

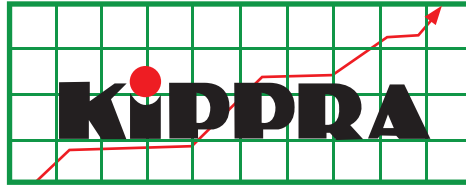
Enhancing Productivity for Sustained Inclusive Growth

KENYA ECONOMIC REPORT 2024



*To create a globally competitive and
prosperous nation with a high
quality of life by 2030.*





The **KENYA INSTITUTE** for **PUBLIC**
POLICY RESEARCH and **ANALYSIS**

Thinking Policy Together

Kenya Economic Report 2024

Enhancing Productivity for Sustained Inclusive Growth

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June 2024



To create a globally competitive and prosperous nation with a high quality of life by 2030

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ISBN: 978 9914 738 58 2

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STATEMENT BY CABINET SECRETARY, THE NATIONAL TREASURY AND ECONOMIC PLANNING

The Kenya Economic Report is prepared annually by the Kenya Institute for Public Policy Research and Analysis (KIPPRA), pursuant to Section 23(3) of Kenya's KIPPRA Act Cap 112A Laws. This is a statutory report, that annually reviews Kenya's economic performance and provides prospects for the medium-term. The Kenya Economic Report 2024 is themed ***“Enhancing Productivity for Sustained Inclusive Growth”***.

The theme is in line with the national development goals of enhancing productivity for inclusive growth. Enhancing labour productivity will ensure the growth of economic activity from a broad sector approach, resulting in improved lives and livelihoods of Kenyans as enshrined in the Bottom-up Economic Transformation Agenda (BETA) and the Fourth Medium Term Plan (MTP IV).

The report captures productivity in agriculture, manufacturing, and informal sectors, which are the key sectors identified by the government in eradicating poverty and sustaining inclusive growth. Macroeconomic stability, strategic partnerships, effective public sector, and relevant skills development play an enabling role in improving productivity. Macroeconomic stability with prudent fiscal and monetary policy will help build and sustain market confidence. Deepening public sector reforms through capacity building, appropriately equipping the workforce at all levels, and adopting digital technology will support productivity in the delivery of public services. Moreover, leveraging strategic partnerships will unlock technology transfer and improve the capabilities of various sectors. Further, deepening domestic and international trade will play a catalytical role in enhancing productivity in other sectors by helping them to expand and diversify markets and promote specialization. Most important is

investing in the development of relevant skills to improve productivity and support in achieving the national development agenda.

Further, the report analyses productivity at the county level. Enhancing labour productivity in arid and semi-arid counties by growing private sector activity and integrating relevant value chains is a pathway to achieving the transformative development agenda. In addition, given the dominance of micro and small enterprises in manufacturing, enhancing labour productivity by upgrading the technology used and investing in skills development will go a long way in strengthening manufacturing. For agricultural productivity, reducing the cost of intermediate goods, skills development, and insurance for agricultural products will contribute to enhanced crop and livestock yields. Finally, with a significant informal sector, supporting digitalization will play a key role in improving production and distribution processes. Considering the informal sector in the scope of the universal service fund will be necessary to mobilize adequate funding.

The Government is committed to enhancing economic productivity in achieving inclusive growth. The Kenya Economic Report 2024, therefore, provides rich and timely evidence to policy makers in driving the government's development agenda. I therefore call upon all the stakeholders at national and county levels to consider and implement the policy recommendations provided in this Report.

Hon. CPA John Mbadi Ng'ongo, EGH
Cabinet Secretary
The National Treasury and Economic
Planning



FOREWORD

The Kenya Economic Report 2024 provides evidence-based policy recommendations to support initiatives in enhancing economic productivity for achieving sustained and inclusive growth at the national and county levels. The preparation of this Report enables the Institute to fulfil the statutory requirement under the KIPPRA Act Cap 112A Laws of Kenya, Section 23(3), which requires the Institute to develop the Kenya Economic Report in consultation with the Ministry responsible for Economic Planning, Finance, National Development, and the Central Bank of Kenya.

The KIPPRA Board of Directors provided oversight and strategic leadership in the preparation of the Report. I thank the management and staff, especially the KER Committee for their devotion, diligence, and professionalism that went into the preparation of this Report. I recognize and appreciate the contributions and insights from the stakeholders through the various consultative forums during the development of the Report.

I also thank the Government of Kenya for the continued financial support to KIPPRA. The support has enabled the Institute to undertake objective policy research and analysis that facilitates the Institute's role in providing advisory and technical services on public policy issues to the Government, the private sector, and other stakeholders.

**Prof. Benson Akong'o Ateng', MBS
Chairperson
KIPPRA Board of Directors**

PREFACE

The KIPPRA Act No. 15 of 2006 mandates the Institute to undertake public policy research, analysis, and economic forecasting to inform the formulation of medium and long-term development plans and goals in Kenya. To achieve this mandate, the Institute reviews the macroeconomic and sectoral performance through the preparation of the annual Kenya Economic Report (KER). The Kenya Economic Report 2024 is the 16th edition in the series of this flagship report.

The KER is prepared through a participatory and inclusive process as spelt out in the KIPPRA Act No. 15 of 2006, Section 23 (3). This legislation requires the Institute to collaborate with the Ministry responsible for Economic Planning, Finance, and the Central Bank of Kenya in developing the report. The Institute conducted consultations and organized a validation workshop to ensure the accuracy and relevance of the report's content. In addition, the technical team responsible for preparing the report engaged in discussions with KIPPRA staff, management, and the Board to enhance the quality and comprehensiveness of the report.

This Report comes at a time when policy makers are seeking evidence for informed policy decisions on accelerating economic activity to achieve the development agenda. With the launch of the MTP IV, the policy discussions in the KER come in handy to offer options on possible policy directions to attain and sustain an inclusive growth trajectory. Improvement of livelihoods requires the creation of decent jobs. As such, a focus on productivity holds a significant role in enabling the country to maximize output with the available resources.

The Report covers key sectors including manufacturing, agriculture, and informal sectors. In addition, it captures the key enablers to enhancing productivity, which include vibrant trade that facilitates distribution; skills development linked to development priorities; exploring strategic diplomatic partnerships to enhance technology transfer; productivity of public service; and the role of digitalization in bolstering productivity in the informal economy.

The Kenya Economic Report 2024, therefore, offers key policy recommendations for the country to consider in enhancing productivity for sustained inclusive growth. Exploiting the opportunities brought out in the policy recommendations is pivotal in promoting productivity at national and county levels. This serves to contribute to the improvement of productivity towards the achievement of the country's medium-term development plans at national and county levels.



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ACKNOWLEDGMENTS

The Kenya Economic Report 2024 was prepared through the participation of various stakeholders. We acknowledge and appreciate the KIPPRA Board Chairperson, Prof. Benson Ateng'; the Board of Directors; and the Executive Director, Dr Rose Ngugi, for their leadership and guidance during the preparation of this statutory Report.

The Institute acknowledges the exceptional dedication and teamwork of the Kenya Economic Report 2024 Technical Committee under the leadership of Kenneth Malot (Chairperson) and Dire Dika (Secretary). The other members of the Technical Committee and authors of the report were Daniel Omanyo, Joshua Laichena, Paul Odhiambo, Cecilia Naeku, Melap Sitati, Violet Nyabaro, Jacob Nato, and Jecinta Ali. The Institute is also grateful to other KIPPRA researchers who generously provided their support and insights during the peer review processes, and quality control processes and workshops.

Further, the Institute sincerely appreciates the support of the Kenya National Bureau of Statistics, County Governments, Ministries, State Departments, and Government Agencies that availed data and information used in this Report. The Institute particularly appreciates the insights of the National Treasury and Economic Planning, the Central Bank of Kenya, and the Kenya National Bureau of Statistics for reviewing the Report. The Institute acknowledges the contribution and participation of all other stakeholders who participated in the validation of this Report.

The financial support to KIPPRA by the Government of Kenya facilitated the preparation of this Report.



ABBREVIATIONS AND ACRONYMS

AFA	Agriculture and Food Authority	COVID-19	Coronavirus Disease 2019
AfCFTA	African Continental Free Trade Area	CPI	Consumer Price Index
AGOA	African Growth and Opportunity Act	CPIA	Country Policy and Institutional Assessment
AGPO	Access to Government Procurement Opportunities	DPP	Director of Public Prosecutions
ASALs	Arid and Semi-Arid Lands	DSF	Debt Sustainability Framework
ASTGS	Agricultural Sector Transformation and Growth Strategy	EAC	East African Community
BETA	Bottom-up Economic Transformation Agenda	EACC	Ethics and Anti-Corruption Commission
BPS	Budget Policy Statement	ECF	Extended Credit Facility
BRICS	Brazil, Russia, India, China, South Africa	ECOWAS	Economic Commission for West African States
BROP	Budget Review Outlook Paper	EFF	Extended Fund Facility
CA	Communications Authority	EPZ	Export Processing Zones
CAD	Current Account Deficit	ERS	Economic Recovery Strategy
CAIP	County Aggregation and Industrial Park	FAO	Food and Agriculture Organization
CAK	Competition Authority of Kenya	FDSE	Free Day Secondary Education
CBC	Competence-Based Curriculum	FPE	Free Primary Education
CBEM	County Business Environment for MSMEs	FSD	Financial Sector Deepening
CBET	Competence-Based Education and Training	GCP	Gross County Product
CBK	Central Bank of Kenya	GDP	Gross Domestic Product
CBR	Central Bank Rate	GFCF	Gross Fixed Capital Formation
CES	Constant Elasticity of Substitution	GOK	Government of Kenya
CIDP	County Integrated Development Plan	GPI	Gender Parity Index
CGE	Computable General Equilibrium	GVA	Gross Value Added
COMESA	Common Market for East and Southern Africa	GVC	Global Value Chain
COP	Conference of Parties	G2B	Government-to-Business
COTU	Central Organization of Trade Unions	G2C	Government-to-Citizen
		G2G	Government-to-Government
		HELB	Higher Education Loans Board
		ICT	Information and Communication Technology
		IFPRI	International Food Policy Research Institute
		ILO	International Labour Organization
		IMF	International Monetary Fund

IPOA	Independent Policing Oversight Authority	KTMM	KIPPRA-Treasury Macro Model
IPRs	Intellectual Property Rights	MDAs	Ministries, Departments and Agencies
ISCED	International Standard Classification of Education	MSMEs	Micro, Small and Medium Enterprises
ITC	International Trade Centre	MT	Metric Tonne
JRC	Joint Research Centre of the European Commission	MTP	Medium Term Plan
JSC	Judicial Service Commission	MTRS	Medium Term Revenue Strategy
KALRO	Kenya Agricultural and Livestock Research Organization	MVA	Manufacturing Value Added
KAM	Kenya Association of Manufacturers	NEMA	National Environment Management Authority
KCHS	Kenya Continuous Household Survey	NGOs	Non-Governmental Organizations
KEBS	Kenya Bureau of Standards	NPLs	Non-Performing Loans
KEMRI	Kenya Medical Research Institute	NPCC	National Productivity and Competitiveness Centre
KEPHIS	Kenya Plant Health Inspectorate Service	NTMs	Non-Tarif Measures
KEPSA	Kenya Private Sector Alliance	OCOB	Office of the Controller of Budget
KER	Kenya Economic Report	OECD	Organization for Economic Cooperation and Development
KeSCO	Kenya Standard Classification of Occupations	OLS	Ordinary Least Squares
KICD	Kenya Institute of Curriculum Development	OPEC	Organization of Petroleum Exporting Countries
KIHBS	Kenya Integrated Household Budget Survey	OSR	Own Source Revenue
KIPI	Kenya Industrial Property Institute	PAI	Public Affairs Index
KIPPRA	Kenya Institute for Public Policy Research and Analysis	PCI	Productive Capacities Index
KNBS	Kenya National Bureau of Statistics	PPF	Production Possibility Frontier
KNQA	Kenya National Qualifications Authority	PPG	Public and Publicly Guaranteed
KRA	Kenya Revenue Authority	PPI	Producer Price Index
Ksh	Kenya Shillings	PPPs	Public-Private Partnerships
KSG	Kenya School of Government	QEBR	Quarterly Economic Budget Review
LAPSSET	Lamu Port-South Sudan-Ethiopia Transport	RECs	Regional Economic Communities
LMICs	Lower Middle-Income Countries	RIAPA	Rural Investment and Policy Analysis
LP	Labour Productivity	RoA	Rest of Africa
		RPL	Recognition of Prior Learning
		RTCP	Retail Trade Code of Practice
		R4D	Research for Development
		SCT	Single Customs Territory
		SDG	Sustainable Development Goal
		SEZ	Special Economic Zone

SGR	Standard Gauge Railway	UNCTAD	United Nations Conference on Trade and Development
SNE	Special Needs Education		
SRC	Salaries and Remuneration Commission	UNEP	United Nations Environment Programme
SSA	Sub-Saharan Africa	UNIDO	United Nations Industrial Development Organization
STEM	Science, Technology, Engineering and Mathematics	US	United States
TFP	Total Factor Productivity	US\$	United States Dollar
TIFA	Trends and Insights for Africa	VA	Value Added
TVET	Technical and Vocational Education and Training	VAT	Value Added Tax
TTI	Technical Training Institute	VAR	Vector Auto Regression
UAE	United Arab Emirates	WEF	Women Enterprise Fund
UK	United Kingdom	WEO	World Economic Outlook
		WHO	World Health Organization
		WTO	World Trade Organization

EXECUTIVE SUMMARY

Trends & developments in macroeconomic performance

The economy recorded stronger growth in 2023. The GDP growth rate increased from 4.9 in 2022 to 5.6 per cent in 2023. Across the sectors, activities in agriculture rebounded strongly after four failed seasons. The agriculture sector expanded by 6.5 per cent in the period on the backdrop of favourable weather conditions and reduced farm input costs following the timely implementation of the government fertilizer and seed subsidy programme. The average growth rate for the services sector was 7.0 per cent, supported by the resilient performance of accommodation and food services, which grew by 33.6 per cent. Industrial activities moderated during the year, with manufacturing growth rate declining from 2.6 per cent in 2022 to 2.0 per cent in 2023. This reflects the negative impact of surging production costs as input prices and borrowing costs rose owing to a weakening shilling and slow growth in the global economy.

Pressure on domestic prices continued in 2023 as inflation rates crossed the government's upper target band of 7.5 per cent. In the past, inflation rates crossed the target band during drought conditions, adversely affecting the availability and cost of food. In 2023, the inflation rate averaged 7.7 per cent compared to 7.6 per cent in 2022. This was due to a surge in fuel prices, driven by external oil market dynamics and, domestically, the implementation of the 16 per cent VAT on petroleum. The Monetary Policy Committee raised the Central Bank Rate (CBR) by 3.75 percentage points in 2023 to anchor inflation expectations. Further, in August 2023, the Central Bank of Kenya introduced an interest rate corridor spanning ± 2.5 per cent around the CBR as a measure to reduce market volatility and uncertainty while improving the transmission of CBR to other interest rates.

The government continued its commitment to the fiscal consolidation path, where the overall fiscal deficit narrowed from 5.6 per cent of GDP in 2022/23 to an estimated 4.9 per cent of GDP in 2023/24. This was achieved through prudent expenditure management and enhanced revenue mobilization efforts. Spending on education, housing and settlement, healthcare, and general economic affairs are strong drivers of productivity growth. Externally, the current account balance narrowed in 2023, supported by a resilient secondary income account (dominated by remittances) and improvement in merchandise trade balance triggered by 15.4 per cent growth in exports.

The Bottom-Up Economic Transformation Agenda (BETA) aims to foster accelerated and sustained growth, enhance investment in climate-smart agriculture to increase productivity, improve food security, and sustain low food inflation. Further, it seeks to scale government investment in healthcare, housing and settlement, and education, which will strengthen workers' resilience, enhancing productivity and growth. Timely monetary response to domestic price development remains a priority in anchoring inflation expectations. In addition, a front-loaded fiscal policy stance will sustain the fiscal consolidation momentum and mitigate public debt vulnerabilities. Further, diversification of exports and addressing export market supply-side bottlenecks is vital in improving merchandise trade and the current account position.

Medium-term macroeconomic outlook

The economic growth forecast projects growth at 5.7 per cent in 2024, averaging 6.0 per cent in the medium-term, assuming normal conditions prevail. Exploiting emerging opportunities such as favourable weather and growing economic partnerships is likely to accelerate growth to

6.1 per cent in 2024 and an average of 6.6 per cent in the medium-term. However, should the downside risks materialize, including poor rainfall patterns and debt vulnerabilities, growth could be depressed to 5.3 per cent in 2024 and 5.6 per cent in the medium-term. Inflation will remain within the government target range. Gradually improving total factor productivity and individual factor productivity, especially labour, capital, and intermediate inputs in the agrifood, manufacturing, services sectors, and home production and consumption would result in boosting the overall gross value added and sectorial value added through backward and forward linkages.

It will therefore be important to remain vigilant on the economic risks to enable timely and adequate policy action. To enhance factor productivity, there is a need to invest in appropriate and enhanced technology in production processes. Further, there is a need to enhance the quality of education and training to upscale the skills of workers. Continued government support in reducing the cost of production through subsidized inputs will support agro-processing and domestic manufacturing.

Labour productivity in manufacturing

The manufacturing sector through its overall linkages with other sectors of the economy plays a significant role in its contribution to GDP. However, the contribution of the sector has remained below the targeted 15 per cent of GDP. The contribution of food manufacturing to manufacturing value added increased from 15.0 per cent during the Economic Recovery Strategy (ERS) to 28.4 per cent in the third medium-term plan (MTP III). Non-food manufacturing declined during the same period. Low labour productivity in the sector is because the low technology industries use outdated machinery and processes. Also, firms rely on 1st and 2nd level skills, where most employees have basic skills, which limits workers to perform basic operation of machinery, thus constraining labour productivity. There is low investment in research for development and innovation due to low financial capital, which limits the ability

of micro and small manufacturers to upgrade their technology and hire skilled workers, resulting in low labour productivity. Access to and affordability of electricity is also a critical factor that affects labour productivity.

To enhance labour productivity, there is a need to equip the existing Constituency Industrial Development Centres (CIDCs) and the County Aggregation Industrial Parks (CAIPs) with incubation facilities to promote an innovation culture among MSMEs. The government could provide incentives to MSMEs participating in the Industrial Innovation Programme, whose focus is to commercialize viable innovations among MSMEs. Skills development could include upskilling the 1st and 2nd level skills and creating awareness among MSMEs on the benefits of the Industrial Training Levy Fund, which can help to upskill training, apprenticeship, and industrial attachment of those working in MSMEs. Further, there is a need to develop 3rd and 4th level skills by providing scholarships and bursaries to educational programmes necessary to drive the design of innovative technologies. To improve access to affordable financial capital by MSMEs, it is important to spearhead the establishment of the Industrial Development Fund as envisioned in the Industrialization Policy. There is also a need to promote the use of off-grid productive use of energy in micro firms by providing incentives to firms that use off-grid energy in the production processes.

Enhancing productivity through trade

Trade acts as a catalyst for sustained economic development. It drives productivity growth by promoting specialization and expanding market access by domestic producers. However, the contribution of domestic trade to the overall productivity of the country is constrained by the high informality, proliferation of counterfeits, limited product diversification with over-reliance on the primary sector (agriculture), unconducive business environment, which has led to the closure of several supermarket branches in the country, and gaps in market infrastructure. On the international front, trade facilitation

measures such as the Single Customs Territory (SCT) have played a significant role in reducing import and export costs and time. Trade agreements such as the African Continental Free Trade Area (AfCFTA) and the African Growth and Opportunity Act (AGOA) have played a crucial role in enhancing the country's exports, with even greater benefits realized with the elimination of tariffs and Non-Tariff Measures (NTMs). Exports are reliant on agricultural commodities, making export trade susceptible to fluctuations in global prices.

To boost domestic trade and enhance overall productivity growth, critical measures include fast-tracking market infrastructure development by prioritizing tier-one markets, establishing warehouses and cold storage facilities, and developing and improving rural road transport networks for small-scale farmers market access. There is a need to empower MSMEs to expand export trade through certification, Industrial Property Rights (IPRs), entrepreneurship training, and value addition. For international trade, more emphasis should be on trade facilitation measures, including reducing border documentation requirements, expediting cargo release times, and strengthening regional agreements such as the AfCFTA and AGOA. In addition, there is a need to diversify exports into high-technology sectors, identifying emerging markets with growth potential and establishing trade relationships.

Enhancing agricultural productivity through a transformative agenda

Agricultural productivity plays a crucial role in the country's economy and is a critical measure that impacts food security, economic growth, and environmental sustainability. In the last two decades, the sector growth and its contribution to GDP averaged 2.3 per cent and 22.4 per cent, respectively. The production of food and cash crops and their yields has been declining over time, driven by low investment in the sector and the effects of climate change. Labour productivity, crop yields, and efficiency of input use have been declining over time. Furthermore, government

spending on agriculture has been below the Malabo commitment of 10 per cent. Though the use of intermediate inputs such as fertilizer, seeds, and pesticides has been increasing, this has not translated into increased production or productivity in the sector, especially for priority crops such as rice, cotton, and oil crops. Timely delivery and distribution of inputs such as fertilizer has been an issue, with reported delays in procurement and distribution of inputs occasioning late use of these inputs and, therefore, affecting output and productivity. Limited value addition for the outputs and market access by the farmers, and inadequate post-harvest management have resulted in losses and wastage for various crops, with an estimated loss of about 20 per cent to 30 per cent of harvested crops. Other challenges include gaps in skills for most farmers to use inputs and adapt to new technologies that may increase productivity. Various policies such as the Kenya Vision 2030, Agricultural Sector Transformation and Growth Strategy (ASTGS) of 2019-2029, the BETA, and the MTP IV have been developed to address the gaps. However, the implementation of these policies will need to address gaps and coordination challenges that have curtailed the achievement of the expected outcomes.

To transform the agriculture sector and ensure increased productivity, timely procurement and distribution of seeds and fertilizer and monitoring access and use by farmers is key to ensuring productivity. Furthermore, allocating adequate spending on agriculture from the national budget and encouraging counties to allocate resources for the sector will be key to achieving the Malabo commitment for the agriculture sector. Implementation of agro-processing and value chain projects envisioned in MTP IV, such as the establishment of storage and cooling plants, will be crucial in providing the required infrastructure to reduce wastage and increase productivity. Livestock and crop insurance schemes are key in protecting farmers from the vagaries of weather. Further, investment in human capital by ensuring the revision of the curriculum to make agriculture a compulsory subject in secondary schools will

be key in ensuring skills development from an early age. Moreover, facilitating training and monitoring the supply and the requirement of various professionals in the agriculture sector, such as extension officers, plant and crop breeders, and other scientists will ensure adequate well-trained labour for the sector. This will help farmers access extension services and adopt modern technology and innovations to increase productivity.

