the domestic market impacts household budgets and puts vulnerable households at risk of food insecurity. Of all food items, rice comprises the largest single share of food consumption, more than one-fifth, including purchases and home production. More than two-thirds of households' total spending in Liberia is on food, and the poorest quintile has the highest share of food expenditure coming from only rice, at 31.5 percent (LISGIS 2017b). The poorest households depend the most on rice to meet their dietary needs and very often pay higher prices. Even though over one-half of the poorest households produce rice for consumption, a considerable share of the of rice consumed by poor rural households is imported. The price of rice has a significant impact on households' welfare. According to a study conducted in Liberia in 2008, an increase of 10 percent in the price of rice is estimated to increase the poverty headcount and poverty gap by 2.3 and 1.2 percentage points,

Figure 26: The Cost of a Healthy Diet (USD per Person per Day)



Source: FAO et al., *The State of Food Security and Nutrition in the World 2022* (2022).

Figure 27: The Share of People Unable to Afford a Healthy Diet (Percentage)

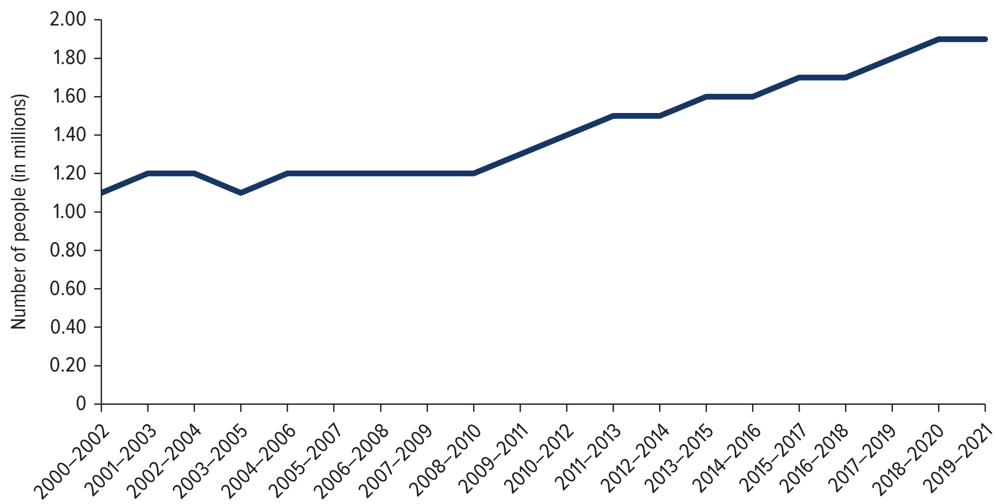


Source: FAO et al., *The State of Food Security and Nutrition in the World 2022* (2022).

respectively, (Tsimpo and Wodon 2008). This suggests that the increase in rice prices, in both rural and urban areas, directly impacts households' budgets or purchasing power, affecting people's lives.