Developing skills for a productive and dynamic labour market

Kenya has made significant investments in skills development through education and training, apprenticeship and internship programmes, and workplace training approaches. Despite these investments, skills development through education and training show disparities in access to education especially in arid and semi-arid lands, inadequate education outcomes, and low transition rates from basic education to tertiary education level. The apprenticeship programmes offered in the informal employment sector suffer from structural limitations and inadequate standards, resulting in variations in training. The workplace training approach faces financial constraints borne by organizations in providing staff training. Further, the current approach to skills development does not adequately align with the national priorities outlined in BETA, leading to skills shortages in vital sectors such as health, manufacturing, and ICT. There is low enrolment in courses related to the BETA pillars, which could hinder the achievement of development goals. Therefore, there is a need for a more targeted and aligned approach to skills development. Additionally, a significant disparity exists between qualifications attained and job requirements, highlighting the need for improved alignment between education outcomes and industry needs.

Skills development could be aligned with the evolving needs of the labour market, through the following: first, focus attention on the national priority areas, namely agriculture; micro, small, and medium enterprises (MSMEs); healthcare;

and digital superhighway and creative economy by mobilizing funding to provide targeted scholarships, loans, and bursaries to students to pursue priority programmes, including through establishment of a National Skills and Funding Council for resource mobilization towards skills development; retooling workers in the priority sectors and strengthening training centres of excellence by allocating adequate funding for infrastructure and equipment; providing outreach programmes to enhance enrolment and retention at all levels of education and training; reviewing the free primary education policy to include universal pre-primary education and removal of indirect costs on uniforms, transport and textbooks; implementing the Recognition of Prior Learning (RPL) policy through increased public awareness and implementing tax rebates for training expenditures to incentivize skills development; and finally, providing adequate financial resources to support the competency-based curriculum and competency-based education and training curriculum. In addition, there is a need to improve data management and enhance industry and academia partnerships to bridge skills gaps.

Labour productivity at the county level

County labour productivity is important for the country to achieve sustainable and inclusive economic growth. Economic activities take place at the county level and, therefore, interventions to enhance labour productivity at this level would increase productivity at the national level. Although arid counties have the smallest size of economic output (as measured by Gross Value Added-GVA), they have latent natural resources such as land, wildlife, and renewable energy resources that hold the potential for sustainable economic growth. However, climate change, insecurity, and inadequate infrastructure constrain the growth and optimal utilization of their potential. In addition, arid counties have a comparative advantage in livestock production, which is yet to be fully utilized. The services sector dominates the share of county GVA for all county categories, but a significant proportion is non-market services that dominate in arid

counties with lower output from the private sector. As such, with low quality and quantity of labour coupled with low labour utilization, arid counties have the lowest labour productivity.

Therefore, it is important to optimize the livestock production potential in arid counties and grow the county economies by building climate resilience in the arid counties and integrating livestock production into the leather value chain. To reduce the dominance of non-market services in arid GVA, there is a need to create an enabling environment for the private sector to exploit the latent natural resources and expand market-oriented activities across counties to facilitate growth in labour productivity. Further, there is a need to prioritize investments in human capital development to enhance the quality of labour in all counties. In addition, full integration of livestock production into the leather value chain is required.

Leveraging strategic partnership to unlock technology transfer

Technology is central to human life as it contributes to socio-economic transformation, increased productivity, and overall development of societies and countries. Similarly, technology has an enormous influence on international affairs and political and economic dimensions as it plays a considerable role in the distribution of wealth and power. Since technology is among a few states and multinational corporations, it can be used as a strategic instrument to advance the interests of a State. Technology transfer and innovation are fundamental drivers of economic growth, industrialization, and development. However, unequal access to technology is one of the major bottlenecks to achieving sustainable and inclusive development. Kenya's economic diplomacy aims at the enhancement of technological advancement by exploring new sources of affordable and appropriate technology. The emergence of major economic powers in the past two decades, revitalization of South-South and Triangular Cooperation, and rebirth of diplomatic engagement through strategic partnerships are potential opportunities for

the acquisition of technology to enhance productivity and boost the country's strategies for realizing the development goals. Technology transfer is critical for the establishment of an effective healthcare ecosystem and vaccine production, revitalizing the textile industry, expansion of infrastructure, and ensuring that Kenya's Diaspora contributes to innovation cooperation.

To unlock technology transfer and innovation cooperation, it is important to strengthen strategic partnerships with emerging and advanced economies for the acquisition of available technologies, boosting research for development, and harnessing frontier technologies for enhancing productivity and inclusive growth. Improvement of policy and institutional environment is also imperative for the use, adoption, and adaptation of frontier technologies for the country to optimize opportunities in technological invention and advancement. Investment in local technological absorptive capabilities is crucial for the establishment of a reliable and adequate healthcare system and vaccine production, a sustainable textile industry, infrastructure development, and maximizing technology transfer, knowledge, and skills development accruing from Kenyan students and experts in the diaspora.

Enhancing productivity in the public service

The implementation of a devolved system of government in 2013 brought significant changes to the public service, necessitating adjustments in employment practices as responsibilities were decentralized to the county level. However, the process was hampered by freezes on public service recruitment, leading to challenges in labour management. The differences among counties highlight the critical role of strategic policies, infrastructure development, investment in human capital, and governance reforms in driving productivity and economic growth. While national productivity has increased, disparities across counties persist, emphasizing the need for targeted interventions in technology access, personnel

quality, infrastructure, and governance. Improving public service delivery requires a comprehensive approach that includes capacity building, performance management contracting, technology integration, and the establishment of oversight bodies. The challenges in budgetary and financial management, such as revenue shortfalls and low allocations to wages, operational and maintenance costs, capital expenditure, and mounting pending bills influence the quality of public service. Public satisfaction depends on creating a favourable business environment, promoting national values, and ensuring good governance practices.

A coordinated and strategic approach to capacity building and human resource management is essential across all government levels. This involves developing standardized training programmes, streamlining recruitment processes, offering competitive salaries, and implementing performance management systems. Targeted interventions focusing on technology access, personnel quality, infrastructure development, and governance practices should be prioritized to enhance productivity. Additionally, a comprehensive approach to public service delivery should include the expansion of training programmes, leveraging technology for digitization and automation, and promoting citizen engagement. Strengthening budgetary and financial management practices is crucial, including improving revenue collection strategies, enhancing budget execution, and addressing pending bills. Creating an enabling environment for businesses, promoting national values, and upholding good governance practices are also crucial in improving public satisfaction and enhancing productivity.

Leveraging on digitalization to increase productivity in the informal economy

The informal economy contributes over 80 per cent of the total employment but is faced with low labour productivity. Integrating digital technologies into the operations of informal

businesses will help to improve productivity because high labour productivity is linked to a high digitalization level in a business. The majority of the informal sector establishments have a low level of digitalization attributed to factors such as low digital skills, low digital literacy levels, and high cost of digital tools. Furthermore, enabling factors such as infrastructure development are still low, with Internet coverage averaging 3.94 per cent and electricity connection at 32.48 per cent across counties. There is also a gender divide, with labour productivity in female-owned businesses being lower compared to their male counterparts. This is linked to lower levels of education, balancing multiple roles, and financial constraints by women in the informal sector making them unable to obtain physical assets such as digital tools. The age of firms in the informal sector influences the willingness, readiness, and capacity of businesses to adapt to digital technologies. Consequently, medium-aged firms are more inclined to enhance their productivity by embracing the use of technologies, while older firms tend not to adapt easily as they have established traditional ways of operating their businesses.

In enhancing the digitalization of the informal sector, expanding investment in digital skills and digital literacy development programmes is necessary for the population in rural and underserved areas. Furthermore, the government could enhance the affordability, accessibility, and competitiveness of digital infrastructure by fast-tracking the implementation of programmes on Internet connectivity, broadband fibre, and electricity connectivity in different parts of the country. This includes ensuring County Aggregation Industrial Parks are adequately equipped and expanding the universal service fund to cover the needs of the informal sector. Finally, it is important to accelerate the production of locally produced or assembled digital tools such as mobile phones to increase affordability for such tools. The government could subsidize costs and provide incentives for digital investments in the country.

INTRODUCTION

1.1 Background

The Kenya Economic Report (KER) 2024 is prepared in compliance with the provisions of Section 23 (3) of the KIPPRA Act Cap 112A Laws of Kenya. This report provides a comprehensive analysis of Kenya's economic performance in the previous financial year and economic prospects for the next three years. In line with its objective, the KER 2024 focuses on the theme 'Enhancing Productivity for Sustained Inclusive Growth'. The overarching goal is to present evidence-based public policy options that can foster sustainable and inclusive economic growth in Kenya by boosting productivity across various sectors of the economy and counties. This theme is particularly important as Kenya strives to maintain its economic momentum while implementing the national development commitments stipulated in the Bottom-up Economic Transformation Agenda (BETA) Plan. Kenya is confronted with various factors that could impact its growth trajectory, including global economic uncertainties, climate change pressures, and technological advancements. Through this Report, the Institute aims to contribute valuable insights and recommendations to support informed decision-making and policy formulation, ultimately contributing towards supporting the country in sustaining its economic growth, and economic productivity and in building a resilient and prosperous future.

The country has recorded a recovery in economic performance since 2020 when the economy contracted by 0.3 per cent. However, the recovery momentum was disrupted by weaker global growth attributed to the Russia-Ukraine war, tightened international financial markets, and the prolonged drought resulting in low growth in the agriculture sector. The

agriculture sector contracted by 1.6 per cent in 2022, mainly due to the prolonged drought and increased fertilizer costs resulting from supply chain shocks partly due to the Russia-Ukraine war. The industry sector grew by 3.9 per cent after a strong rebound in 2021, while growth in the services sector stabilized at 7.0 per cent in 2022 after a 10.1 per cent rebound in 2021.

The recognition of productivity and productivity growth in Kenya as a critical driver for sustained economic growth and transformation was through Sessional Paper No. 3 of 2013 on National Productivity Policy. The policy aimed at providing a paradigm shift in productivity management in the country. The key objective of the policy was to achieve an annual productivity growth of 4.5 per cent for the public sector, and 5.5 per cent for the private sector. Before this policy, the country had been implementing various strategies. The strategies included the Economic Recovery Strategy for Wealth and Employment Creation (2003-2007); and later, the 2007 national blueprint for guiding national growth and transformation (Kenya Vision 2030), which focused on science, technology, and innovation to drive productivity improvement for Kenya towards a middle-income country with a high growth rate of 10 per cent by the year 2012 and sustain the growth rate up to 2030. The policy acknowledged that higher levels of productivity can be associated with higher economic growth, increased incomes, better working conditions, and high quality of life.

Since 2022, the government has been implementing the Bottom-Up Economic Transformation Agenda (BETA) (2022-2027) and MTP IV (2023/24-2027/28), aimed at attaining economic growth for the country by focusing on the key sectors of agriculture, micro, small and medium enterprises (MSMEs), digital economy, creative economy, health,

infrastructure, manufacturing, and social protection. To attain the development goals, productivity improvement has an important role in improving economic growth and enhancing the country's competitiveness and standards of living. This means that measurement of productivity is critical in understanding how it can be leveraged to improve the country's economy. This Report provides a comprehensive analysis of productivity to identify specific strategies for leveraging productivity to achieve sustainable growth, prosperity, and the overarching goals of sustained inclusive growth, eliminating inequalities, and promoting social inclusion.

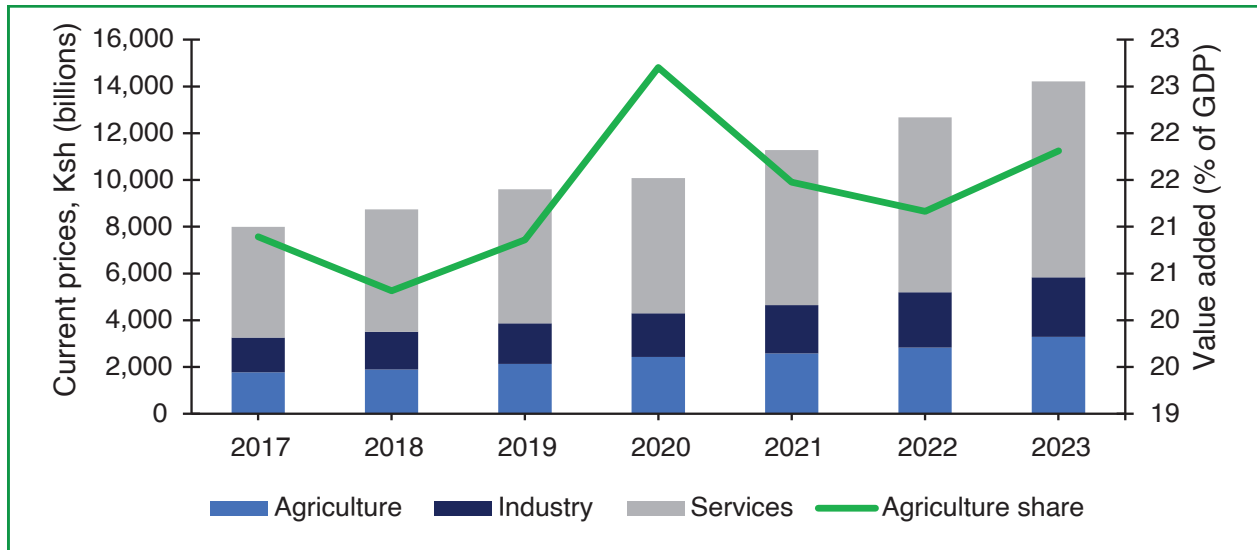
Inclusive growth represents growth that is fairly distributed across the society and that which creates equal opportunities for all¹. It is growth that enables more people to contribute to it and benefit from it (Arezki, Pattillo, Quintyn and Zhu, 2012). This means that the process of generating growth and sharing it includes various segments of the population. Furthermore, inclusive growth raises the living standards of a wide cross-section of the population. There is, therefore, a very close relationship between productivity growth and inclusive growth. By boosting the productivity of factor inputs, more output is generated with existing factor inputs, which in turn shifts the production possibility frontier outwards. Thus, more goods and services are made available, resulting in growth in GDP. Ensuring that the output is equitably produced and distributed to the population, improves welfare for all and,

therefore, the achievement of more inclusive growth. The focus of KER 2024 on enhancing productivity is critical towards not only producing more with fewer resources but also achieving growth that is inclusive and sustainable.

The majority of the population entering the labour force is absorbed in agriculture or service sector jobs, which are low-productivity sectors (Kenya Integrated Household Budget Survey, KIHBS, 2015/16). Available evidence shows that industry is the most productive sector in Kenya, meaning that the sector has the highest average value of output per worker compared to agriculture and services. For instance, based on data from the World Bank indicators and for purposes of international comparison, between 2015 and 2019, the average real value added per worker in the industry was US\$ 9,140 (Ksh 1,371,090) compared to US\$ 4,050 (Ksh 607,545) and US\$ 1,720 (Ksh 258,015) recorded in services and agriculture sectors, respectively. Dieppe (2021) notes that lower productivity limits the ability of economies to generate growth of real incomes in the long-term. This means that while agriculture and services absorb most job market entrants in Kenya, their real income is likely to be lower compared to industry workers, who account for only a small share of jobs. Figure 1.1 presents the trends in sector value added in Kenya for agriculture, industry, and services for the period 2017-2023. Productivity measurement will be undertaken in the Report and actual productivity data for each sector estimated.

¹ OECD, Inclusive Growth.

Figure 1.1: Trends in sector value added, 2018-2023

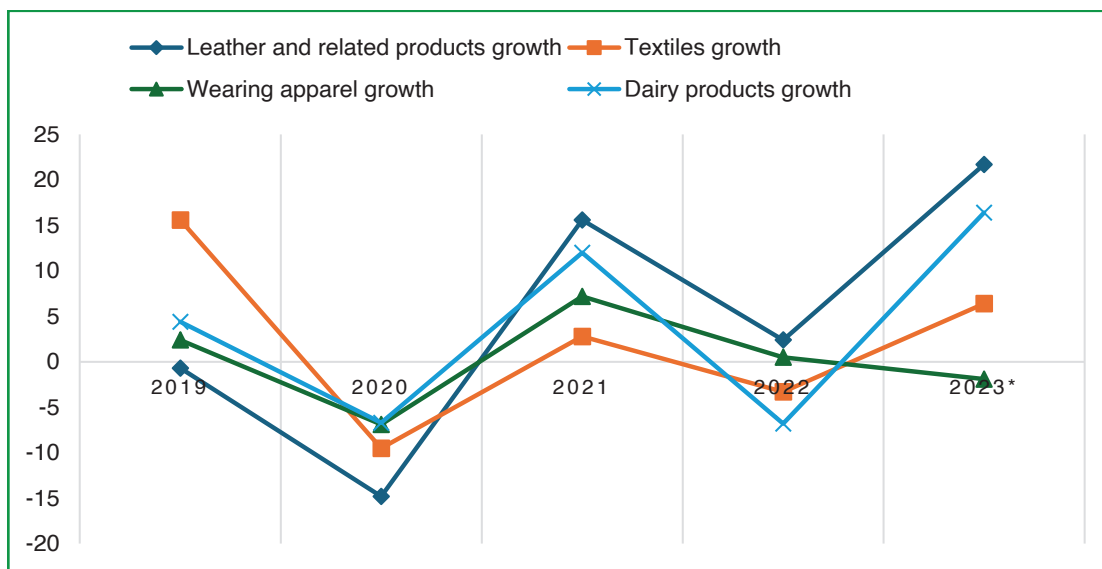


Data Source: KNBS (2023; 2022), Economic Survey

In addition to the key economic sectors analyzed in Figure 1.1, the report identifies the nine (9) key value chains that the government is focussing on to develop, which include: leather and leather products, textile and apparel, dairy, tea, rice, edible oils, the blue economy, minerals including forestry, and construction/building

materials. These value chains are critical to enhancing productivity growth, as they have the potential to drive economic growth, create jobs, and improve livelihoods for Kenyans. Figures 1.2 and 1.3 present an analysis of the performance of these key value chains in the economy.

Figure 1.2: Trends in performance for leather, textile, apparel, and dairy products in Kenya (%)

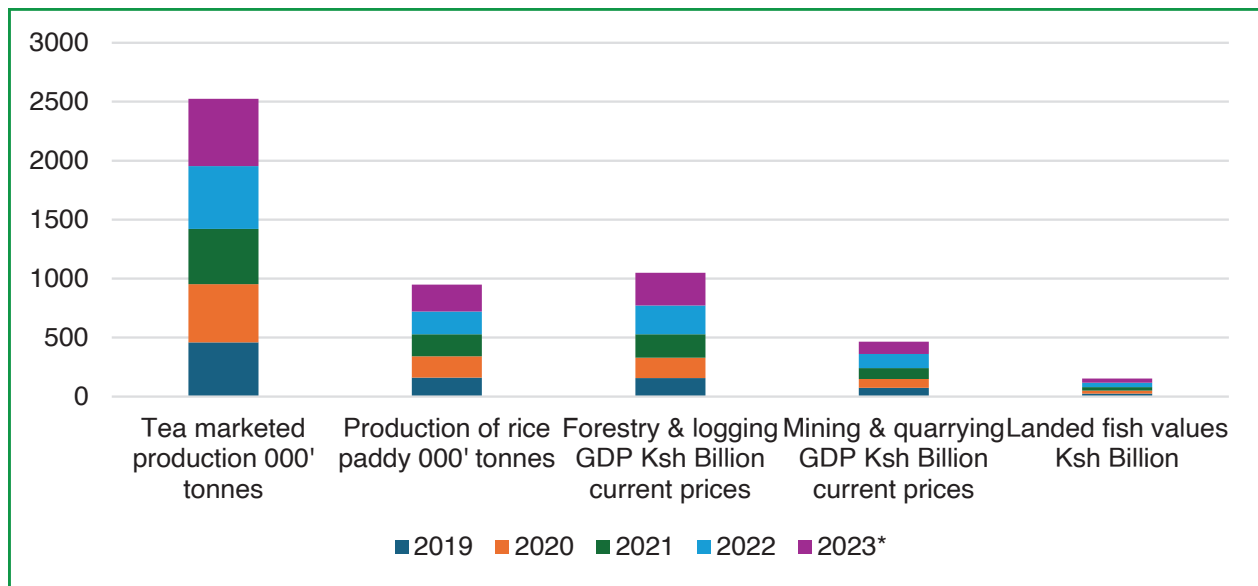


Data source: KNBS (2024), Economic Survey

Leather and related products, textiles, wearing apparel, and dairy registered a contraction in 2020 largely due to the COVID-19 pandemic, which disrupted various economic activities, and had improved performance following the resumption of economic activities. The products recorded improved growth in 2023 following the greater focus by the government to develop their respective value chains. The performance of the other five (5) value chains is presented in

Figure 1.3. Enhancing productivity in these key value chains is essential for sustained inclusive growth, as it can lead to increased economic efficiency, improved resource allocation, and higher economic returns. By focusing on these value chains, the government can develop targeted policies and interventions to enhance their performance and competitiveness, thereby driving economic growth and development.

Figure 1.3: Trends in performance for other key value chains under the BETA



Data source: KNBS (2024), Economic Survey

Against this background, it is evident that there is still a wider scope for economic transformation to occur, driven by productivity growth. The KER 2024, therefore, assesses sectoral contexts, policies, and institutional frameworks that influence productivity and explore options for enhancing sustainable growth in Kenya. The objectives of the report were addressed by focusing on the key drivers of productivity, including macroeconomic stability, trade, skills development, public sector, and strategic partnerships. The report focuses on the key productive sectors, including agriculture, the informal sector, and industry. Further, the report covers county-level productivity, given that the counties play a critical role in supporting

production systems. The following are the key chapters of the report:

1. Trends in Macroeconomic Performance;
2. Kenya's Medium-Term Macroeconomic Prospects;
3. Increasing Labour Productivity in Manufacturing;
4. Enhancing Productivity through Trade;
5. Investing in Skills for a Productive and Dynamic Workforce;
6. Transforming agriculture for Enhanced Productivity;
7. Leveraging Strategic Partnerships in Unlocking Technology Transfer;

8. Assessing Productivity at the County Level;
9. Enhancing Productivity in the Public Service; and
10. Leveraging on Digitization to Increase Productivity in the Informal Economy.

1.2 Definition of Key Concepts and Rationale of the Theme

The key concepts used in this Report are outlined in Box 1.1. The box describes productivity, total factor productivity, labour productivity and capital productivity.

Box 1.1: Key concepts used in the report

Productivity: Productivity refers to the measure of output per unit of input within a given timeframe. It assesses the efficiency with which resources (such as labour, capital, and technology) are utilized to produce goods and services. Productivity plays a significant role in determining a country's economic performance and competitiveness (OECD, 2018; Jorgenson, 2008).

Total factor productivity (TFP): TFP measures the overall efficiency with which all factors of production (including labour, capital, and technology) are used to generate output. It reflects technological progress, innovation, and the ability to make more efficient use of available resources. Enhancing TFP is crucial for sustaining economic growth and achieving higher productivity levels (Amjad and Awais, 2016; Chen et al., 2010).

Labour productivity: Labour productivity specifically focuses on the output generated per hour of work or per worker. It is an essential component of overall productivity and is influenced by factors such as skills, education, training, and the quality of labour inputs. Improving labour productivity often involves enhancing human capital development, promoting skills acquisition, and fostering innovation.

Capital productivity: Capital productivity examines the efficiency with which capital inputs, such as machinery, equipment, and infrastructure, are used to generate output. It involves maximizing the output derived from a given amount of capital investment. The strategies to improve capital productivity can include technological upgrades, effective asset management, and infrastructure development.

Economic Growth (Mankiw and Romer, 1992): Economic growth refers to an increase in a country's real gross domestic product (GDP) over time. It represents the expansion of an economy's production capacity and is typically measured by the rate of change in GDP.

1.3 Rationale for the Theme

The theme of the KER 2024 focuses on sustaining economic growth through enhanced productivity. It is relevant, especially in the context of the government's priority of improving the lives and livelihoods of Kenyans in various sectors of the economy as enshrined in the Bottom-Up Economic Transformation Agenda (BETA) and the Fourth Medium-Term

Plan (MTP IV). The broad aim of the agenda is to enhance inclusive growth and improve the general welfare of Kenyans for the sustainable development of the country. This can be achieved through the provision of employment opportunities as a means of poverty reduction, affordable housing, improving agricultural production, boosting micro, small and medium enterprises (MSMEs), and enhancing the digital economy. This will require adequate

resources to deliver on the BETA. Improvement of productivity will be a critical enabler towards the achievement of the MTP IV.

Economies globally have focussed on expanding their economies by attaining economic growth and making use of the limited resources available. In line with the definition of productivity, as outlined above, productivity holds an important role in enabling countries to produce more output in the context of available inputs, thereby achieving higher economic growth. This is in line with the assertion of the famous US economist Paul Krugman, who observed that productivity is not everything, but in the long-run it is almost everything. The theme of productivity growth is thus critical for enabling long-run sustainable economic growth using the scarce resources available and as a basic goal for economic policy (Australian Treasury, 2009). Furthermore, the OECD (2015) observes that productivity is the ultimate engine of growth in the global economy.

Productivity growth has generally weakened in the global economy due to adverse shocks such as epidemics, wars, financial crises, and natural disasters (World Bank, 2021). Kenya has made significant strides in recent years, but there are still pressing issues that need to be addressed. Gaps such as low productivity levels in some sectors, limited access to finance, inadequate infrastructure, and a high level of informality in the economy hinder the country from exploiting its full economic potential to achieve inclusive growth. There is a need to revive productivity growth across all sectors given its role in enabling sustained growth and development. Furthermore, the achievement of the Sustainable Development Goals (SDGs) depends on how a country can productively use its resources to expand its output. More specifically, SDG 8 mentions the importance of promoting sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all. Productivity improvement is thus at the

heart of more inclusive and sustained growth.

Productivity improvement plays a pivotal role in driving economic development, reducing poverty, and creating opportunities for all segments of society. By increasing productivity levels across various sectors, a country can unlock its full potential and propel the economy towards a path of sustained and inclusive growth. However, for deeper analysis and based on the understanding of critical sectors where productivity can be upscaled, the KER 2024 emphasizes manufacturing, agriculture, and digitalization of the informal sector. Furthermore, with devolution marking 10 years in the country, the report examines how devolution can be strengthened by improving productivity at the county level and how international engagements and collaborations can be leveraged to boost productivity. In addition, it looks at the key factors that can enable productivity, including trade, which facilitates distribution, skills development, and the public sector in the provision of public service.

Achievement of the government agenda and development programmes calls for enhanced productivity. Specifically, the focus on productivity is based on four main reasons: productivity improvement holds the key to expanding and sustaining economic growth in the face of scarce resources; secondly, strengthening productivity is a critical element to making growth more resilient and sustainable (Akhtar, Hahm and Hasan, 2016); thirdly, achievement of the SDGs and other government agenda, such as BETA, is premised on boosting productivity growth; fourthly, productivity has been recognized as the main driver of future growth and prosperity through investment in innovation and knowledge-based capital (OECD, 2015). However, productivity improvement alone will not be the only solution for enhanced economic growth. It will need to be supported by adequate resource mobilization and prudent utilization of the available resources.

1.4 Conceptual Framework

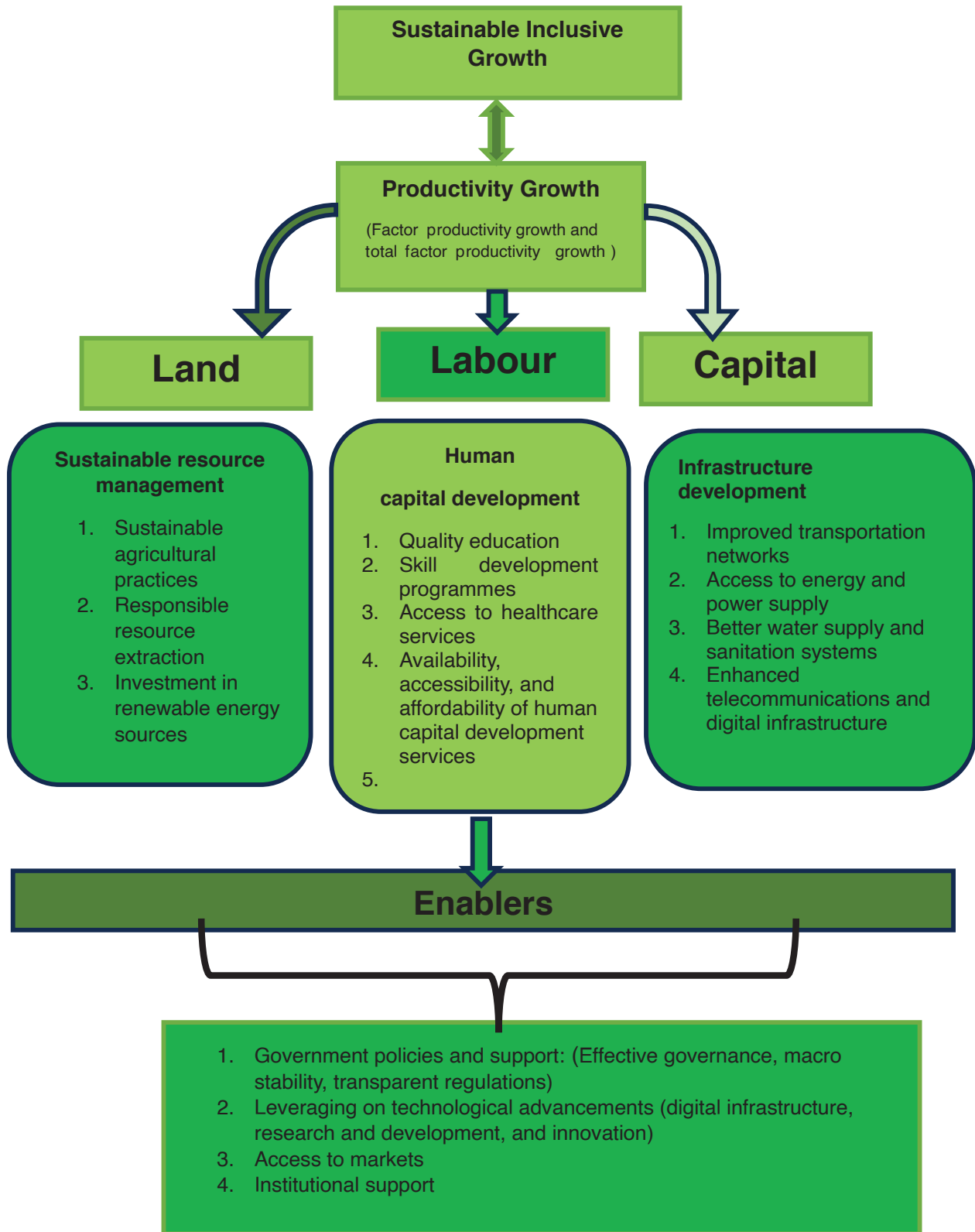
Sustained economic growth is crucial for achieving long-term development goals and improving the standard of living for its population. One of the key drivers of sustainable economic growth is enhanced productivity across various sectors. The conceptual framework aims to outline the key elements and inter-relationships necessary to enhance Kenya's productivity for sustained inclusive growth.

Enhancing productivity for sustained inclusive growth is vital for achieving robust economic development. While factors such as resource mobilization, governance, investment, and stability contribute to economic growth, the role of productivity improvement as a catalyst for enhanced economic performance has often been overlooked. The report focuses on boosting productivity across critical economic sectors and within the context of devolution and international engagement. By emphasizing productivity improvement in these sectors, the report aims to enhance their growth prospects and, consequently, foster overall economic performance. It acknowledges that sustained inclusive growth hinges on robust productivity

growth, which complements efforts in resource allocation, effective governance, sectoral investment, peace, and stability, among other interrelated factors.

Productivity improvement focuses on making more efficient use of inputs or resources to achieve output and, overall economic growth. By making efficient use of available resources, the resource envelope widens, and with wider resources, there is more output. Consequently, productivity improvement enables the economy to operate on the production possibility frontier (PPF) and shift the PPF outwards. Productivity growth involves three types of productivity: partial factor productivity, total factor productivity, and multifactor productivity. Partial factor productivity is about improving the productivity of one factor of production, such as labour or capital. Total factor productivity encompasses all the factors of the productivity equation. Multifactor productivity deals with the volume of output from a bundle of both labour and capital inputs (Australian Treasury, 2009). Sustained productivity improvement requires an enabling environment. The report, therefore, conceptualizes productivity growth as a driver for sustainable economic growth (Figure 1.4).

Figure 1.4: Conceptual framework on enhancing productivity for sustained inclusive growth



Source: Authors' conceptualization

Sustaining Kenya's economic growth through enhanced productivity requires a comprehensive approach that addresses the key determinants. The conceptual framework in Figure 1.4 has sustainable economic growth as the core focus supported by productivity growth. To realize productivity growth, emphasis should be on the three key factor inputs; that is, land, labour, and capital. Technology is also a crucial factor that promotes productivity growth. However, technology is useful when augmented with the other factor inputs, and therefore technology is an enabler. There are also three sub-indicators for productivity; these are partial

factor productivity, total factor productivity, and multifactor productivity. The interplay between a conducive policy environment, infrastructure development, human capital investment, technology and innovation, market access, and sustainable resource management is crucial. Human capital development focuses on the availability, accessibility, and affordability of human capital services, such as education and healthcare. By strategically focusing on these elements, Kenya could foster a productivity-driven economy that ensures long-term sustainable economic growth, job creation, and improved living standards for its people.

MACROECONOMIC
PERFORMANCE

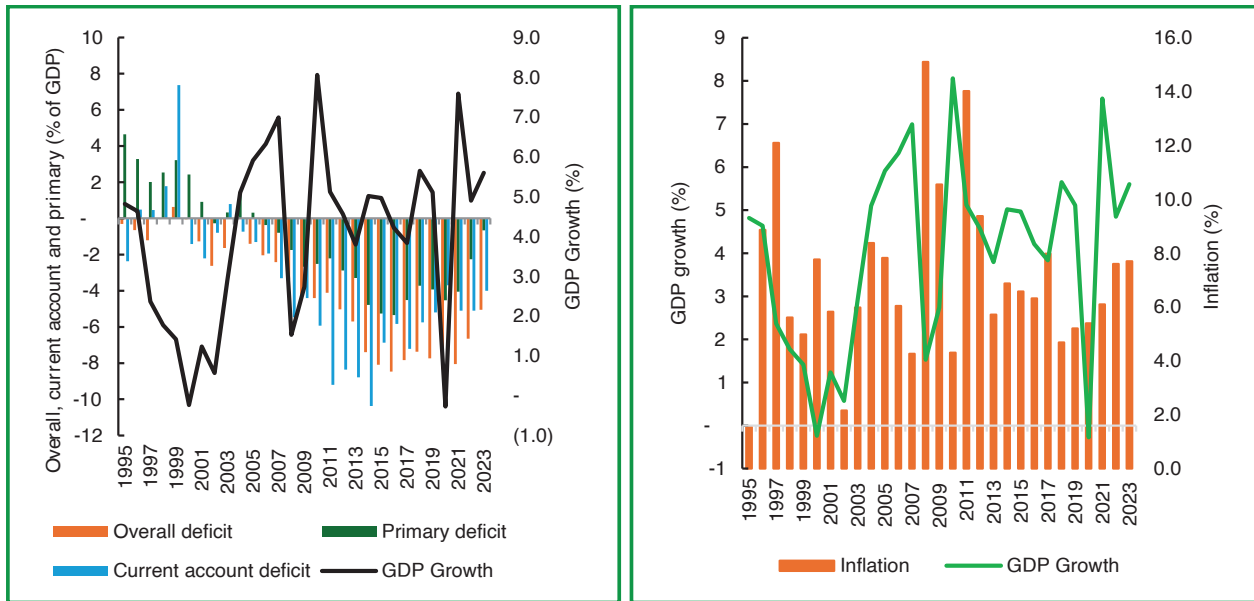
Significant progress has been made in poverty reduction in the last two decades. This progress has been supported by increased productivity, output, and income growth. However, there is a need to accelerate sector-wide productivity growth for an accelerated pace of poverty reduction. The 5.6 per cent economic growth in 2023 was driven by a rebound in agriculture and resilient service activities. After two years of declining growth, agriculture grew by 6.5 per cent due to above-average precipitation in 2023, and the timely provision of production subsidies by the government. In the period, food inflation eased, but the soaring fuel inflation pushed average overall inflation to 7.7 per cent, which was above the government target band of 5 ± 2.5 per cent, putting pressure on the cost of living. The Central Bank of Kenya increased the monetary policy rate by 375 basis points in 2023 to anchor inflationary expectations. During the year, the Kenya shilling depreciated against the dollar, mainly driven by tight global financial conditions. Fiscal consolidation continued in 2023/24, with an overall fiscal deficit projected at 4.9 per cent of GDP compared to 5.6 per cent of GDP in 2022/23, supported by improved expenditure management and revenue enhancement. Public debt increased, attributed to the depreciating exchange rate that put pressure on external debt stock. External accounts improved, as the current account deficit narrowed on the backdrop of improved merchandise trade and resilience performance of secondary income balance, which supported the current account to narrow to 4.0 per cent of GDP in 2023 compared to 5.1 per cent of GDP in 2022. Looking ahead, increased investments that enhance productivity, especially in the agriculture sector are important as this is not only pro-growth but also has moderating effects on food inflation. Proactive monitoring of monetary developments and timely response by the Central Bank of Kenya remains a priority. In the near to medium-term, front-loaded fiscal consolidation efforts will be crucial to mitigate debt vulnerabilities. Strengthening the external sector will require increasing export revenues by exporting value added products, removal of supply-side bottlenecks, facilitating diaspora remittances, and revitalizing the tourism sector.

2.1 Introduction

Macroeconomic stability is a prerequisite for national economic prosperity and sustained productivity growth. As emphasized in BETA and various Medium-Term Plans, macroeconomic

stability, encompassing price stability, fiscal sustainability, and external balance, is instrumental in promoting long-term economic growth. It provides the foundation for a conducive business environment, ensuring predictability, reducing uncertainties, and ensuring optimal resource allocation.

Figure 2.1: Trends in macroeconomic stability indicators (1995-2023)



Data Source: KNBS (Various), Economic Survey

Despite its resilience, the economy has faced a multifaceted confluence of shocks, ranging from the COVID-19 pandemic to climatic shocks, which have implications for productivity and growth. This chapter reviews Kenya’s macroeconomic performance with a focus on productivity and broader economic stability. The analysis covers economic growth, monetary policy framework, and the evolving landscape of the financial sector. Concurrently, this chapter examines fiscal performance, with a particular emphasis on its implications for productivity and sustainable growth. In addition, the chapter reviews the external sector developments. Throughout this chapter, productivity is defined as output (gross value added - GVA) per input of a unit of labour.

2.2 Economic and Productivity Growth

Productivity growth closely tracks economic growth (Table 2.1). Before 2002, productivity growth was low, reflecting the prevailing harsh economic environment. During that period, the economy faced challenges such as the aid embargo of 1997-2000, ethnic clashes in 1997, and the 1997/98 El Nino rains, which

were followed by drought that resulted in power rationing in 2000. These exogenous shocks were accompanied by macroeconomic imbalances that hurt the economy.

The period after 2002 marked the implementation of bold economic and structural reforms under the Economic Recovery Strategy for Wealth and Employment Creation (2003-2007), the development of the Kenya Vision 2030, and the start of implementation of Medium-Term Plans (MTPs). The reforms were geared towards addressing macroeconomic vulnerabilities, structural weaknesses, and improving living standards. In the period 2003-2007, economic growth averaged 5.4 per cent, with productivity growth averaging 5.0 per cent (Table 2.1).

During the MTP I (2008-2012), economic growth averaged 4.4 per cent while productivity growth averaged 7.1 per cent. During MTP II (2013-2017), economic growth averaged 4.4 per cent while productivity growth averaged 8.7 per cent. The substantial productivity growth was mostly driven by a conducive business environment underpinned by improved ease of doing business, a supportive policy environment,

and the implementation of devolution, which supported the movement of labour and capital to areas that previously experienced low-capacity utilization. During the MTP III (2018-2022), economic growth averaged 4.6 per cent and productivity growth averaged 6.4 per cent. While recent developments have shown good prospects, productivity growth is facing some challenges. Low-capacity utilization, limited capital formation, rising domestic prices, and increasing demand for wage hikes have all had an adverse impact. Additionally, the economy has struggled with persistently high unemployment, particularly among the youth. As highlighted in the Labour Force Basic Report 2015/16, youth unemployment was at 8.5 per cent for the period 2015/16, which was higher than the national average of 7.4 per cent.

A strong contribution of agriculture sector productivity growth to aggregate productivity growth is observed over the 1992-2022 period. Importantly, agriculture sector productivity is mainly driven by sector-specific innovations such as improved product mix, use of modern farming technologies, enhanced farmer education, increased access to agricultural finance, increased use of fertilizer, and expanded market access. The services sector had the second largest growth in productivity, emanating from productivity gains within the sector and labour reallocation gains from other sectors. It is observed that whenever productivity growth in agriculture strengthened, inflation declined, thus indicating the importance of agricultural productivity on increased food availability, which in turn results in lower food prices and overall inflation.

Table 2.1: Contribution to productivity growth by broad sectors (1992-2023)

	Broad economic sector	Annual productivity growth (%)	Contribution to productivity growth		GDP growth (%)	Inflation (%)
			Sector-specific factors	Labour movement effects		
1992 - 2002	Agriculture	1.7	1.7	-0.4		
	Industry	2.5	2.5	-0.9		
	Services	4.1	4.1	0.8		
	All	3.3			1.8	14.1
2003 - 2007	Agriculture	3.3	3.2	-0.5		
	Industry	6.3	6.3	-0.9		
	Services	4.9	4.9	0.8		
	All	5.0			5.4	8.4
2008 - 2012	Agriculture	9.9	9.7	-0.6		
	Industry	6.7	6.8	-0.8		
	Services	5.3	5.4	0.9		
	All	7.1			4.4	10.7
2013 - 2017	Agriculture	17.0	16.7	-0.7		
	Industry	4.4	4.5	-0.8		
	Services	4.4	4.5	1.0		
	All	8.7			4.4	6.7
2018 - 2022	Agriculture	8.1	8.0	-0.8		
	Industry	4.6	4.6	-0.7		
	Services	5.3	5.3	1.0		

	All	6.6			4.6	5.8
2022 - 2023	Agriculture	12.6	12.4	-1.2		
	Industry	4.1	4.1	-0.9		
	Services	5.7	5.7	1.1		
	All	7.1			5.6	7.7
1992 - 2023	Agriculture	6.9	6.9	-1.1		
	Industry	4.4	4.5	0.4		
	Services	4.7	4.7	0.9		
	All	5.7			3.7	10.7

Source: Author's computation based on data from KNBS

Note: Productivity is defined as output per worker in Kenya shillings (Ksh)

The post-COVID economic recovery continued with the economy growing by 5.6 per cent in 2023 compared to a growth rate of 4.9 per cent and 7.6 per cent in 2022 and 2021, respectively (Table 2.2). Economic growth in 2023 was supported by improved production in the agriculture sector, which registered a growth of 6.5 per cent following relatively good weather conditions experienced during the period, and the fertilizer subsidy programme that began

towards the end of 2022 under the Bottom-up Economic Transformation Agenda (BETA), which saw subsidized fertilizer prices fall by half. The industry sector growth contracted by 1.9 per cent compared to 3.9 per cent in 2022 while the services sector growth remained stagnant at 7.0 per cent in 2023. However, overall economic activities grew by 5.9 per cent in 2023 compared to 4.7 per cent attained in 2022.