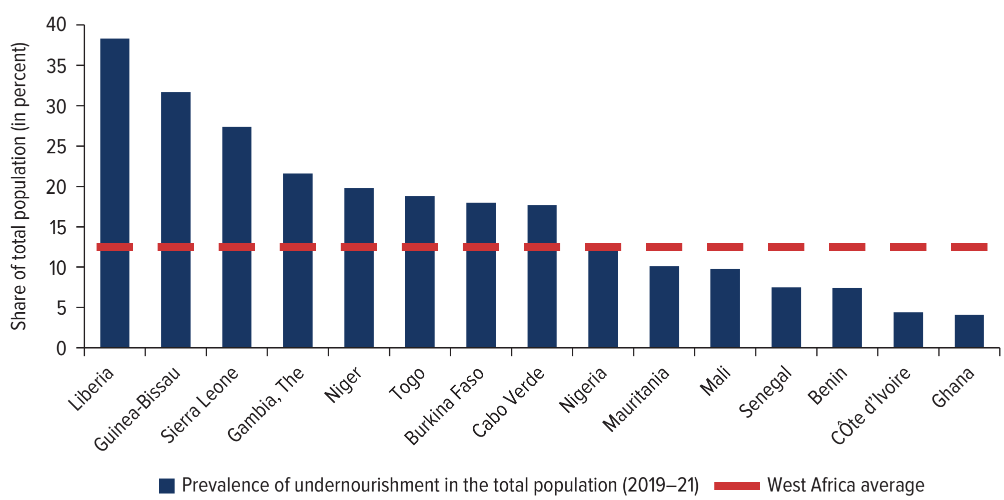
A very large percentage of households worry about the impending lack of food. Not only are food shortages a tragic reality in daily lives, but they also constitute a major fear for most people. According to the *Household Income and Expenditure Survey (HIES) 2016* (LISGIS 2017b), more than 50 percent of households reported food shortages, with 59 percent of households in rural areas facing food shortages, compared to 44 percent of households in urban areas. This situation was only exacerbated by the COVID-19 pandemic. A *High-Frequency Phone Monitoring Survey* (LISGIS and World Bank 2020) found that by 2020 more than 80 percent

Figure 28: Number of People Undernourished in Liberia (Million) (Three-Year Average)



Source: FAO and World Bank staff calculation.

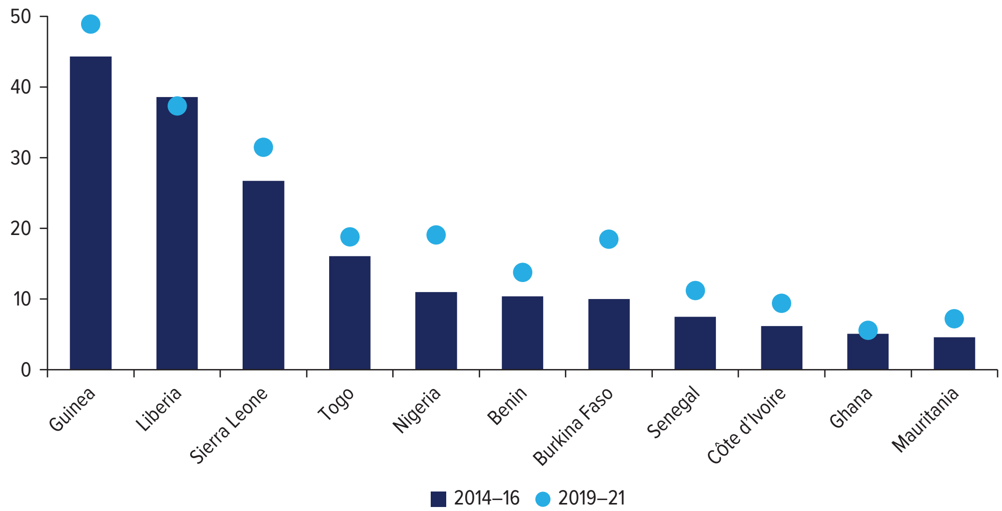
Figure 29: Liberia Has the Highest Rate of Undernourishment in West Africa



Source: FAO and World Bank staff calculation.

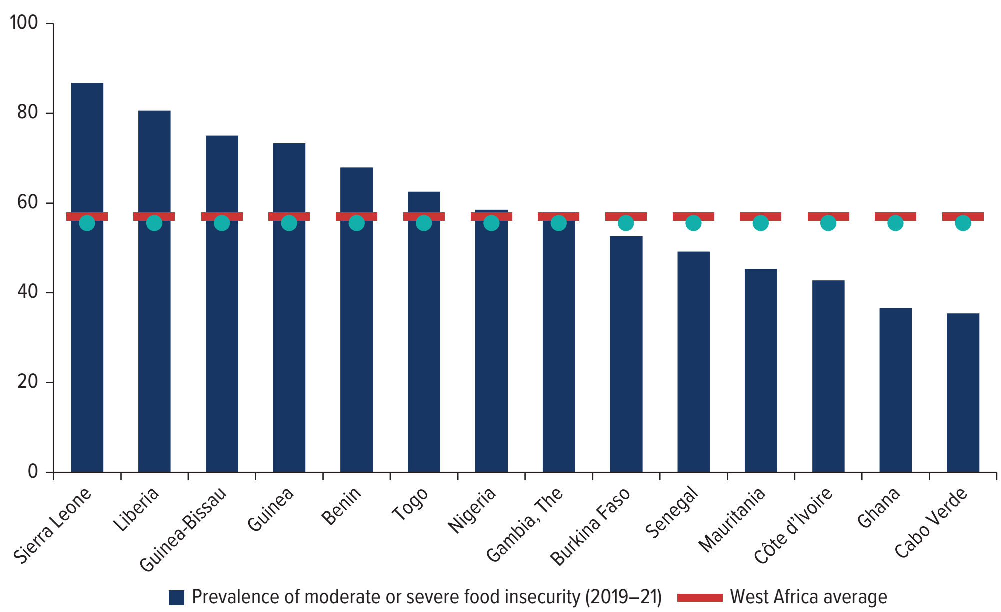
of households worried about not having enough food to eat, a worry grounded on either income losses, rising food prices, or limited access to food markets. The cost and affordability of a healthy diet in Liberia remain prohibitively high at US$3.90 per person per day in 2020, compared to US$2.90 in Sierra Leone and US$2.33 in Senegal. In West Africa, Liberia has the highest share of people unable to afford a healthy diet—about 97 percent, a problem compounded by the preference for rice over other affordable sources of nutrition.

Figure 30: The Prevalence of Severe Food Insecurity in Selected Countries in West Africa (Percent)



Source: FAO and World Bank staff calculation.

Figure 31: The Prevalence of Moderate or Severe Food Insecurity in West Africa, 2019–21 (Percent)



Source: FAO and World Bank staff calculation.

Rice availability and affordability are critical for Liberia to address the high rate of malnutrition. Rice is a critical source of calories for infants and adults in Liberia. According to the *Demographic and Health Survey 2019–2020* (LISGIS, Liberia Ministry of Health, and ICF 2021), the most common foods given to children ages 6 to 23 months are foods made from grains, including rice (65 percent among breastfeeding children and 74 percent among nonbreastfeeding children). As such, households facing food shortages and higher prices, especially in rural areas with limited access to food markets, are at a substantial risk of malnutrition. In Liberia, close to 2 million people (38 percent of the total population) were reportedly undernourished in 2019–21, the highest rate of undernourishment in West Africa.

Food insecurity remains a major and persistent challenge. During 2019–21, four out of every five Liberians faced moderate or severe food insecurity. This share edged up from 79.7 percent in 2014–16. With 37.3 percent of the population experiencing severe food insecurity, Liberia recorded the second-highest rate of severe food insecurity in the West African region, performing only better/lower than Guinea. The latest GHI (2022) classifies Liberia as a country in a "serious state of hunger," ranking it 110th out of 116 countries. The GHI score of 32.4 in 2017–21 was the second highest in West Africa, well above the Sub-Saharan Africa average of 27.0.

Pathways to Revitalize the Rice Subsector to Reduce Poverty and Vulnerability

WHAT IS BEING DONE BY THE GOVERNMENT, ITS DEVELOPMENT PARTNERS, AND THE PRIVATE SECTOR?

Liberia has taken some important steps to help enhance agricultural productivity, with a focus on achieving self-sufficiency in rice. After the civil war, a Comprehensive Assessment of the Agriculture Sector of Liberia was done by the government in 2006–07 to determine the nature and scope of initiatives required to enhance agricultural productivity. Following this assessment, several national policies and strategies were adopted, such as the Liberia Agriculture Sector Investment Plans (LASIP I and LASIP II), centered on enhancing agricultural productivity with a focus on moving from "subsistence to sufficiency" in the context of rice production, and the Food and Agriculture Policy (2008–13), aimed at achieving sustainable self-sufficiency in rice through small holdings, large-scale food production, and transitional mechanized cultivation. However, all these policies yielded very little results, as binding constraints to unlocking the rice sector persist.