Table 2.2: Economic growth performance (2018-2023)

	2018	2019	2020	2021	2022	2023
1. Agriculture	5.7	2.7	4.6	-0.4	-1.5	6.5
2. Non-agriculture	5.6	5.9	-0.6	9.3	6.2	5.7
2.1 Industry	3.8	3.9	3.3	7.5	3.9	1.9
Mining and quarrying	-4.7	4.3	5.5	18.0	9.3	-6.5
Manufacturing	3.6	2.6	-0.3	7.3	2.6	2.0
Electricity and water supply	3.6	1.7	0.6	5.6	5.5	2.8
Construction	6.1	7.2	10.1	6.7	4.1	3.0
2.2 Services	6.2	6.5	-1.8	9.8	7.0	7.0
Wholesale and retail trade	5.9	5.3	-0.4	8.0	3.5	2.7
Accommodation and food	15.6	14.3	-47.7	52.6	26.8	33.6
Transport and storage;	6.0	6.3	-8.0	7.4	5.8	6.2
Information and communication	7.9	7.0	6.0	6.1	9.0	9.3
Financial and insurance	2.7	8.1	5.9	11.5	12.0	10.1
Public administration	7.9	8.4	7.0	6.0	5.1	4.6
Professional, administrative services	5.4	6.9	6.8	-13.7	7.1	9.5
Real estate	6.5	6.7	4.1	6.7	4.5	7.3

Education	6.8	5.7	-9.2	22.8	5.2	3.1
Health	5.4	5.5	5.6	8.9	3.4	4.9
Other services	4.0	4.9	-19.5	18.9	7.1	3.6
FISIM	3.7	9.5	-1.8	5.3	0.2	2.7
All economic activities	5.6	5.2	0.5	7.2	4.7	5.9
2.3 Taxes	5.9	3.9	-8	11.9	6.7	2.2
GDP growth	5.6	5.1	-0.3	7.6	4.9	5.6

Data source: KNBS (Various), Quarterly GDP Reports

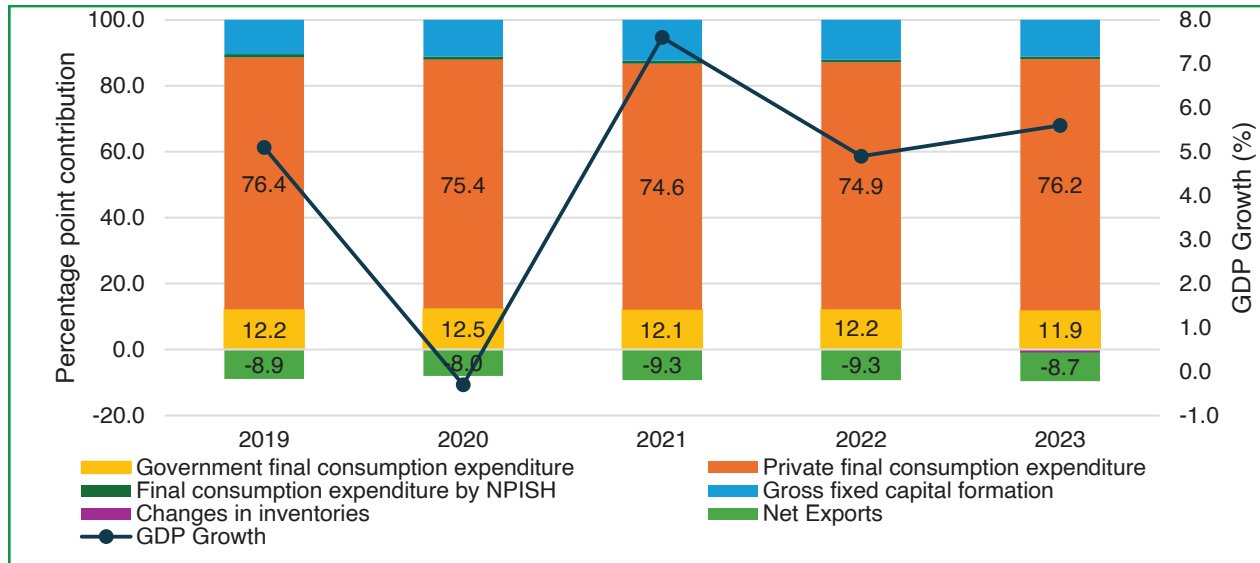
There was mixed performance in the growth of the services sub-sectors. Improved growth performance was observed in accommodation and food services (33.6%), professional and administrative services (9.5%), information and communication (9.3%), real estate (7.3%), transport and storage (6.2%), and health (4.9%). The other service sub-sectors witnessed contracted growth compared to the performance of the previous period. These included financial and insurance (10.1%), mining and quarrying (-6.5%), manufacturing (2.0%), electricity and water supply (2.8%), construction (3.0%), wholesale and retail trade (2.7%), public administration (4.6%), education (3.1%) and other services (3.6%). Performance in the accommodation and food services sub-sector was enhanced by the improved security situation in the country, improved tourism activities, and muted political activities.

The industry sector, which comprises of mining and quarrying, manufacturing, construction, and electricity and water supply activities recorded a slower growth of 1.9 per cent in 2023, compared to 3.9 per cent in 2022. The BETA prioritizes enhancing manufacturing activities

through micro, small, and medium enterprises (MSMEs) as a key for job and wealth creation and driving growth. Manufacturing activities grew at a slower pace by 2.0 per cent in 2023 compared to 2.6 per cent in 2022, attributed to the high cost of importing inputs for the production process.

The aggregate demand reveals that the economy relies on private consumption as a major engine of growth. Private consumption accounted for nearly 76.2 per cent of aggregate demand in 2023. The composition of government expenditure in total expenditure has been largely constant at an average of 12.2 per cent between 2019 and 2023. Empirical studies have shown that government spending is key for enhancing productivity in the economy, especially development spending, which raises capital productivity while spending on social sectors such as education and health raises labour productivity. The implication for this is that higher government consumption of productivity-enhancing sectors can raise aggregate productivity and contribute to improved economic growth.

Figure 2.2: Aggregate demand components (2018-2023)

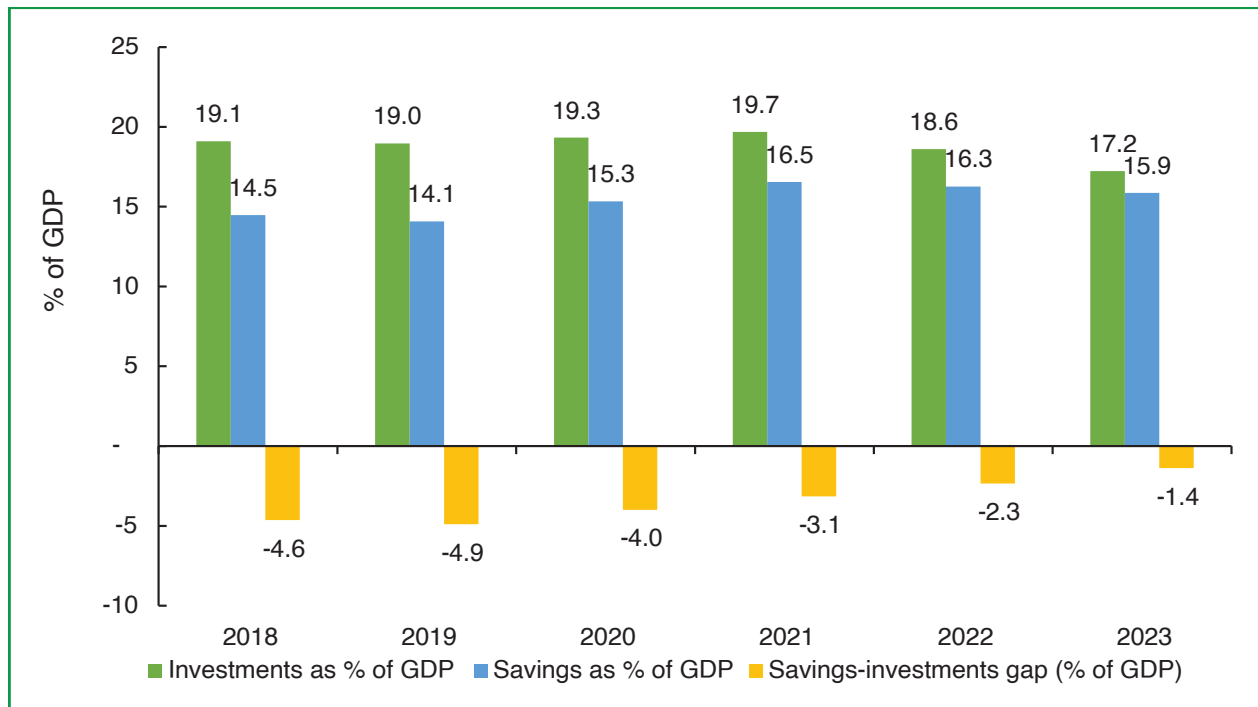


Data source: KNBS (2024), Economic Survey

2.2.1 Savings and investment

The share of domestic savings in GDP displayed volatility, reaching a high of 16.5 per cent in 2021 and demonstrating a need for sustained growth to support savings. Investment activity was robust during the period of analysis, exceeding 19 per cent of GDP between 2018 and 2021. However, it slowed down to 18.6 and 17.2 per cent in 2022 and 2023, respectively. This performance is below the MTP III targets

that projected savings and investment ratios to GDP to rise from 12.4 per cent and 17.5 per cent, respectively, in 2017 to 21.2 per cent and 25.4 per cent in 2022. The savings-investment gap, expressed as a percentage of GDP, exhibited a negative trend throughout the period, indicating a reliance on external financing for investment. The gap narrowed to -1.4 per cent of GDP in 2023, consistent with the MTP III target of -4.2 per cent of GDP, which emphasizes the enhancement of domestic resource mobilization.

Figure 2.3: Gross investments and savings as % of GDP, (2016-2023)

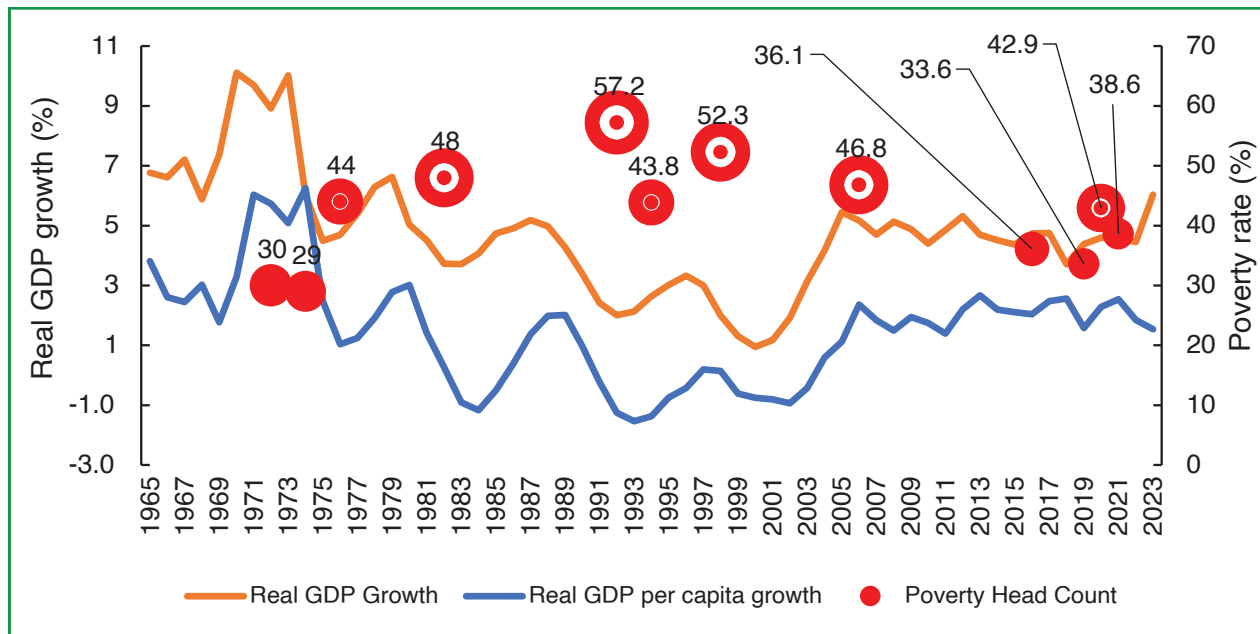
Data source: KNBS (Various), Economic Survey

2.3 Economic Growth and Poverty Reduction

The link between economic growth and poverty reduction was explored. Economic growth is expected to generate adequate and well-paying employment opportunities, which are in turn expected to lead to poverty reduction through

savings and investment/capital accumulation. Therefore, a high rate of economic growth is considered one of the most effective strategies to reduce poverty, especially when this growth is inclusive. Figure 2.4 presents the trends in GDP growth, GDP per capita growth, and poverty trends.

Figure 2.4: Real GDP growth, GDP per capita growth, and poverty rates (1965-2023)



Data source: KNBS (Various), Economic Survey

The real GDP and per capita GDP growth trajectory over the past six decades is marked by periods of significant expansion and contraction. The early years after independence, with a focus on state-led development (1965-1978) witnessed a promising start, when the average growth reached 7.1 per cent with per capita GDP rising by an average of 3.3 per cent. This robust economic performance coincided with low poverty rates, suggesting the effectiveness of these initial development efforts. However, the subsequent two decades (1979-2001) witnessed a period of stagnation. Economic growth stagnated at approximately 3.4 per cent, with per capita GDP experiencing minimal growth, averaging 0.1 per cent. This economic slowdown coincided with a rise in poverty rates, peaking at 57.2 per cent in 1992. The stagnation was underpinned by a confluence of factors, including external economic shocks, policy missteps and challenges, and internal conflicts. This period underscored the critical need for economic reforms and a shift towards sustainable and inclusive growth strategies.

Since the turn of the millennium (2000-2023), the growth story has been more encouraging, punctuated by multi-party democracy and increased focus on economic reforms. Figure 2.4 reveals a significant acceleration in real GDP growth averaging 4.5 per cent and steady growth in per capita GDP averaging 2.0 per cent. This period reflects successful economic reforms, improved governance, and increased foreign direct investment. Significant progress in poverty reduction has been achieved in the last two decades. Poverty levels dropped from 57.2 per cent in 1992 to 46.8 per cent in 2006 and to 36.1 per cent in 2016 and further down to 33.6 per cent in 2019, meaning that poverty dropped by 0.8 percentage points per year between 1992 and 2019. Notably, the economic growth rate is commensurate with real GDP per capita growth, which means that enhanced productivity of economic activity is crucial in improving economic welfare as depicted by improved GDP per capita and poverty declines.

Over time, the country has witnessed a reduction in poverty and a decline in deprivation rates. Whereas multidimensional and monetary poverty were at 68.2 per cent and 45.7 per cent, respectively, in 2009, these rates declined significantly in 2019 to 50.0 per cent and 33.3 per cent, respectively, at the national level. Deprivation incidences have also declined over time. For instance, recent data reveals that deprivation incidence in economic activity decreased from 74.1 per cent in 2009 to 55.4 per cent in 2019, among persons aged 26-34 years, while the deprivation incidence in secondary school education among children aged 14-17 years dropped from 49.7 per cent in 2009 to 29.0 per cent in 2019. These positive trends in poverty indicators underscore the importance of further upscaling the productivity of economic inputs, which is known to translate to improved growth and reduced poverty outcomes. If economic growth is to lead to poverty reduction, it should facilitate the participation of many of its beneficiaries in economic activity and shared prosperity. Given that the BETA aims at targeting participation in economic activity by the population at the

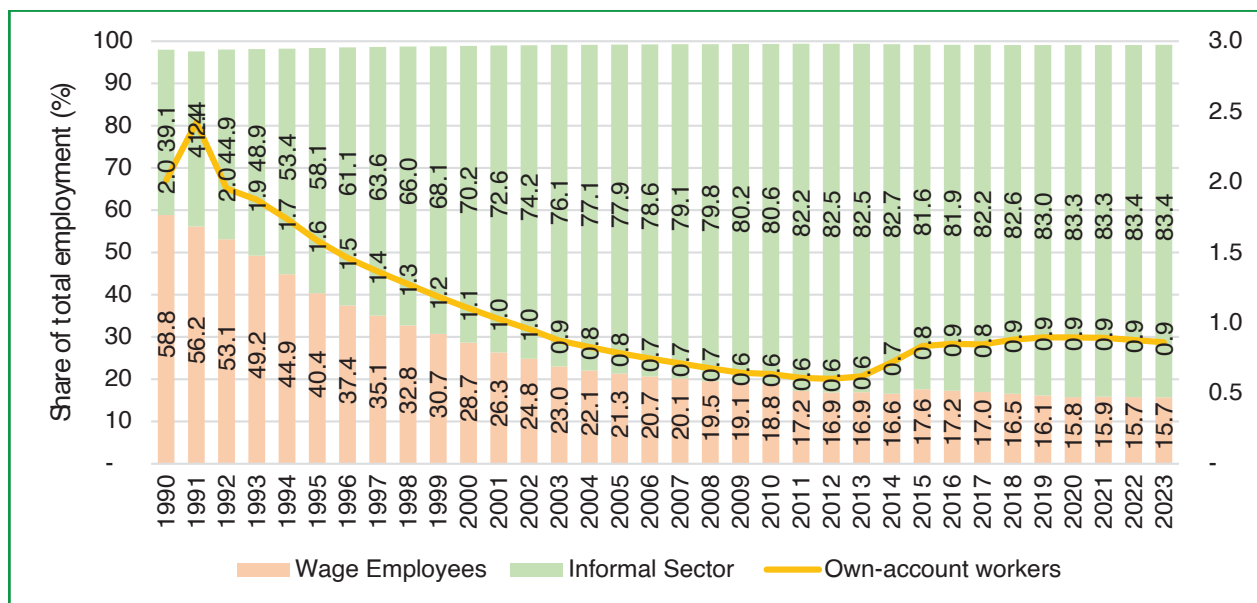
bottom of the pyramid, this is an avenue for enhancing inclusive growth and economic transformation for Kenya.

2.4 Labour Market, Employment, and Growth

2.4.1 Labour market structure, employment, and wages

The labour market has been dominated by informal sector employment since 1994. Before then, the workforce was dominated by formal jobs, accounting for slightly over half of the total workforce. However, over the years, informal jobs have increased, accounting for over 80 per cent of total employment since 2009. At the end of 2022, informal jobs accounted for 83.4 per cent of total employment. The tilting of the labour market towards informal employment reflects the inability of the formal sector to adequately generate jobs for the increasing labour force. Most of the informal economy jobs are characterized by higher ratios of casualization, are more precarious, and exhibit lower productivity and wages.

Figure 2.5: Shares of Kenya’s total employment (%) (1990-2023)



Data Source: KNBS (Various), Economic Surveys

In 2023, an estimated 3.14 million persons were engaged in wage employment. This compares to 1.5 million, 1.7 million, and 2.1 million persons engaged in wage employment in 1992, 2002 and 2022, respectively. Rapid growth in wage employment has mainly been driven by growth in private sector employment, which expanded more than the public sector. In

1992, the private sector accounted for 49.7 per cent of total wage employment. This increased steadily to 61.2 per cent in 2002, 69.5 per cent in 2012 and slightly declining to 68.9 per cent in 2022. The progressive dominance of the private sector in wage employment demonstrates the need to create an enabling environment for the private sector to create more jobs.

Table 2.3: Estimated sectoral real average wage earnings per employee, 2013 and 2022

	2013		2023		Divergence from public wages (%)	
	Private	Public	Private	Public	2013	2023
Agriculture, forestry, and fishing	156.63	249.22	405.48	512.01	-37.15	-20.81
Mining and quarrying	213.34	232.03	746.14	544.20	-8.06	37.11
Manufacturing	229.38	539.07	664.12	1055.65	-57.45	-37.09
Electricity, gas, steam, and air conditioning supply	806.41	882.38	2326.01	1501.47	-8.61	54.91
Construction	339.39	413.42	833.28	872.65	-17.91	-4.51
Wholesale and retail trade	352.04	652.16	1007.56	1146.03	-46.02	-12.08
Transportation and storage	694.54	929.87	1691.92	2432.15	-25.31	-30.44
Information and communication	521.15	462.19	1289.89	925.29	12.76	39.40
Financial and insurance activities	1047.22	1111.88	2281.80	2115.29	-5.82	7.87
Education	585.87	340.50	1069.45	734.11	72.06	45.68
Human health and social work activities	442.42	655.51	1217.63	1845.10	-32.51	-34.01
Arts, entertainment, and recreation	368.12	476.63	866.33	921.00	-22.77	-5.94

Source: Author's computation based on data from KNBS (Various), Economic Survey

Note: The negative sign indicates that the private sector wage is lower than the public sector wage

Wage earnings vary across sectors. Higher earnings are observed in financial and insurance activities while agriculture, forestry, and fishing activities attract the lowest earnings despite the sector contributing the highest to GDP and employment in 2023. Earnings in the public sector are relatively higher than in the private sector for most of the selected sectors, even though in the last 10 years the gap has narrowed across most sectors as indicated in Table 2.3. Public workers in the health sector and the manufacturing sector receive higher wages than their private sector counterparts. In

the electricity, gas, steam, and air conditioning supply, average wages in the private sector are over 54 per cent higher than those of their counterparts in the public sector. Likewise, in the education sector, the private sector employees' real average earnings are nearly a third more than that of public sector employees. The wage disparity in favour of the public sector could be the result of different allowances that public sector workers receive above their basic pay.²

² See KIPPRA Policy Paper No. 5 2013, <https://repository.kippra.or.ke/bitstream/handle/123456789/2915/policy%20paper%2005.pdf?sequence=1&isAllowed=y>

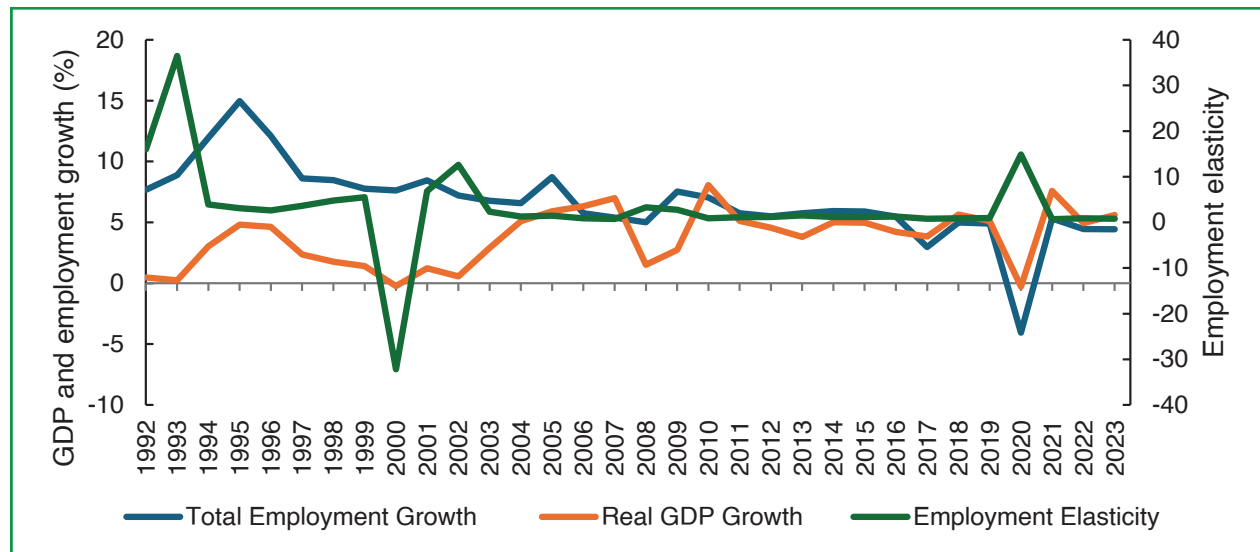
2.4.2 Employment and inclusive growth

Productive employment is one of the instruments for sustainable and inclusive growth.³ Employment elasticity of growth was estimated to establish whether economic growth has been effective in creating employment and reducing poverty. In the 1990s, employment elasticity was erratic but stabilized in the 2000s.