The government has been leveraging development partner support to advance reforms that address infrastructure and other constraints in the rice subsector. For instance, through support of development partners, a total of US$3.5 billion was mobilized in external resources from 2016 to 2022, with more than one-fourth (28.0 percent) used for developing infrastructure (mainly roads) and close to one-tenth (8.5 percent) invested in the agriculture sector. From 2018 to 2023, the government's PAPD anticipated total capital expenditures of US$3.5 billion, of which just over 10 percent would go to agriculture. But, overall, domestically, and externally funded investment in agriculture is well below the target set in the PAPD. From 2018 to 2022, externally funded investment in agriculture was less than one-tenth of the US$2.1 billion mobilized during the period. The Liberia Land Authority was established in 2016 and a Land Rights Act was approved in 2018 to help address the issue of land tenure security and create incentives for private investment. However, the government's own support to the agriculture sector remains very limited, averaging just 1.0 percent of the budget from 2014 to 2020.

The government has found it hard to navigate different policy priorities, namely protecting the poor while encouraging domestic production. When world prices were deemed too high, it stepped in ostensibly to protect consumers. For instance, in 2008, the tariff on imported rice was suspended for the first time in response to the rising global rice prices. As often happens when taxes or fees are removed, the tariff on rice remains suspended. Recently, the government introduced a subsidy, paid out to rice importers, to maintain the domestic wholesale price of rice at US$13 per 25 kg bag, with the aim of making rice available and affordable on the domestic market. Not only does this harm local producers, but the burden on the budget, ultimately borne by citizens, is considerable. In 2022, for instance, the fiscal costs escalated beyond budget boundaries. A total of US$11 million was allocated in the annual budget for rice import subsidies, but the government paid more than US$16 million to importers during the year. Lost revenues ultimately also mean fewer resources to make the needed investment (in rural roads or extension services) to boost the viability of the domestic sector.

To keep the price of imported rice low and affordable, the government began to subsidize rice imports in 2021, but would later abandon this policy in December 2022, as it was not sustainable. Rice importers were given subsidies to facilitate rice importation and help maintain the retail price of a 25 kg bag of rice at US$13.50. Considering the fiscal burden that came with subsidizing rice imports and the progressive increase in rice prices driven by different variables, the government's strategy of subsidizing rice imports became unsustainable, disincentivizing importers from adequately supplying the domestic market. Further, the policy was marred by episodes of a short supply of rice in the domestic markets, resulting in hikes in retail prices of the commodity. As with all unsustainable policies, it had to be changed. By December 2022, the government announced an increase in the retail price of a 25 kg bag of rice from US$13.50 to US$17.50 to curtail distortion in the rice market, incentivize imports, and ensure the availability of imported rice in the domestic markets.

For the last three decades, the private sector has been more involved with importation to meet the demand for rice and less involved with domestic production. Since 1979, when the government's attempt to raise tariffs on imported rice caused a deadly riot, public policy has favored imports over locally produced rice. The share of imported rice has increased drastically from less than one-third of domestic consumption in 1979 to two-thirds of domestic consumption in 2021 (Figure 13). About a third of Liberia's farming households grow rice, but not at a commercial scale. The many supply-side constraints tend to limit the competitiveness of local farmers.

Why have past reforms or interventions had a limited impact on the rice sector?

A combination of supply-side constraints broadly affecting the productivity of the rice sector are yet to be addressed. The use of rudimentary methods of farming; the issues of land tenure security; limited coverage and low quality of roads; inadequate access to finance for agriculture or rice production; and in some instances, poor public policy choices continue to limit domestic production. For instance, the suspension of the tariff on imported rice in 2008 and the recent strategy of subsidizing imports created not only distortion in the rice economy but also a disincentive for domestic production. Also, rice price setting in Liberia has been politically sensitive and historically charged. This often translates into poor public policy choices with unintended consequences, such as increasing the fiscal burden and limiting the fiscal space for needed investments.

Conclusion and Recommendations

The demand for rice in Liberia is extremely high, yet Liberia produces only one-third of its rice needs. Rice makes up over 20 percent of the total food consumption of an average household. But supply-side constraints limit domestic production and adversely impact rice prices in the local markets. Hence, even as global rice prices fall, the prices in the domestic markets continue to increase, especially in rural counties, driven by fuel and transport costs, volatility in the exchange rate, and other seasonal factors.

Rice is a critical source of calories for infants and adults in Liberia. The progressive increase in rice prices in Liberia and the high variation across rural areas with limited access to food markets continue to affect household welfare. With more than one-third of households in Liberia reportedly undernourished and four out of every five persons moderately or severely food insecure, the availability and affordability of rice are critical to alleviate food insecurity and poverty.

For the Liberian rice industry to upgrade and begin to compete effectively with imported rice, there will have to be a transition to commercially based relationships, from input supply to the retailing and branding of local production. The near-term vision for rice in Liberia is a system where smallholders consistently produce enough rice to fulfill household needs and commercial-scale production is pursued and substantially increased. Private investment is required to build post-harvest milling, storage, and processing capacity. The inputs the industry will need to grow and develop distribution networks directly into rural communities, and support markets must emerge in support of key growth segments.

Some potential areas of intervention are (i) stakeholder coordination and engagement on the operationalization of the Liberia National Rice Development Strategy and the Liberia Seed Development and Certification Agency Act of 2019, to ensure seed certification and promote the development of the seed industry; (ii) addressing constraints to productivity in the rice sector through registration of customary land to improve tenure security, improving the coverage and quality of roads, providing affordable energy, and avoiding policies that distort the rice economy; and (iii) improving regional market price transmission and integration to further develop Liberia's rice value chain (Tsiboe, Dixon, and Wailes 2015).

To boost production, adopting sectoral policies aimed at improving seed varieties; grading; and facilitating inputs, storage, processing, and distribution would be critical. Additionally, it would be crucial to provide training to guarantee that smallholder farmers embrace modern farming methods and to enhance market access and post-harvest management.

Hence, this report provides some broad directions for policies:

1. Scale up financing to agriculture, particularly the rice value chain, and develop programs that help farmers improve farming methods or practices to boost domestic production.
2. Embark on the needed reforms to broadly unlock the potential of the agriculture sector for farmers to either increase the share of local rice production or use the available land and labor to produce other crops and earn income to purchase rice (local or imported).
3. Attract private investment for commercial agriculture with an emphasis on investments in the rice value chain.
4. Develop a mechanism to maintain a predictable and stable food supply, particularly of rice.

References

CBL (Central Bank of Liberia). 2022. *Annual Report 2022.* Monrovia: CBL. https://www.cbl.org.lr/sites/default/files/documents/CBL_2022_ANNUAL_REPORT_0.pdf.

FAO (Food and Agriculture Organization), IFAD (International Fund for Agricultural Development), UNICEF (United Nations Children's Fund), WFP (World Food Programme), and WHO (World Health Organization). 2022. *The State of Food Security and Nutrition in the World 2022. Repurposing Food and Agricultural Policies to Make Healthy Diets More Affordable*. Rome: FAO. https://doi.org/10.4060/cc0639en.

Kazadi, M., and B. Ryan. 2016. *Value Chain Analysis Assessment Report. The Selection of the Most Promising Agricultural Value Chains in Liberia.* Washington, DC: USAID (United States Agency for International Development). Accessed January 30, 2023. https://pdf.usaid.gov/pdf_docs/PA00T225.pdf.