³ See Arezki et al. (2012), Chapter 8 on What is Inclusive Growth by Elena Ianchovichina.

It rose from 6.9 in 2001 to 12.6 in 2002 before stagnating at an average of 1.3 between 2003 and 2022, excluding 2020 when the COVID-19 pandemic impacts resulted in shrinkage of both growth and employment. In 2023, the employment elasticity was at 0.8, implying that a one percentage increase in the country's GDP would trigger a 0.8 percentage point increase in employment in the economy.

Figure 2.6: Growth-employment elasticity (1992-2023)



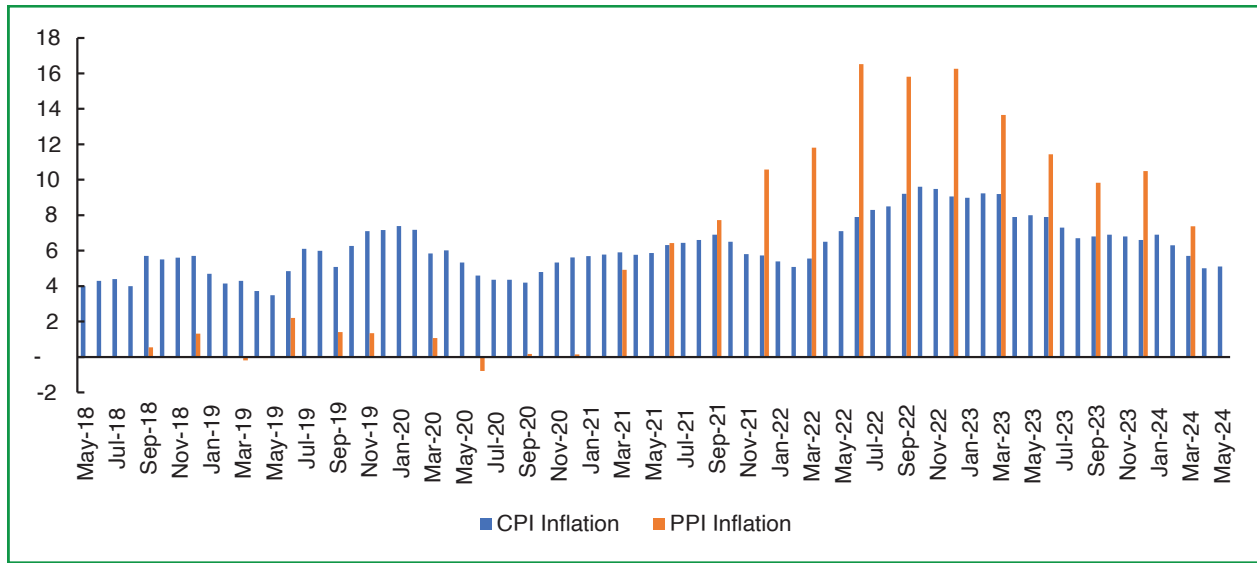
Source: Author's computation based on data from KNBS (Various), Economic Survey

2.5 Consumer and Producer Price Inflation

Inflation rates moderated in 2023 but with underlying pressures. Headline inflation rate fell to 6.9 per cent in July 2023 after drifting above the government target band for about 13 months since May 2022 (Figure 2.7). The relaxed inflation pressures were aided by the improved supply of food crops due to ample

rainfall received during the period and easing of global edible oil prices and the general decline in international commodity and oil prices. Food inflation fell from 15.5 per cent in September 2022 to 7.9 per cent in January 2024, with an increased supply of food products following adequate moisture during the planting season leading to a drop in prices of most food products such as potatoes, tomatoes, cowpeas, and cabbages.

Figure 2.7: Trends in consumer and producer price inflation (2018-2024)



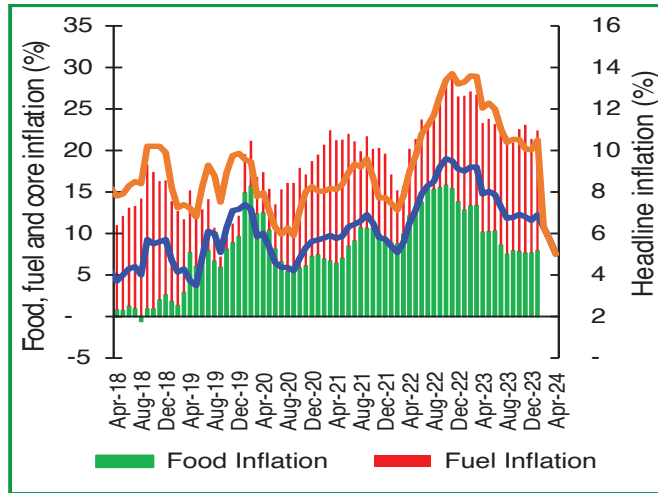
Data source: KNBS (Various), Monthly Consumer Price Reports and Quarterly Producer Price Reports

The declining food inflation moderated inflation pressures emanating from fuel inflation, which increased to 14.5 per cent in January 2024 from 12.9 per cent in June 2022, reflecting the removal of most subsidies on fuel products, the 8.0 percentage point increase in fuel VAT, and the impact of exchange rate depreciation. Core inflation remained low and stable, reflecting muted demand pressures in the economy.

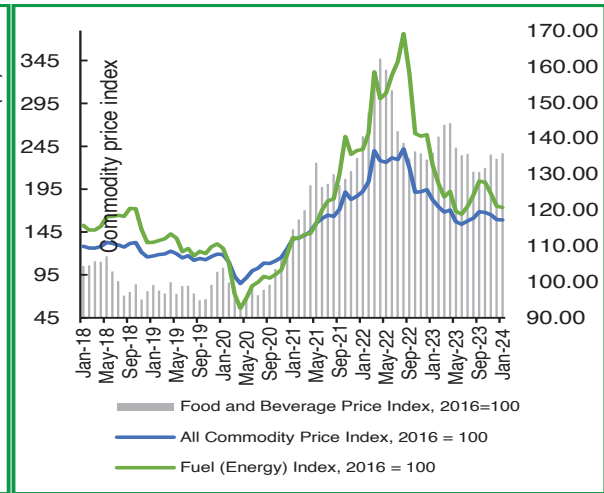
Despite these developments, inflation concerns linger on the back of voluntary oil production cuts by the OPEC+ oil producers, which are likely to push prices upwards in the near term. Further, the ongoing geopolitical conflicts in the Middle East and Eastern Europe that continue to disrupt supply channels could potentially be transmitted to local prices.

Figure 2.8: Inflation Trends (2018-2024)

Domestic inflation components



Global commodity prices



Data Source: Central Bank of Kenya, Monthly Economic Indicators

Data Source: IMF Commodities Prices database

Figure 2.8 shows that consumer price inflation and producer price inflation tend to move together. Normally, a causality that runs from the producer price index (PPI) to the consumer price index (CPI) exemplifies the cost-push nature of inflation while the opposite indicates the presence of demand-pull inflation. The analysis in Box 2.1 reveals that producer price inflation causes consumer price inflation, meaning that a rise in producer prices through the cost of inputs causes a rise in consumer inflation, ascertaining the trends shown in Figure 2.8. This implies that when the supply-side factors are addressed through enhanced productivity, this would result in lower inflation pressures.

Box 2.1: Granger causality for producer price and consumer price inflation

Analysis of the causality between CPI and PPI for Kenya for the period January 2012–December 2023 using quarterly data was conducted. The results shown in the table below reveal the presence of supply-induced inflation, which causes consumer price inflation. It implies that measures aimed at lowering the cost of living should address supply-side factors that influence producer costs. Importantly for Kenya, where food occupies the largest share of consumer prices, enhancing agricultural productivity is paramount for reducing producer price inflation, which in turn results in lower consumer prices in the economy.

Equation	Chi ²	Df	Prob > Chi ²
Consumer price	3.03	3.00	0.39
Producer price inflation	9.79	3.00	0.02

H₀: Prob>0.05 no causality. Note: *Causality Granger’s sense statistically significant

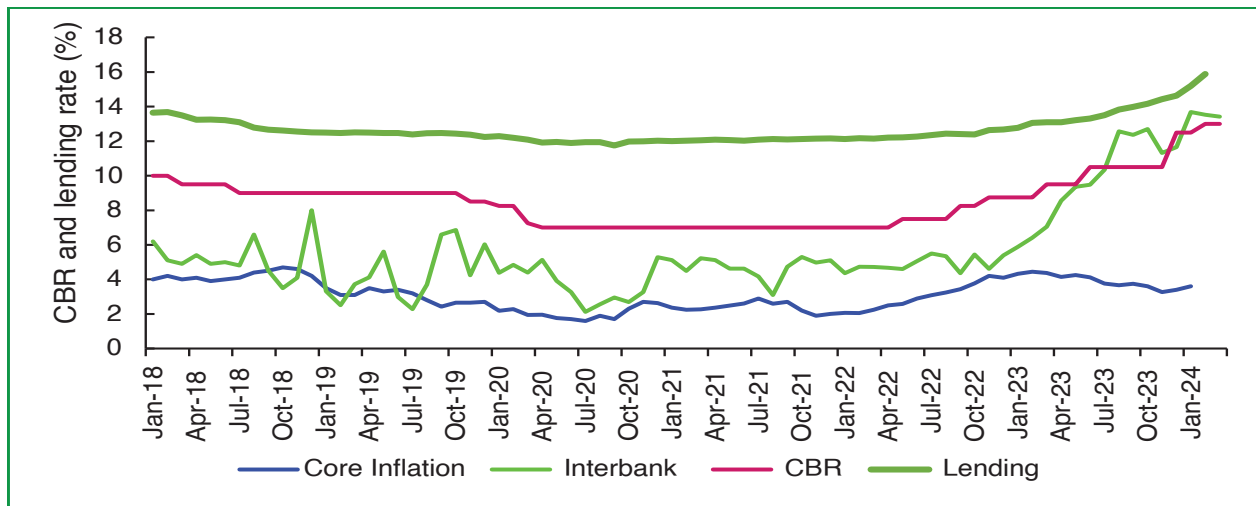
Monetary Policy and Financial Sector Development

2.6.1 Monetary policy stance and interest rates developments

The Central Bank of Kenya (CBK) tightened the monetary policy stance since 2022, increasing the benchmark rate by cumulative 600 basis points from 7.0 per cent in April 2022 to 13.0

per cent in February 2024. The impact of the swift tightening of the monetary policy stance is observable in two aspects. First, the headline inflation returned and remained within the target range (Figure 2.9). Second, core inflation declined from a high of 4.5 per cent in February 2023 to 3.6 per cent in January 2024, reflecting the muted demand pressures in the economy consistent with the stance of monetary policy.

Figure 2.9: Policy stance, interest rates, and core inflation (2018-2024)



Data Source: Central Bank of Kenya (Various), Monthly Economic Indicators

In August 2023, the CBK introduced a new interest rate corridor around the policy rate to guide the overnight interbank rate. The corridor was set at CBR \pm 2.5 per cent. Consequently, the monetary policy operations are aimed at ensuring that the interbank rate, as an operating target, closely tracks the CBR.

The movement in interbank rate shows a significant increase from a low of 2.1 per cent in July 2020 to a high of 12.5 per cent in August 2023 and 13.7 per cent in January 2024. However, with the introduction of the interest rate corridor, it is evident that interbank rates have moderated and are tracking the CBR. In 2023, the interbank rate averaged 9.8 per cent compared to 4.9 per cent in 2022, consistent with monetary policy tightening and reflecting

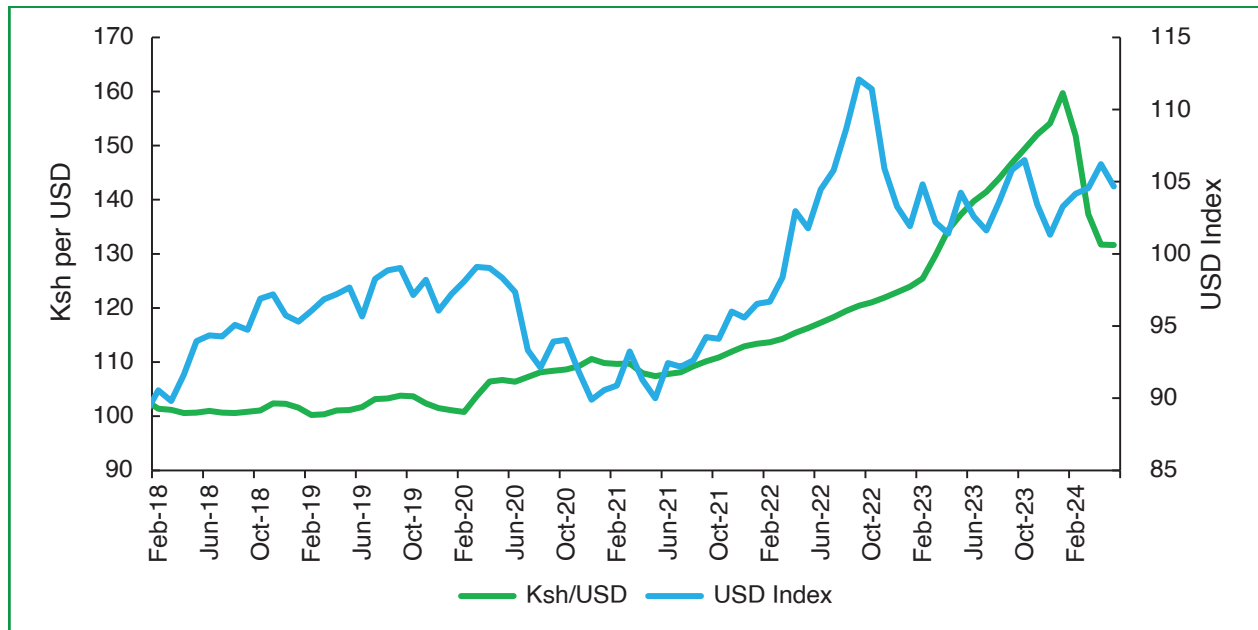
tight liquidity conditions among banks in 2023. Similarly, lending rates increased in 2023, averaging 13.6 per cent compared to 12.3 per cent in 2022, indicating an increased cost of credit in 2023.

The Kenya shilling weakened against the US dollar at a faster pace in 2023. By the end of December 2023, the shilling had depreciated by about 25.3 per cent against the US dollar from its level in December 2022. This compares to 8.9 per cent depreciation recorded between December 2021 and December 2022 (Figure 2.10). The weakening of the shilling for most of 2023 was due to the continued strengthening of the dollar in global markets due to the tightening of monetary stance by the USA, the increased demand for dollars domestically against the

backdrop of low exports, and increased jitters by investors over Kenya's ability to repay the Eurobond that was due in June 2024. However, in mid-February 2024, the shilling gained significantly against the dollar from Ksh 160.8 per US dollar on 25th January 2024 to Ksh 144.1 per US dollar on 23rd February 2024. The strengthening of the shilling came

after the part buyback of the Eurobond by the government amounting to US dollar 1.5 billion. This eased fears among investors, attracting inflows of the dollar from global lenders and investors. Additionally, the IMF Board approved the disbursement of US dollar 684.7 million to Kenya under the EFF/ECF arrangements.

Figure 2.10: Exchange rate movements (2018-2024)



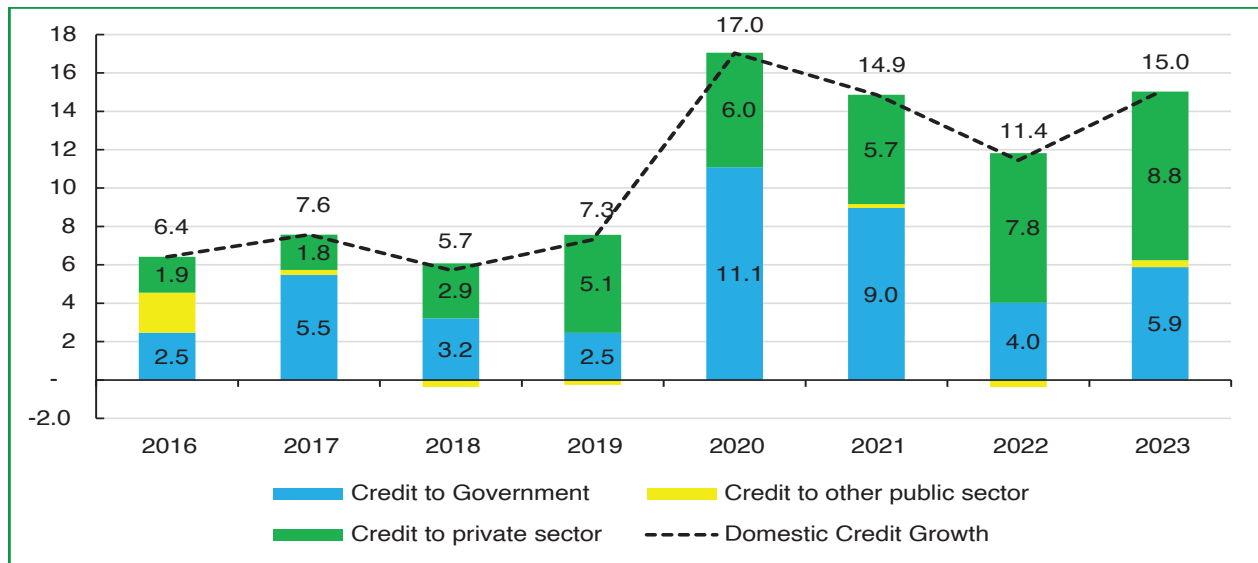
Source: CBK and <https://www.investing.com/currencies/us-dollar-index-historical-data>

2.6.2 Domestic credit developments

Domestic credit in the past six years has exhibited an episode of subdued credit and a period of increased credit growth. Over the period 2016-2019 and with interest capping, domestic credit growth averaged 6.8 per cent compared to an average of 14.4 per cent realized in the period after the interest rate capping was repealed (2020-2022). In addition is the accommodative monetary policy stance that prevailed during the 2020-2021 period, which was aimed at supporting growth during the pandemic period and support post-COVID recovery.

Consistent with the rebound in economic growth in 2023 and improved consumer sentiments on economic prospects, domestic credit grew by 15.0 per cent in 2023 compared to 11.4 per cent in 2022. These developments happened on the backdrop of rising interest rates characterized by a high inflation rate and an upward adjustment to the benchmark lending rate by the CBK. Growth in the private sector credit from the banking system remained resilient, partly reflecting improved business conditions and demand for working capital. Growth in the private sector credit is expected to remain relatively stable, supported by, among other factors, resilient economic activity, and the implementation of the Credit Guarantee Scheme for the vulnerable MSMEs.

Figure 2.11: Contribution to annual growth in domestic credit (%) (2016-2023)

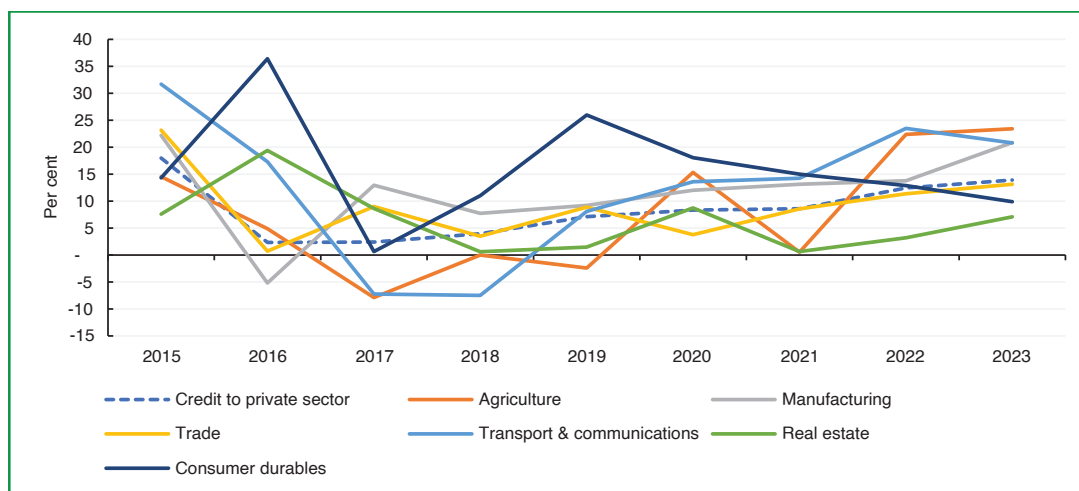


Data Source: Central Bank of Kenya (Various), Monthly Economic Indicators

Credit extended to the private sector grew by 13.9 per cent in 2023 compared to 12.5 per cent in 2022, amidst the harsh economic environment posed by the convergence of both domestic and external shocks. Private sector credit growth contributed 8.8 percentage points to domestic credit growth in 2023, compared to a contribution of 7.8 percentage points in 2022 (Figure 2.11). The increase in credit to the private sector reflects increased credit uptake by private entities either for business expansion or

to cope with the turbulent business environment in 2022 and 2023. Further, credit expansion to the private sector was broad-based, across all sectors. Specifically, credit to agriculture grew by 23.4 per cent, manufacturing 20.9 per cent, trade sector 13.1 per cent, and real estate 7.1 per cent (Figure 2.12). Credit to transport and communication grew by 20.8 per cent while credit to consumer durables grew by 9.9 per cent.

Figure 2.12: Sectoral credit growth (%) (2015-2023)



Data source: Central Bank of Kenya (Various), Monthly Economic Indicators

Following Guerra (2017), Andersson et al. (2016), and Chisasa and Makinda (2015), the link between private sector credit and productivity was explored. Granger causality test was employed to establish if private sector credit is a useful indicator of changes in productivity in subsequent periods (Box 2.2). Given the empirical findings that private sector credit Granger-caused productivity, the interventions

by the government to enhance access to credit and financial inclusion are likely to pay off in terms of productivity enhancement. The BETA and MTP IV have provided various measures to support financial inclusion, including the Hustler Fund, credit guarantee schemes, green financing, the Uwezo Fund, Women Enterprise Development Fund, and Youth Enterprise Development Fund programmes.

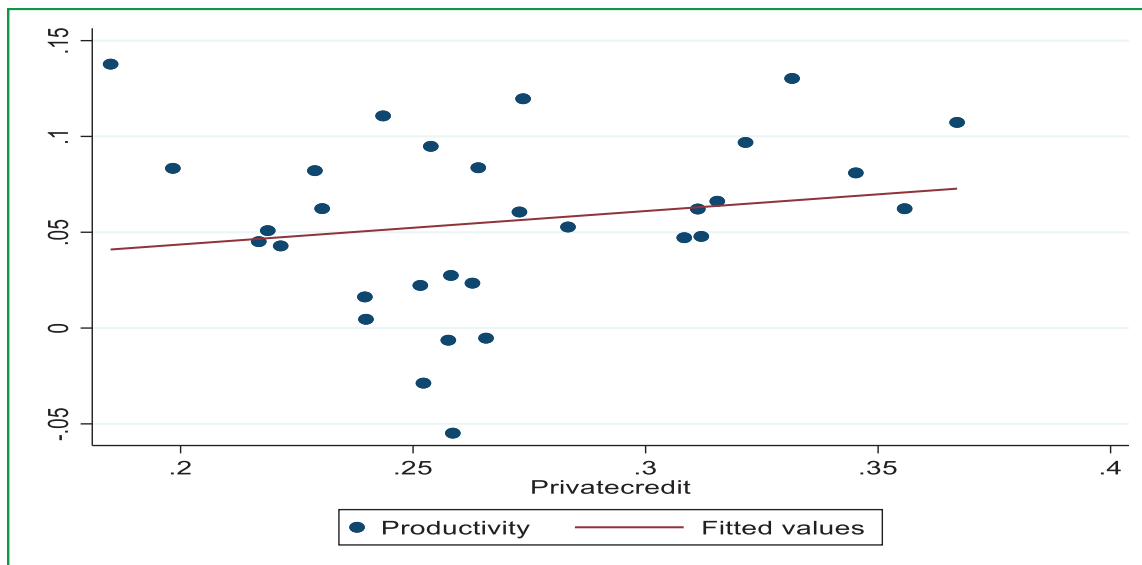
Box 2.2. Granger causality and correlation analysis for private sector credit and productivity

The evaluation of the causality between the private sector credit and productivity was established through the estimation of a Vector Autoregressive (VAR) model. The main results indicate that from 1992 to 2022, private sector credit growth has Granger-caused productivity; however, there is no evidence of causality of productivity on private sector credit.

Dependent variable: productivity				Dependent variable: Private sector credit			
Causal variable	Chi-sq	df	Prob.	Causal variable	Chi-sq	df	Prob.
Private sector credit	13.2	6	0.04*	Productivity	4.9	6	0.56

H_0 : Prob>0.05 no causality. Note: *Causality Granger’s sense statistically significant

These results are relevant and could be explained by various factors. For instance, the private sector may demand credit for the enhancement of its labour productivity in both existing and new firms. This is because lower labour productivity negatively affects the value of a firm’s assets. Increased credit supply may affect labour productivity through investment in human capital, investment in research and development for technological advancement, and investment in physical capital to improve the capital-labour ratio. Investments in human capital enhance labour productivity through education and training and enable labour to work and acquire skills and competencies on the job experience.



Analysis of the correlation between private sector credit and productivity revealed a moderate positive correlation between domestic credit growth and productivity, indicating that increasing domestic credit has a positive effect on productivity growth.

Source: Author’s calculations

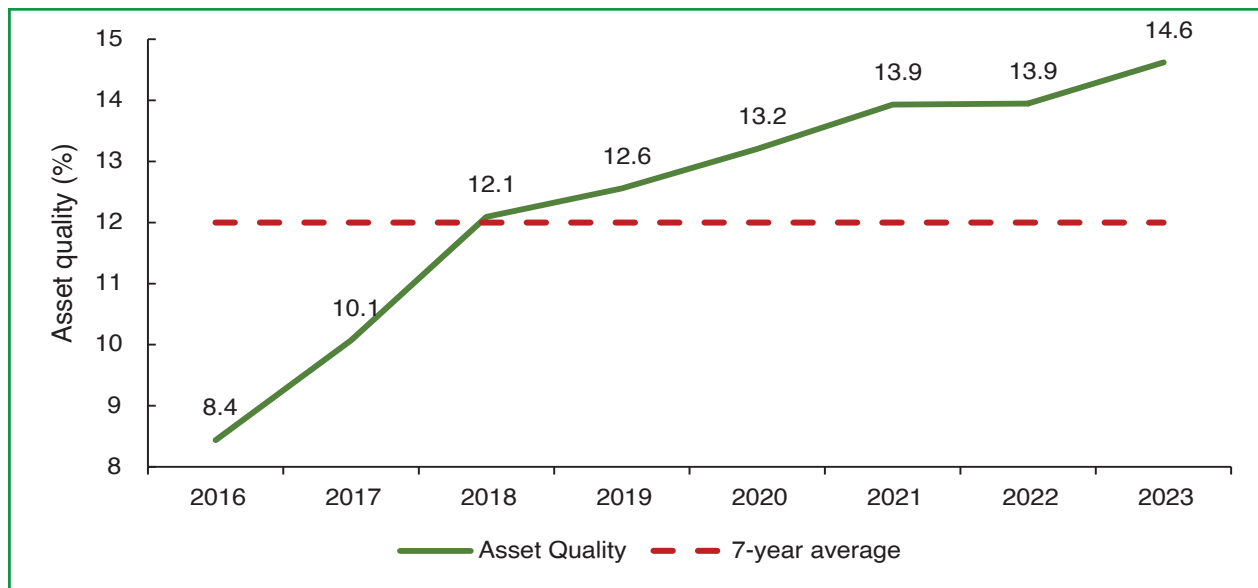
2.6.3 Financial and banking sector performance

The banking sector remained robust as banks remained highly profitable and well-capitalized. However, banks face elevated levels of non-performing loans. The aggregate balance sheet of the banking sector increased by 11.7 per cent to Ksh 7,724.9 billion in December 2023 from Ksh 6,596.9 billion in December 2022. Gross loans increased by 27.4 per cent during the period, reflecting improved loans granted to individual borrowers largely in agriculture, manufacturing, transport and communication, real estate, and consumer durables. Meanwhile, total deposits in the banking sector increased by 22.9 per

cent to Ksh 5,812.1 billion in December 2023 from Ksh 4,655.5 billion in December 2022.

Despite the banking sector being robust, there are concerns about the asset quality. Asset quality measured by the ratio of non-performing loans (NPLs) and gross loans deteriorated to 14.8 per cent in December 2023 from 13.9 in December 2022. The deteriorating asset quality reflects the tight macroeconomic environment following the tightening of monetary policy that began in May 2022. High levels of NPLs may constrain future credit advances to the private sector, particularly micro, small, and medium enterprises as banks perceive them as risky, eventually limiting economic productivity.

Figure 2.13: Movements in banking sector asset quality (%) (2016-2023)



Data Source: Central Bank of Kenya (Various), Monthly Economic Indicators

Amid the tight macroeconomic environment, the banking sector exhibited resilience, as reflected in capital adequacy and liquidity ratios, which remained within the statutory limits. The capital adequacy ratio, measured by the ratio of total banking sector capital to total risk-weighted assets, was 18.3 per cent in December 2023 compared to 19.0 per cent in December 2022, remaining above the minimum statutory limit of 14.5 per cent. Equally, the liquidity ratio,

measured as the ratio of liquid assets to short-term liabilities was 51.0 per cent in December 2023 compared to 50.8 per cent in December 2022, staying above the minimum statutory ratio of 20.0 per cent. Despite the marginal decline in capital adequacy and marginal increase in liquidity ratio, the banking sector remained robust, with the ability to provide the necessary liquidity to the private sector and boost economic productivity.

2.7 Fiscal Trends and Debt Developments

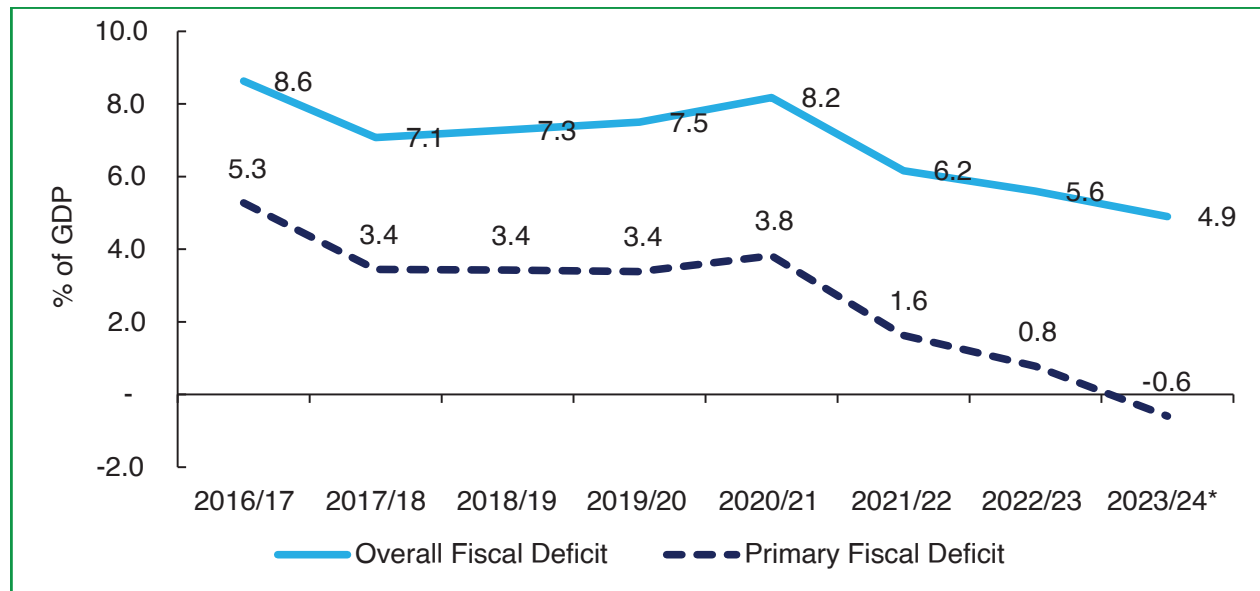
2.7.1 Fiscal trends

The fiscal policy stance of the national government is to sustain the fiscal consolidation path. This will slow down public debt accumulation, which has been a concern. In 2022/23, fiscal consolidation continued, supported by slightly lower public spending despite a decline in revenue. The overall fiscal deficit was 5.6 per cent at the end of 2022/23 and is expected to narrow to 4.9 per cent of GDP at the end of 2023/24 (Figure 2.14). Similarly, the primary balance had a deficit of 0.8 per cent of GDP in 2022/23, compared with an expected surplus of 0.6 per cent of GDP in 2023/24 (Figure 2.14). This fiscal outcome is supported by the slightly lower recurrent

primary expenditures during the year, which more than compensated for the increase in capital expenditure and interest payments.

Total revenue as a share of GDP declined in 2022/23 due to the harsh business environment following a confluence of economic shocks that affected output and business activity in 2022. Total revenue declined from 17.3 per cent of GDP in 2021/22 to 16.5 per cent of GDP in 2022/23 on the backdrop of economic slowdown (Figure 2.15). The key drivers of revenue were income and consumption-based taxation. The expected improvement in revenue collection was driven by ongoing policy measures to boost collections of domestic taxes, rebound in economic growth following improvements in rainfall in 2023, and renewed business optimism in the economy.

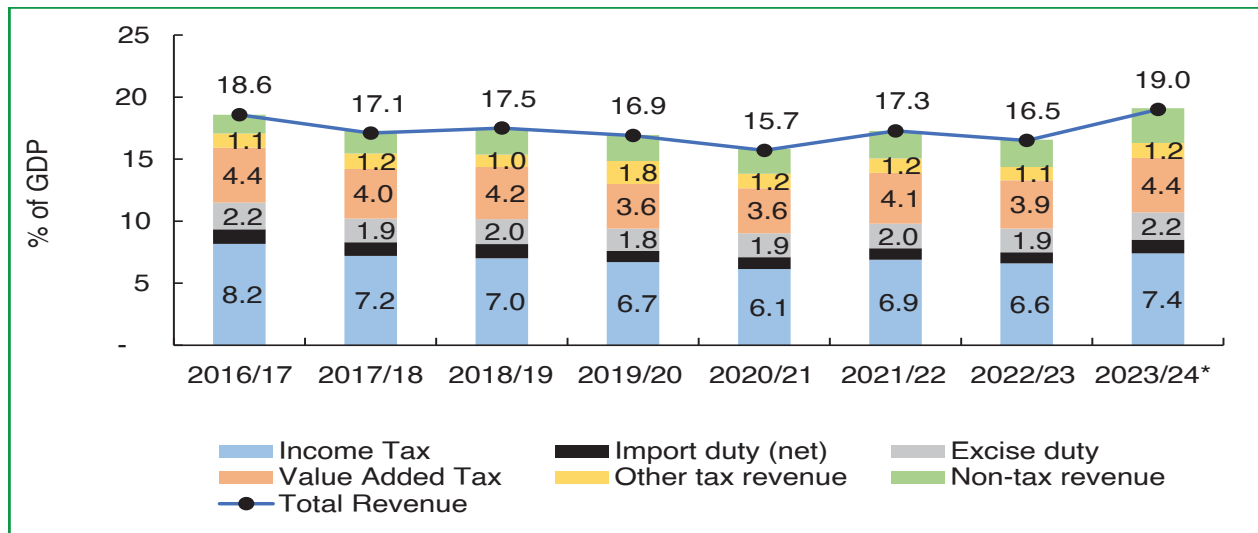
Figure 2.14: Fiscal trends (2016/17-2023/24)



Data source: National Treasury and Economic Planning (Various), Quarterly Economic and Budgetary Review (QEBR) and Budget Policy Statement (BPS)

Note: Figures are actuals unless specified as provisional (*)

Figure 2.15: Trends in domestic revenues (2016/17-2023/24)

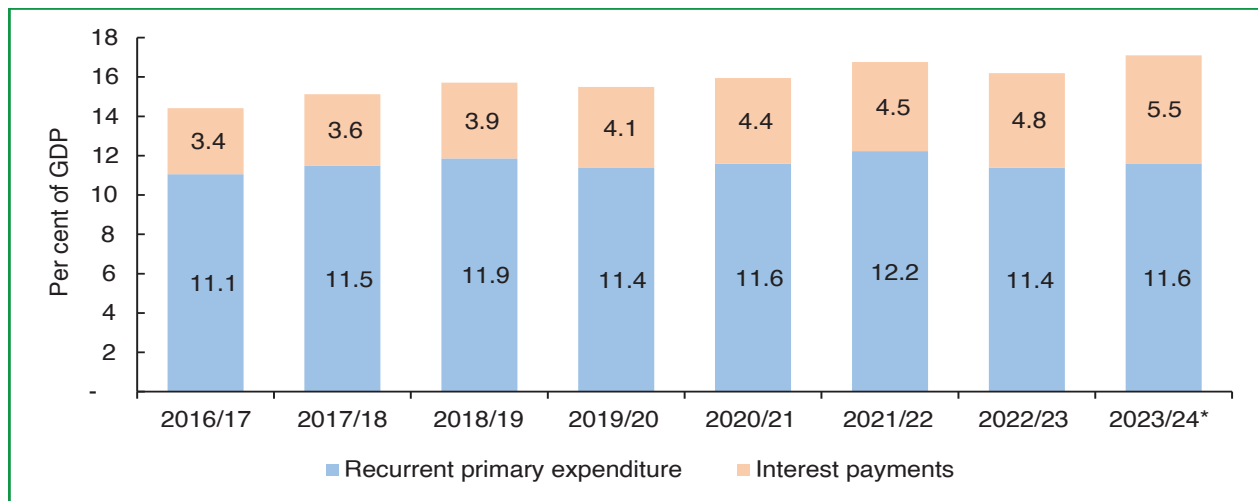


Data source: National Treasury and Economic Planning (Various), Quarterly Economic and Budgetary Review (QEBR) and Budget Policy Statement (BPS)

Note: Figures are actuals unless specified as provisional (*)

Meanwhile, total expenditure declined from 23.9 per cent of GDP in 2021/22 to 22.6 per cent of GDP in 2022/23. A similar trend was observed in major expenditure categories as recurrent and development spending declined. The trend is expected to reverse as revenue mobilization efforts grow to finance key development projects in the BETA and MTP IV.

Figure 2.16: Trends in recurrent expenditure (%) (2016/17-2023/24)



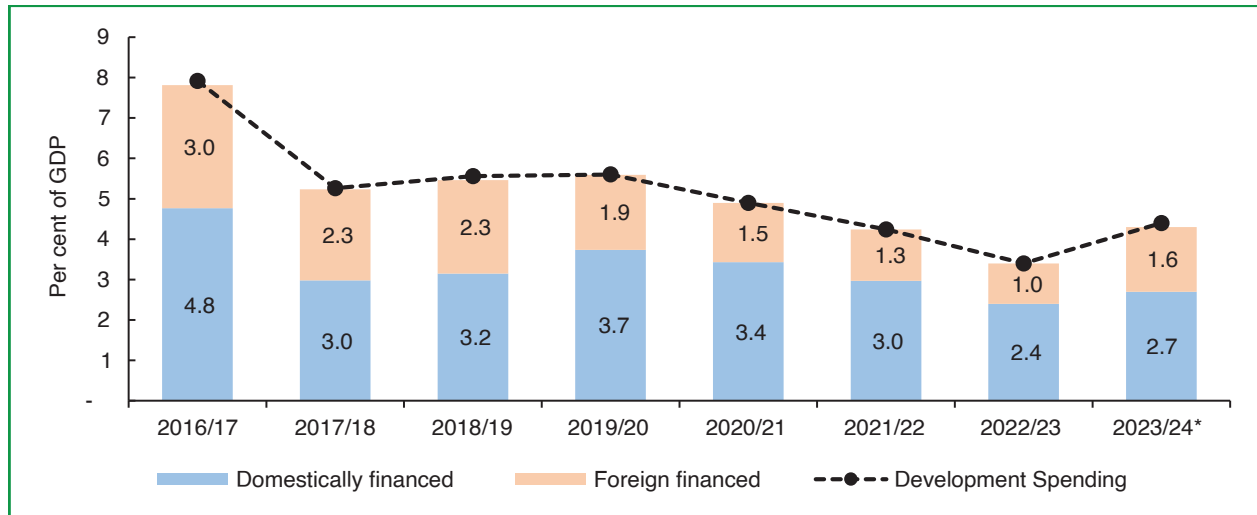
Data source: National Treasury and Economic Planning (Various), Quarterly Economic and Budgetary Review (QEBR) and Budget Policy Statement (BPS)

Note: Figures are actuals unless specified as provisional (*) or budget estimates (BE)

Recurrent expenditure accounted for the largest share of government spending at 15.9 per cent of GDP while development spending was about 3.4 per cent in 2022/23. The large recurrent spending implies that limited resources are available for investment in capital programmes that are key to improving productivity. Spending priorities have shifted from development to more

recurrent. Development spending declined to 3.4 per cent of GDP in 2022/23 from about 7.8 per cent in 2016/17 (Figure 2.17), as a result of the pausing or cancellation of several public investment projects due to limited revenue. With the ongoing initiatives under BETA, development expenditure in 2023/24 is targeted at 4.3 per cent of GDP.

Figure 2.17: Trends in development expenditure (%) (2016/17-2023/24)



Data source: National Treasury and Economic Planning (Various), Quarterly Economic and Budgetary Review (QEBR) and Budget Policy Statement (BPS)

Note: Figures are actuals unless specified as provisional (*) or budget estimates (BE)

2.7.2 Pending bills

Government pending bills remained high. At the end of December 2023, the total national government pending bills amounted to Ksh 539.9 billion or 3.3 per cent of GDP. This comprised Ksh 448.4 billion and 91.5 billion owed by State corporations, ministries/state departments, and other government agencies. A large portion of the State corporations' pending bills are in respect of payments to projects/contractors and suppliers.

At the county level, total pending bills amounted to Ksh 156.3 billion or an estimated 1.0 per cent of GDP. For counties, about 98.8 per cent of pending bills were accrued by the county

executive, with over 60 per cent in respect of development spending. The pending bills limit the execution of budgets, thereby affecting service delivery. Since most pending bills are owed to suppliers and contractors who provide services to the government, accruing high levels of pending bills reduces the flow of cash to the private sector, leaving a lot of firms without the cash to meet their financial obligations, and leading to increased non-performing loans (NPLs).

Rising and persistent pending bills are a threat to the survival of the private sector, particularly primary firms that trade with both levels of government. These firms are critical for employment creation and driving

economic productivity. The pending bills have not only affected their profitability and overall performance but have also become a threat to the private sector in general and the families that depend on these firms. Pending bills also have a bearing on NPLs since service providers are not able to effectively service their loan repayments on time. If not well monitored, these could have significant implications on the productivity of the firms and the economy at large.

2.7.3 Public debt

To spur economic growth and productivity, the government has relied heavily on both domestic and external debt to finance mega infrastructure and critical national development programmes. Subsequently, public debt stock has trended upwards along with its risks. Gross public debt grew from Ksh 4,406.9 billion in 2016/17 to Ksh 10,278 billion in 2022/23 and is expected to amount to Ksh 10,975.0 billion at the end of 2023/24. As a percentage of GDP, public debt

increased to 70.8 per cent of GDP in 2022/23 from 57.4 per cent of GDP in 2016/17. Over the same period, domestic debt increased to 33.3 per cent from 27.5 per cent. The increase was reflected in the increased uptake of long-term government Treasury bonds over the period, in line with the medium-term debt strategy of increasing the share of longer maturing debts.

External debt stock as a percentage of GDP increased from 29.9 per cent in 2016/17 to 38.2 per cent in 2022/23 and is expected to marginally decline to 35.5 per cent in 2023/24. The expected decline in public debt in 2023/24 is consistent with the ongoing fiscal consolidation efforts but is elevated due to the exchange rate risks. Table 2.4 presents the analysis of the effects of the Kenya shilling depreciation on public debt, considering inflows and outflows. Between 2021/22 and 2022/23, the shilling depreciated by 18.1 per cent against the United States dollar, with external debt increasing during the period by Ksh 883.6 billion due to the depreciation effect.