LISGIS (Liberia Institute of Statistics and Geo-Information Services), Liberia Ministry of Health, and ICF. 2021. *Liberia Demographic and Health Survey 2019–20*. Monrovia: LISGIS and Ministry of Health and Rockville, MD: ICF.

LISGIS. 2017a. *Liberia Poverty Assessment Statistical Abstract, Agriculture Recall Survey 2016*. Monrovia: LISGIS.

LISGIS. 2017b. *Household Income and Expenditure Survey 2016,* Statistics Abstract. Monrovia: LISGIS.

LISGIS and World Bank. 2020. *High-Frequency Phone Monitoring Survey*. Monrovia: LISGIS and Washington, DC: World Bank.

MFDP (Ministry of Finance and Development Planning). Liberia Project Dashboard (website). https://www.liberiaprojects.org/.

Ministry of Agriculture [Liberia]. 2018. *Comprehensive Food Security and Nutrition Survey.* Monrovia: Ministry of Agriculture. https://docs.wfp.org/api/documents/WFP-0000108990/download/?iframe.

Ministry of Agriculture [Liberia]. 2010. *Liberia Agriculture Sector Investment Plan (LASIP I) (2010)*. Monrovia: Ministry of Agriculture. https://moa.gov.lr/sites/default/files/documents/LASIPJune1st.pdf.

Ministry of Agriculture [Liberia]. 2018. *Liberia Agriculture Sector Investment Plan (LASIP II) (2018–22)*. Monrovia: Ministry of Agriculture. https://www.gafspfund.org/sites/default/files/inline-files/7.%20LIBERIA_Investment%20Plan.pdf.

Tsiboe, F., B. J. Dixon, and E. J. Wailes. 2015. "Spatial Dynamics and Determinants of Liberia Rice Market Integration." *African Journal of Agricultural and Resource Economics* 11 (5): 183–96. https://www.researchgate.net/publication/308096941_Spatial_dynamics_and_determinants_of_Liberian_rice_market_integration.

Tsimpo, Clarence, and Quentin Wodon. 2008. "Rice Prices and Poverty in Liberia." Policy Research Working Paper No. 4742, World Bank, Washington, DC. https://openknowledge.worldbank.org/handle/10986/6942. License: CC BY 3.0 IGO.

von Grebmer, K., J. Bernstein, D. Resnick, M. Wiemers, L. Reiner, M. Bachmeier, A. Hanano, O. Towey, R. Ní Chéilleachair, C. Foley, S. Gitter, G. Larocque, and H. Fritschel. 2022. *2022 Global Hunger Index: Food Systems Transformation and Local Governance*. Bonn: Welthungerhilfe and Dublin: Concern Worldwide.

Wailes, E. J. 2015. *Food and Enterprise Development (FED) Program for Liberia: Policy Sequencing Assessment for Liberia's Rice Value Chain*. Report to USAID/Liberia, Food and Enterprise Development Program. Washington, DC: USAID. Accessed 30 January 2023. https://pdf.usaid.gov/pdf_docs/pa00krn5.pdf.

World Bank. 2018. *Spatial Analysis of Liberia's Transport Connectivity and Potential Growth.* Washington, DC: World Bank Group. https://openknowledge.worldbank.org/server/api/core/bitstreams/130d44ff-d84f-5033-91af-3f6abf285f0f/content.

World Bank. 2023a. *Global Economic Prospects, June 2023*. Washington, DC: World Bank. doi:10.1596/978-1-4648-1951-3. License: Creative Commons Attribution CC BY 3.0 IGO.

World Bank Group. 2023. *Commodity Markets Outlook: Lower Prices, Little Relief, April 2023.* Washington, DC: World Bank. License: Creative Commons Attribution CC BY 3.0 IGO.

World Bank Group. 2021. *Liberia Public Expenditure Review*. Washington, DC: World Bank Group.