Table 2.4: Exchange rate effect on external debt stock (Ksh billion)

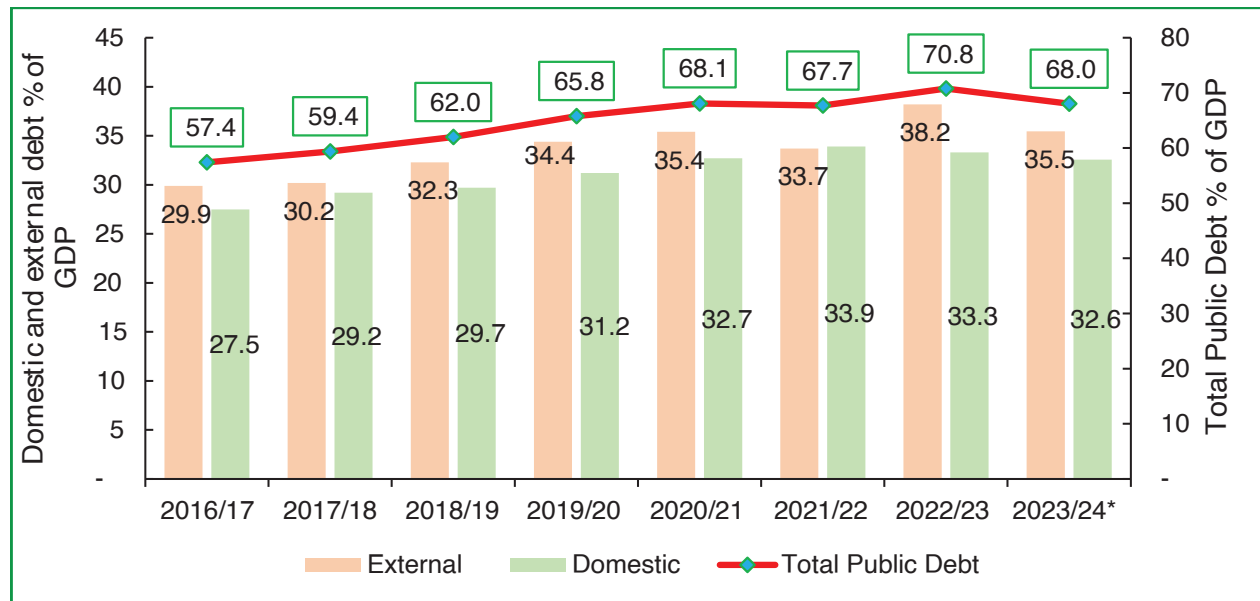
	External stock	Disbursements	Repayments	Change in stock due to Ksh depreciation
2021/22	4,305.8			
2022/23	5,446.6	505.3	248.1	883.6

Source: Calculation based on data from Annual Public Debt Report

Both external and domestic debt have potential ramifications to the economy if they rise beyond sustainable levels. That is, rising domestic debt may crowd out private sector borrowing and therefore investment through high interest rates, which affects the economy negatively. Further, rising external debt may impact the

economy through exchange rate volatilities, and for a relatively small open economy such as Kenya, which is largely import-dependent, exchange rate volatilities may further generate inflationary pressures with repercussions on output and productivity.

Figure 2.18: Public debt (Ksh billion), (2016/16-2022/23)



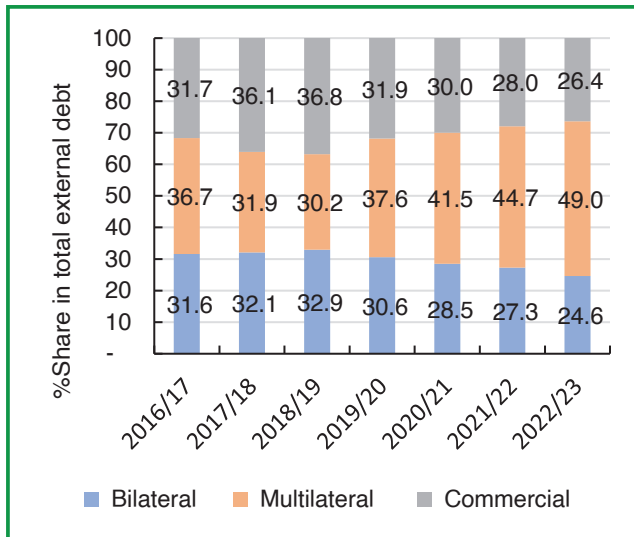
Data source: National Treasury and Economic Planning (Various), Annual Public Debt Report, Quarterly Economic and Budgetary Review (QEBR) and Budget Policy Statement (BPS)

Commercial banks are the largest holders of domestic debt at an average of 49.7 per cent over the 2016/17 to 2022/23 period. Non-bank financial institutions come second at 46.4 per cent. There has been minimal borrowing from the Central Bank of Kenya, and the trend has been declining with about 2.2 per cent

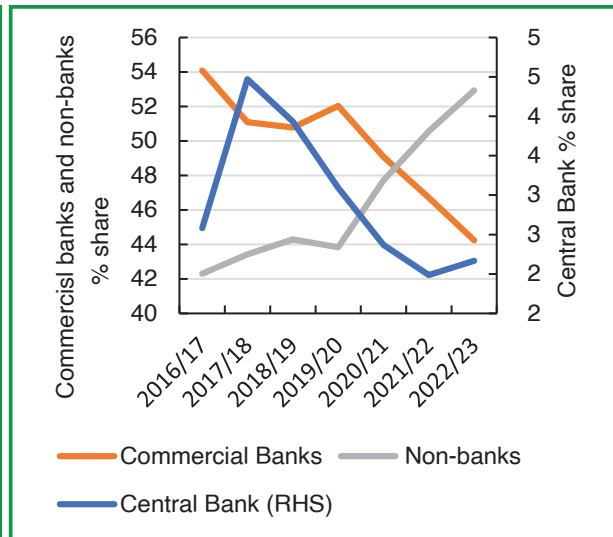
of domestic debt held by the Central Bank of Kenya. Multilateral debt dominates external debt, accounting for about half of external debt. Both commercial and bilateral components have been on a decline, indicating government alignment to the medium-term borrowing strategy of acquiring more concessional debt.

Figure 2.19: External and domestic debt structure (2016/17-2022/23)

(a) External debt



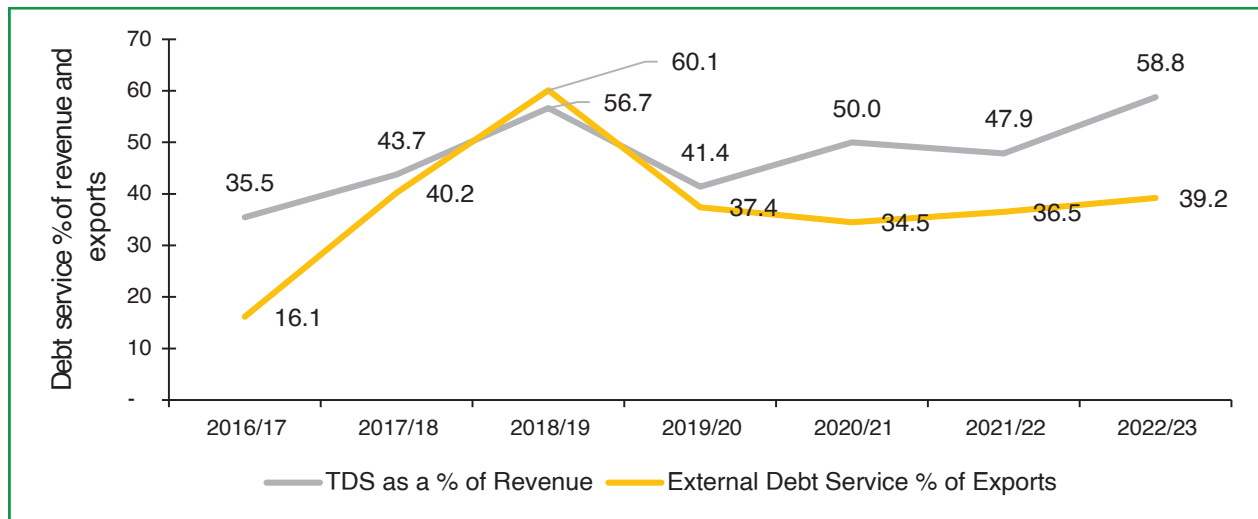
(b) Domestic debt



Data source: National Treasury and Economic Planning (Various), Annual Debt Management Report

Debt servicing costs consume a significant amount of government revenue. Higher debt servicing implies reduced resources available for expenditures that could increase productivity in the economy, such as in education and health. Total debt service (TDS) as a share of revenue decreased from 50.0 per cent in 2020/21 to 47.9 per cent in 2021/2022 due to improved revenue collection after the removal of COVID-19-related fiscal measures. Public debt service cost in 2022/23 was 58.8 per cent of the revenue, up from 47.9 per cent in 2021/22 (Figure 2.20). The increase in the share of debt service to revenue was characterized by increased external debt repayment that resulted from the depreciation of the shilling against the dominant foreign currencies within the external debt portfolio, and high interest payments on

domestic debt due to the high domestic interest rate environment. Additionally, external debt service as a proportion of exports rose from 36.5 per cent in 2021/22 to 39.2 per cent in 2022/23, reflecting the growing interest payments from external debt that emanated from increased uptake of commercial loans, weakening of the Kenya shilling, and overall increasing interest rates in the international financial markets. The persistent increases in debt service to revenue ratio above the recommended threshold is a worrying sign, and points to elevating public debt costs. The increasing debt-to-revenue ratio indicates that generated revenues are increasingly being used to repay public debt at the expense of productive expenditure needs. Importantly, domestic debt accounts for the largest share of TDS at about 66.7 per cent.

Figure 2.20: Debt service (2016/17-2022/23)

Data source: National Treasury and Economic Planning (Various), Annual Debt Management Report

2.7.4 Debt sustainability

At the end of 2023, the present value of total public debt as a share of GDP was estimated at 68.2 per cent. Given the 'medium' debt carrying capacity by the IMF in 2024, these figures breach the debt sustainability requirement threshold of 55 per cent under the Debt Sustainability Framework (DSF) by the IMF and the World Bank (Table 2.5). On the positive side, the present value of external debt as a share of GDP was 31.7 per cent, which falls below the 40 per cent threshold for 'medium' debt carrying capacity for low-income countries.

Table 2.5: Debt sustainability indicators (%)

Indicators	Threshold	2022	2023	2024*	2025*	2026*	2027*	2028	2033
PV of PPG external debt to GDP ratio	40	29.0	31.7	35.8	33.8	31.8	29.9	28.3	23.3
PV of PPG external debt to export ratio	180	228.2	256.9	240.3	224.0	209.9	194.3	182.1	137.9
PPG debt service to export ratio	15	21.5	24.9	36.0	25.2	24.9	21.1	23.3	15.5
PPG debt service to revenue ratio	18	15.3	17.3	28.5	19.8	19.6	16.9	18.8	13.6
PV of debt-to-GDP ratio	55	63.9	68.2	67.2	64.0	61.4	59.1.9	56.9	48.1

Data source: National Treasury and Economic Planning (2024), Medium-Term Debt Management Strategy; and IMF (2024), IMF Country Report No. 24/13

1.7.5 Public spending and productivity

It is widely recognized that public expenditure on certain aspects of the economy such as infrastructure (for example, roads, ports, or communication systems), public research spending, and the provision of basic education and medical services raises the economic potential of a country. By arranging public expenditure using the Classification of the Functions of Government (COFOG)⁴, the effects of public expenditures on productivity growth were analyzed with the aid of KNBS data for the period 1980-2022, Table 2.6 presents the results.

Expenditures on economic activities, which include spending on transport infrastructure,

information and communication, fuel, and energy and fuel influence productivity growth significantly and positively. Moreover, the corresponding coefficients of spending on education and health are significant at a 1.0 per cent significance level. Government expenditures on public order and safety influence productivity growth positively because they reinforce legal rights, reduce crime (including economic crimes), and reduce the size of the underground economy. The results are, however, not statistically significant. It is important to note that larger expenditures on public order may also indicate problems with crime, corruption, or a large underground economy. Similar results are observed for social protection and housing and community amenities, which positively drive productivity growth.

⁴ See appendix section for further details on COFOG Classification.

Table 2.6: Effect of public spending on productivity

Variable	Coefficient
Dependent variable: productivity	
Public order and safety	0.827
Education	0.775***
Economic affairs	1.403***
General public services	0.279
Health	1.626***
Housing and community amenities	0.584
Social protection	0.043
Δ Capital	0.201***
Δ Labour	-0.058***

Source: Authors calculations based on KNBS data

Note: *** represents a significance level of 1.0 per cent.

A strong correlation between targeted government spending and productivity growth is revealed by the analysis presented in Table 2.6. Notably, health expenditure demonstrated the most significant impact, with a 1.0 per cent increase leading to a 1.6 per cent rise in productivity. This aligns with the MTP focus on investing in human capital, as a healthy workforce fosters economic dynamism. Furthermore, the analysis suggests positive spillover effects from increased spending on economic affairs (1.4% productivity increase per 1% spending increase). This category, as defined by COFOG, encompasses several key areas aligned with the government's BETA priorities: agriculture, MSMEs, digital infrastructure, and the creative economy. These sectors are crucial for fostering a diversified and innovative economy. Additionally, the results highlight the importance of other strategic spending areas within BETA, such as health (already mentioned) and housing and settlements. Investments in these areas can create a virtuous cycle, with improved health leading to higher productivity and better housing fostering a more stable and productive workforce.

2.8 External Sector Developments

2.8.1 Current account

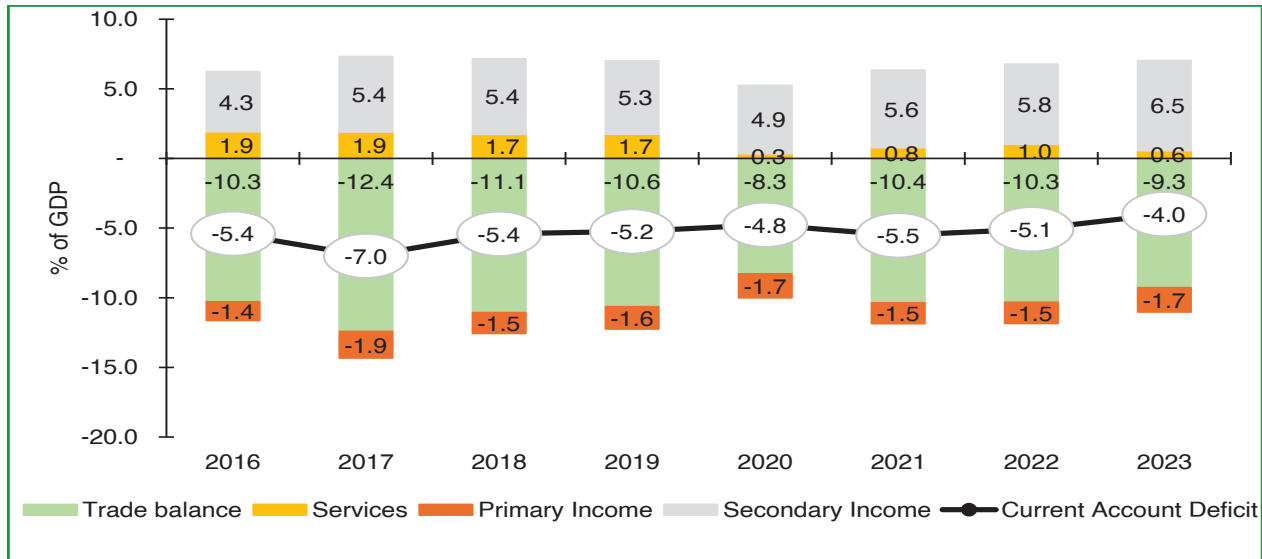
Various studies have identified productivity shocks as the key driving force behind current account movements. It is widely established that a country's productivity shocks negatively affect the current account balance, while global productivity shocks do not have any significant effect. Productivity shocks are the main source of fluctuations in net exports, contributing to

sharp drops in net exports. This implies that the persistence of the current account deficit, especially for Kenya where the trade balance has continuously dragged the current account balance, could be explained by shocks in productivity, especially weather-related shocks that affect local production of key export products such as tea, coffee, and horticulture, among other products.

The current account deficit narrowed to 4.0 per cent of GDP in 2023 from 5.1 per cent of GDP in 2022. This was mainly driven by a recovery in the tourism sector to pre-COVID-19 levels, resilience in remittances, reductions in imports, and a real exchange rate depreciation. The current account balance was supported by an improvement in the net merchandise account, the net secondary income balance, and net receipts on the services account despite a deterioration in the net primary income balance.

The merchandise trade balance recorded strong improvement due to the expansion in global demand and the high market value of exports in the international market. The trade balance narrowed from a deficit of 10.3 per cent of GDP in 2022 to a deficit of 9.3 per cent of GDP in 2023. Secondary income, which had a positive contribution to current account narrowing accounted for 6.5 per cent of GDP in 2023 compared to 5.8 per cent in 2022. There was a strong growth in diaspora remittance inflows at 3.9 per cent of GDP in 2023, reaching Ksh 591.2 billion, compared to Ksh 478.5 billion in 2022. The narrowing current account deficit and prospects for enhanced market confidence with the government commitment to settle the maturing Eurobond in June 2024 will help improve the external outlook.

Figure 2.21: Current account performance (2016-2023)

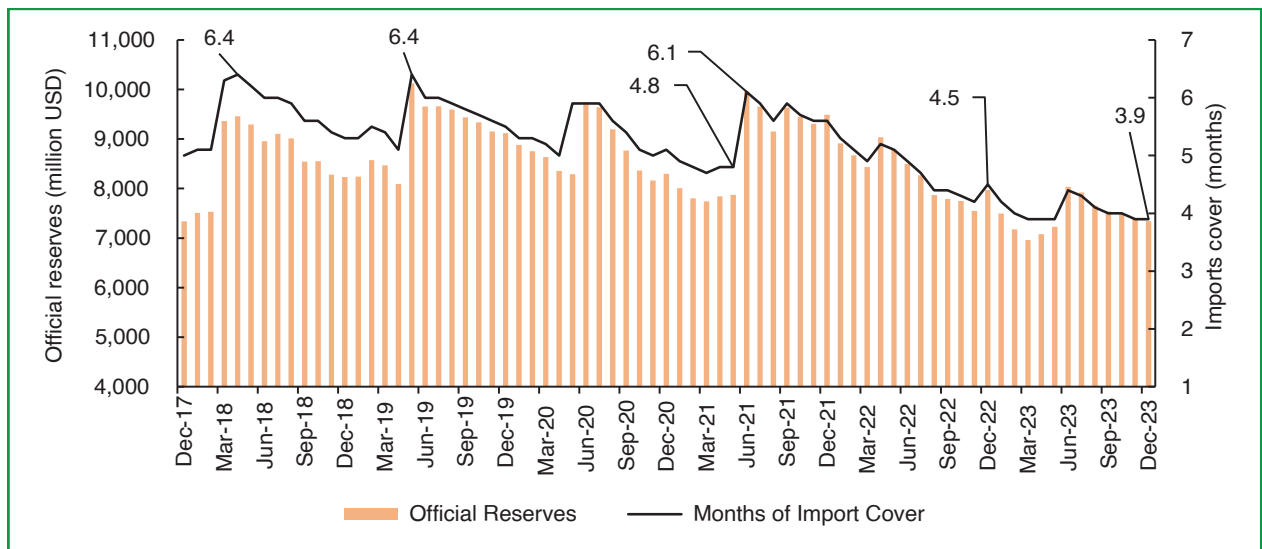


Data source: KNBS (Various), Quarterly Balance of Payment and International Trade Reports

Foreign exchange reserves remained at the margins of the statutory requirement of at least four months of import cover and on a declining trend. At the beginning of 2023, reserves amounted to US\$ 7,495 million (4.2 months of import cover). This trend continued

until December 2023 when reserves amounted to US\$ 7,341 million (3.9 months of import cover), raising concerns about the adequacy of the reserves to cushion the economy against any short-term shocks in the foreign exchange market.

Figure 2.22: Trends in official reserves holdings (2017-2023)



Data source: Central Bank of Kenya (Various), Monthly Economic Indicators

2.9 Key Messages and Recommendations

2.9.1 Key messages

1. Improvements in productivity growth are vital for sustained economic growth and accelerated reduction of poverty. Widespread sectoral productivity growth results in increased output, thereby reducing the cost of food and consumable products to poor consumers. It also increases labour efficiency, leading to higher labour incomes, which in turn supports meeting basic needs.
2. Growth momentum picked up in 2023 due to robust agriculture performance with improved rainfall. For the first time since December 2021, the agriculture sector expanded, growing at 7.0 per cent in the first nine months of 2023 compared to a contraction of 1.1 per cent and 1.9 per cent in the same period in 2021 and 2022, respectively. Overall, the economy grew by 5.6 per cent in the first nine months of 2023 compared to a growth rate of 5.2 per cent in the same period in 2022.
3. Food inflation eased in 2023 because of ample rainfall received in the first half of the year. Timely monetary policy tightening supported the softening of non-food, non-fuel inflation. However, fuel inflation trended upwards in 2023 due to global oil prices, exchange rate depreciation, and the implementation of the 16 per cent VAT on fuel. As a result, overall inflation averaged 7.7 per cent in 2023, crossing the government target band.
4. The banking sector was resilient, with most indicators remaining consistent with the statutory thresholds. Nonetheless, concerns remain on banking sector asset quality as the ratio of non-performing loans to gross loans increased to 14.6 at the end of December 2023 from 13.9 in December 2022. Accumulation of pending bills also has a bearing on increasing non-performing

loans as suppliers get constrained to service their loan repayments in good time.

5. Fiscal consolidation continued in 2022/23 and 2023/24, supported by rationalized spending through improved public investment management, reallocating resources to BETA priority areas, and removal of unsustainable consumption subsidies. Recent gains in revenue that halted in 2022/23 are expected to pick up in 2023/24 due to the ongoing implementation of revenue enhancement measures.
6. The government strategy to tap into concessional borrowing has prudently reduced the accumulation of expensive debt. However, high exposure to currency depreciation, export and interest rate shocks, global capital market volatility, and rollover risks could put at risk public debt sustainability in the near to medium term.
7. Current account position improved in 2023 owing to improved net merchandise trade, secondary incomes, and services account. Importantly, over the years, the poor performance of the merchandise trade balance has put pressure on the current account balance.

2.9.2 Recommendations

1. To buffer the economy against future effects of climate change, the government could strengthen agricultural resilience by investing in irrigation infrastructure, drought-resistant crops, fast-maturing crop varieties, and adopting climate-smart agricultural practices. Further, the country could revitalize economic growth by enhancing sectoral productivity through sector-specific interventions such as technological advancements, improved management practices, or better worker training. Other interventions include a change in sector product mix to value-added goods or services and a reduction in costs of raw materials or other inputs. Resilience building measures, therefore,

could target programmes and projects that help to mitigate and adapt to the effects of climate change and invest in disaster risk preparedness measures.

2. To ensure that the country does not incur losses related to post-harvest losses, it becomes critical to invest in infrastructure that supports proper harvest management by expanding the existing infrastructure through the National Produce and Cereals Board warehouses and enhancing the market uptake of agricultural produce. Given that there is surplus production in periods following rainfall, there is a need to put in place incentive measures for farmers so that they are encouraged to sell their surplus to the government or encourage them to set up homestead granaries for harvested cereals.
3. Effectively managing overall price developments through timely and adequate monetary policy stance to rein in non-food, and non-fuel inflation while investing in initiatives that enhance agricultural productivity to enhance food production and in turn ease food inflation. Other initiatives include scaling small-scale irrigation and lowering input prices through initiatives such as the ongoing fertilizer and seed subsidy programmes. Since micro-irrigation schemes along riverbanks have yielded positive outcomes, installing water harvesting infrastructure such as constructing water pans and reservoirs, especially in arid and semi-arid lands (ASALs) could support agricultural production and promote food and nutrition security.
4. To address the growing non-performing loans ratio, there is a need to boost the growth of private sector activities by enhancing the ease of doing business, reducing bureaucratic hurdles, and creating a favourable regulatory environment that can encourage banks and other lending institutions to extend credit to the private sector. This calls for the government to enhance the clearance of pending bills, for example, by ring-fencing funds to pay off outstanding bills that it owes to suppliers. Encouraging banks to restructure loans, especially for small and medium-sized enterprises, and offering concessionary loans to sectors such as agriculture, is a priority. Further, maintaining a sustainable fiscal position and scaling up the implementation of public financial management regulations and the Public Finance Management - PFM Act of 2012 (including in debt and cash management) could prevent the occurrence of government arrears to individuals, suppliers, and banks.
5. Sustaining the ongoing fiscal consolidation interventions is crucial by prioritizing efficient spending and broadening the tax base. Revenue enhancement will require prudent management of tax expenditures, escalating initiatives that promote growth to boost taxable income, and ensuring that every economic agent pays their share of taxes. Expenditure management will require encouraging ministries, departments, agencies, and counties to enhance budget absorption while limiting fiscal slippages.
6. With increased risks of debt distress, it is imperative that the debt management strategy emphasizes diversifying debt sources by prioritizing the acquisition of concessional loans, scaling up the uptake of grants, and exploring debt restructuring options promptly before the maturity of huge debts. Further, exploring the issuance of use-of-proceeds (UOP) bonds and sustainability-linked bonds (SLBs) could be instrumental in driving key BETA priorities on health and housing.
7. Address weak merchandise trade balance through diversification of exports by focusing on high technology sectors such as manufacturing to drive value added exports. Further, addressing supply-side bottlenecks such as standardization, market information and cost of production will bolster export volumes.

Kenya's economy grew at 5.6 per cent in 2023, supported by favourable weather conditions and the government fertilizer subsidy, which enhanced agricultural sector production. At the baseline, growth is projected at 6.2 per cent in 2024, and 6.7 per cent in the medium-term, with inflation remaining within the government policy target range of 5 ± 2.5 per cent. Growth is likely to accelerate to 6.1 per cent in 2024, and 6.6 per cent in the medium-term due to opportunities such as favourable weather and growing economic partnerships, such as the concluded 28th Conference of Parties where Kenya acquired US\$ 4.4 billion to support green manufacturing. Should downside risks materialize, which include poor rainfall patterns and heightened debt vulnerabilities, growth could be depressed to 5.3 per cent in 2024, and 5.6 per cent in the medium-term. Individual factor and total factor productivity have direct and indirect effects on value-added through forward and backward sectoral linkages. Furthermore, total factor productivity influences government revenues and aggregate demand. To foster productivity across sectors, innovations in areas such as precision agriculture, use of high-yielding seeds, investment in infrastructure for irrigated agriculture, continued government fertilizer support, and automation of manufacturing processes both at the national and county levels could support sustainable development. Incentives to access raw materials, machinery, and equipment could reduce production costs and enhance productive efficiency. The development of industry clusters could support forward and backward sectoral linkages for a vibrant industry. There is also a need for prudent monetary and fiscal policies to support aggregate demand, especially investment, consumption, and exports. County governments can achieve a projected 5.9 per cent GCP growth in 2024 by leveraging on various government initiatives, such as participating in value chains, enhancing agro-processing, and accelerating technological progress.

3.1 Introduction

Economic activities globally witnessed a rocky recovery in 2023 from a slowdown of 3.5 per cent in 2022 (IMF, 2023). The slowdown was mainly due to adverse shocks, which included uncertainty in global financial conditions, tightening of monetary policy in advanced economies, and the growth slowdown in Russia and China. In Sub-Saharan Africa (SSA), growth declined to 4.0 per cent

in 2022 from 4.8 per cent in 2021. In Kenya, a GDP growth of 5.6 per cent was attained in 2023 compared to 4.9 per cent in 2022. This is signalling continued economic recovery supported by improvements in the agricultural and services sectors following improved rainfall, and the seed and fertilizer subsidy programme undertaken by the government. The growth was also supported by improved service delivery at the national and county levels. Table 3.1 shows projected growth rates from various sources.

Table 3.1: Selected GDP growth rates (2022-2025)

	IMF	World Bank	AfDB	BPS
Kenya				
2022	4.8	4.8	4.8	4.8
2023f	5.1	5.0	5.4	5.5
2024f	5.3	5.2	5.4	5.9
2025f	5.3	5.3	5.5	6.1
Sub-Saharan Africa				
2022	4.0	3.7	3.7	n.a.
2023f	3.3	2.9	3.6	n.a.
2024f	3.8	3.8	4.2	n.a.
2025f	4.1	4.1	n.a.	n.a.

Data source: IMF (2024) World Economic Outlook January 2024; World Bank (2024) Global Economic Prospects January 2024; AfDB (2024) Africa's Macroeconomic Performance and Outlook January 2024; Government of Kenya (2024) Budget Policy Statement 2024 (n.a. means not available; f is forecast)

Globally, growth is projected at 3.1 per cent in 2024 and 3.2 per cent in 2025 (IMF, 2024). For Kenya, growth is projected at 5.1 per cent for 2023 and 5.3 per cent for 2024 and 2025. The growth projections by Medium-Term Plan IV for 2023 to 2025 are, however, 6.1, 6.3, and 6.5 per cent, respectively, while projections by Budget Policy Statement 2024 are 5.5, 5.9, and 6.1 per cent, respectively.

This chapter provides economic forecasts for the medium-term (2023-2026) based on the KIPPRA-Treasury Macroeconomic Model (KTMM), which is an aggregate demand-side model of the economy. We also provide simulations from the CGE framework and projections for county GCPs.

3.2 Medium-Term Prospects (Baseline Scenario)

Medium-term prospects are informed by the government development agenda, reflected by the Bottom-Up Economic Transformation Agenda (BETA) in the Medium-Term Plan IV for 2023-2027. The baseline scenario assumes normal conditions to face the economy or business-as-usual scenario, as the government continues implementing its programmes. Table 3.2 presents the medium-term outlook for growth and aggregate demand components that contribute to GDP, based on the KTMM Model. The contributions of private consumption, gross fixed capital formation (GFCF), exports, and imports to GDP were 76.2, 17.2, 11.7, and 20.4 per cent in 2023, respectively (KNBS, 2024).

Table 3.2: Medium-term economic outlook (baseline scenario)

	2021	2022	2023	2024f	2025f	2026f	2027f
Rates (%)							
GDP growth	7.6	4.9	5.6	6.2	6.6	6.8	7.2
Inflation	6.1	7.7	7.6	8.0	7.3	6.0	6.5
Interest rate	7.0	8.2	12.2	12.0	11.6	10.9	10.8
Volume growth							
Private consumption	9.1	5.6	7.7	7.6	7.4	7.3	7.6
Government consumption	6.0	7.4	3.5	3.8	4.4	4.9	5.4
Private investments	15.4	-2.4	-7.9	2.2	4.8	4.9	5.6
Government investments	-19.2	-15.5	81.9	48.1	38.8	27.0	26.1
Export goods and services	15.3	10.7	-4.5	-1.4	1.8	2.9	3.7
Import goods and services	22.2	4.6	-3.1	4.8	6.5	5.9	7.0
% of GDP							
Current account balance	-5.3	-5.1	-4.0	-3.7	-4.8	-6.3	-7.3
Index							
Ksh per Dollar	109.6	117.8	139.9	143.3	143.4	143.2	143.0

Data source: KIPPRA-Treasury Macroeconomic Model, 2024; where *f* is forecast

Under the baseline scenario, the economy is expected to grow at 6.2 per cent in 2024 and maintain a steady growth path to 7.2 per cent by 2027. The robust growth is attributed to expansion in private and public investments, improved weather conditions that boost agricultural activities, a growth-friendly policy environment, and enhanced revenue mobilization. Through the Medium-Term Revenue Strategy (MTRS), the government is implementing reform measures to strengthen tax revenue mobilization to over 20 per cent of GDP in the medium-term. If the country is to attain the growth target of 10 per cent by 2030, it would need to have accelerated growth as 2030 nears.

Inflation is envisaged to remain within the government band range of 5 \pm 2.5 per cent in the medium-term. In 2023, the inflation rate averaged 7.6 per. It is expected to increase slightly to 8.0 per cent in 2024, and average at 7.3 per cent in 2025. The inflationary pressure in the last two years has largely emanated from the depreciation of the local currency, rising international fuel prices, weather shocks,

and other structural bottlenecks such as when markets are not efficient. These led to the tightening of monetary policy since 2022 and, therefore, a rising trend in interest rates (Government of Kenya, 2024).

Private consumption supports aggregate demand and is expected to average 7.4 per cent in the medium-term (2024-2027). This will be supported by improved consumer incomes arising from job creation opportunities from the implementation of various government projects such as affordable housing, and community health volunteers. Government consumption is key in boosting economic activities and private sector participation. Government consumption is expected to decline in 2023-2024 as the government pursues fiscal consolidation and rise thereafter to an average of 7.3 per cent in the medium-term with increasing demand for public services as the BETA implementation continues.

Private investment, being a driver of aggregate demand, enhances productivity through capital accumulation that is invested to expand

production capacity and enable access to high-level technologies that enhance productivity. There was a decline in investment volume in 2022, which was due to uncertainties arising from the general elections. At the baseline, private investment is expected to average 4.4 per cent in the medium-term, which will require creating an enabling environment with infrastructural development, macroeconomic stability, improved investor confidence, essential services such as water and power, and supported by Public-Private Partnerships (PPP). By helping to build productivity in the private sector, private investment becomes crucial for overall economic growth and job creation.

Government investment is key in supporting inclusive economic growth, job creation, and sustainable development. This explains why the government has been investing heavily in infrastructure and energy development. Public investment raises the marginal productivity of private capital. From the baseline, government investment is expected to continue, and an average of 35.0 per cent in the medium-term due to the implementation of various development projects that are part of the BETA Plan. The MTP IV aims to increase the investment-to-GDP ratio from 19.3 per cent in 2022/23 to 26.7 per cent in 2027/28. This will be achieved through investments in the affordable housing programme, community health, investment in key value chains, public infrastructure investments, and social protection.

A stable domestic currency is vital for macroeconomic stability and growth. In 2023, the US dollar appreciated against other international currencies, partly due to the monetary policy stance in the US, and terms of trade shocks. Consequently, the local currency depreciated against the dollar to an average of Ksh 139.9 per dollar in 2023. As a measure to address the volatility of the local currency, the government established a government-to-government (G2G) procurement plan for oil products. A projected gradual easing of the exchange rate in the medium-term is premised

on government efforts to improve the foreign exchange balance. If external shocks persist, such as further monetary policy tightening in the US, then the recovery of the local currency against the US dollar may take longer than expected.

Export volumes as a per cent of GDP increased from 9.6 per cent in 2020 to an estimated 12.2 per cent by 2022 (KNBS, 2023). The government is keen on increasing exports, especially focusing on nine value chains which include tea, dairy, leather and leather products, rice, edible oils, textile and apparel, and construction materials. Export growth is projected at -1.4 per cent in 2024 from an estimated -4.5 per cent for 2023. The growth in exports is premised on enhancing market access and facilitating export diversification through continued implementation of the Single Customs Territory, and the African Continental Free Trade Area (AfCFTA).

Import volumes have been on an upward trend since 2020, getting back to pre-pandemic levels, rising from 17.6 per cent of GDP in 2020 to 21.5 per cent in 2022 (KNBS, 2023). In terms of percentage growth in volume, however, imports and exports have shown much volatility between 2018 and 2022. From the baseline projections, imports are projected to grow in volume at 4.8 per cent in 2024 and further to 6.5 per cent in 2025. This will be driven partly by the implementation of government programmes under MTP IV for those that are not locally available.

The current account balance is expected to improve in the medium-term, attributed to government efforts to explore new commodity markets and strategic partnerships for trade that would boost exports and therefore improve the trade account. The trade balance for Kenya is the key contributor to the current account deficit, followed by net primary income balance, and net services account. The current account balance is supported by an improvement in the net receipts on the services account and the net secondary income balance. The secondary

income balance measures the net income that residents earn from the rest of the world and current transfers.

3.3 Medium-Term Risks, Opportunities, and Outlook

Medium-term prospects at the baseline may, however, be affected by upside risks that the country could leverage to boost growth and downside risks that could curtail the

achievement of the economic prospects. The optimistic and depressed forecast scenarios are thus informed by the potential risks and opportunities, discussed in section 3.3.1.

3.3.1 Risk factors

Table 3.3 presents the various downside and upside risk factors, and this is followed by a discussion on their potential impacts and their likely implications on productivity.

Table 3.3: Summary of downside and upside risks

Downside risks	Upside risks
(i) Global geo-political tensions and uncertain economic outlook	(i) Macroeconomic stability
(ii) Weather-related risks (more frequent droughts and uncertain rainfall patterns)	(ii) Improved weather conditions, rainfall that boosts agriculture (and tree planting initiatives going on)
(iii) Debt refinancing risks and accumulation of pending bills by national and county governments	(iii) Established economic partnerships that promote growth in investment and establish export markets
(iv) Rising international fuel prices that raise the cost of living	(iv) Stable global commodity prices, especially for agricultural commodities and metals and fuel
(v) Regional conflicts or unrest and their likely spillover effects (Sudan, Somalia)	(v) Faster than expected normalization in global financing conditions

Source: Author illustration based on recent developments globally, regionally, and nationally

The main downside risks for Kenya are uncertain global economic outlook coupled with dynamic geopolitical tensions; climate and weather-related uncertainties that drive up food inflation; global world oil prices, which drive up fuel inflation; and debt refinancing risks. Furthermore, the country is vulnerable to external factors such as tightening financial conditions in more advanced economies, and the strengthening of the US dollar against many currencies. In addition, there is a spillover risk effect from regional conflicts and instability. If these risks materialize, they could result in a depressed scenario presented later in the chapter.

(a) Weather-related risks

Kenya is susceptible to climate risks and other natural disasters. Between 1975 and 2023, the country witnessed about 11 incidences

(cumulative 21 years) of widespread drought, with occurrences in 1975, 1977, 1980, 1983/84, 1991/92, 1995/96, 1999/2000, 2004, 2008-2011, 2016/17, and 2022/23.⁵ Consequently, growth was below 4.5 per cent in the years 1996-2005, 2011, 2016, and 2019-2020, which largely coincided with drought or flooding periods. Droughts and floods are usually accompanied by declines in GDP growth and agricultural sector performance (UNEP, 2006; Omondi, 2019; and Blanc and Noy, 2023). They also lead to other negative effects such as loss of lives and destruction of property. For example, the 2008-2011 drought caused widespread losses and damage and slowed real GDP growth by an average of 2.8 percent a year.⁶ The 2022/23 drought led to crop failure and the death of animals, thus leading to negative growth for the agriculture sector. The widespread drought in 2022 led

⁵ Kenya Natural Disaster Profile, UNDP Kenya Country Office.

⁶ Kenya: Post-Disaster Needs Assessment 2008-11 Drought Report (2012).

to dipped growth at 4.8 per cent, coupled with other shocks such as the Russia-Ukraine War. However, between November 2023 and February 2024, the country experienced good rainfall, and this led to improved farming activities in some parts, given that agricultural production in Kenya is rain-fed. Due to climate change, drought cycles have become shorter, which means that the frequency and intensity of droughts have increased from every five (5) years to two to three (2-3) years, and currently to one to two (1-2) years.⁷

(b) Debt refinancing and accumulation of pending bills' risk

The public debt level in Kenya has been sustainable. Debt stimulates long-run economic growth (Kiriga, Chemnyongoi and Wachira, 2020; Sagire and Muriu, 2021), and can also enhance a country's productivity level since it makes possible investments in capital accumulation and critical infrastructure that contributes to future growth (Keynes, 1936). The risk is the refinancing of debt, given the shortening grace periods for external debt, which leads to bunching of repayments, and the rising interest rates on commercial loans (Government of Kenya, 2024). Domestic revenue is significantly impacted by debt servicing charges. A high accumulation of pending bills represents an additional downside risk since they lead to a charge on national revenues. The government is, however, keen to lower the country's debt burden by reducing the fiscal deficit and ensuring pending bills are cleared.

(c) High international fuel prices

Rising international fuel prices have in recent years become a significant risk for sustainable economic growth since they result in an elevated cost of living for many small open economies. This risk is likely to dominate global risks through 2025 (McLennan, 2023). The cost of living pressure refers to the significant inability among broad sections of the

population to maintain their current lifestyle due to increases in the cost of essential goods that are not matched with a rise in real household income. High international fuel prices translate into high costs of production for manufacturing firms and high operating costs for enterprises, with the result being lower production and excess idle capacity, which translates into lower productivity, with a negative effect on growth (Trang, Tho, and Hong, 2017). Oil prices declined in 2023, but are expected to increase in 2024 and beyond, based on Fitch Ratings which increased the 2024 oil price assumptions, reflecting OPEC's continuing tight control over supply. Furthermore, decisions of large economies that are non-OPEC members, such as the US and UK, are likely to affect oil prices moving into the medium-term. Additionally, Brent crude oil spot prices are projected to increase from US\$ 82 per barrel in 2023 to US\$ 87 in 2024 and decline marginally to US\$ 85 per barrel in 2025 (US Energy Information Administration Outlook, 2024).

(d) Global geo-political tensions and shipping disruptions in the Red Sea

Geo-political tensions and confrontations are a dynamic downside risk. Tensions between Russia and Ukraine continue to disrupt value chains for essential commodities. More recently, tensions between Israel and Hamas continue to escalate, further deepening geopolitical fragmentation. Such tensions lead to the destruction of both physical and human capital in affected countries, which leads to a decline in productivity levels. There were also the shipping disruptions occasioned by the Houthi rebel groups at the Red Sea, which disrupted supply chain movement for essential commodities. The decline in production and disrupted supply chains create a transmission effect to other countries through lower imports of essential supplies or factor inputs and lower export volumes, especially for tea, coffee, cut flowers, and tropical fruits.⁸ Disrupted value chains could also drive up inflation in affected countries.

⁷ <https://issafrica.org/iss-today/the-cycle-of-drought-in-kenya-a-looming-humanitarian-crisis>

⁸ <https://issafrica.org/iss-today/the-cycle-of-drought-in-kenya-a-looming-humanitarian-crisis>

(e) Regional conflicts and instability

Sub-Saharan Africa is experiencing regional tensions, especially in South Sudan and the Democratic Republic of Congo (DRC). There have also been attacks by militants in Somalia. Conflicts and instability in neighbouring nations affect trade performance, disrupt supply chains for essential commodities, increase the number of refugees or displaced persons, decrease remittance flows and investment, and have negative welfare effects, especially for closely interconnected economies, among other negative externalities. The overall impact of regional wars or instability is a decline in productivity and economic growth for affected countries (Sesay, 2004; Newiak et al., undated).

3.3.2 Opportunities

There are also some upside opportunities that the country could leverage to boost productivity and sustain economic recovery. The key opportunities include macroeconomic stability, normal rainfall that favours agricultural production, strategic economic partnerships, stable global commodity prices, and faster than expected normalization in global financial conditions.

(a) Macroeconomic stability

Macroeconomic stability is critical for sustained economic growth. Macroeconomic stability implies that inflation remains within the government target band of 5 ± 2.5 per cent, that interest rates optimize to levels favourable for investment (estimated at 8%), and exchange rates stabilize to pre-COVID-19 levels. The overall fiscal deficit is also projected to reduce from 6.0 per cent of GDP in 2022/2023 to 3.2 per cent in 2027/2028. On the external account, the current account deficit improved from 5.1 per cent of GDP in 2022 to 4.0 per cent in 2023, and is projected to remain at 4.0 per cent of GDP in 2024, driven by improved imports amid lower oil prices, strong remittance inflows, and rationalization of capital spending (Government

of Kenya, 2024). All these are critical given that macroeconomic stability is among the enablers for the Kenya Vision 2030.

(b) Strategic economic partnerships

Strategic economic partnerships that Kenya has developed bilaterally and multilaterally represent an added opportunity for the country's progress through enhanced export markets and investment opportunities, given that such partnerships are crafted for mutual benefit. Recent economic partnerships include those with the USA, United Kingdom, European Union, India, Indonesia, Iran, Czech Republic, Japan, France, and various African countries. The productivity of the country can also be enhanced by expanding trade and investment, access to productive capital, potential for technology transfer, and cooperation in key areas such as energy, health, and security.

Examples of recent economic development partnerships include the concluded 28th Conference of Parties (COP 28) investment support of about US\$ 4.4 billion for green manufacturing in Kenya, Ksh 350 billion from Japan to finance key economic sectors, China's support for Kenya's landmark projects under the Belt and Road Cooperation such as the Mombasa-Nairobi Railway, and others including support for students abroad, the US support of Ksh 154 million in humanitarian assistance to support flood response, among other cooperations for development.

(c) Green transition initiatives for addressing climate change

The government has been at the forefront in instituting various green transition initiatives aimed at addressing the effects of climate change. Some of these initiatives include the approval of the National Green Fiscal Incentives Policy Framework (2022), the Sovereign Green Bond Framework (2021), and the planting and growing of 15 billion trees by 2032. Kenya also plans to adopt innovative, clean, and

sustainable energy technologies. The country benefitted from US\$ 4.4 billion to support green development projects at the conclusion of COP 28 in 2023. Green transition initiatives promote productivity through improvement in agricultural output, enhancing labour productivity, and establishment of green jobs (OECD and ILO, 2022). Furthermore, green public investment increases the productivity of the green sector through the expansion of output and reduction of green energy prices (Airaud, Pappa, and Seoane, 2022).

(d) Stable global commodity prices

Global commodity prices are expected to be stable for most of 2024 (World Bank, 2023). Stable global commodity prices are crucial since they help moderate country inflation rates. Whereas oil prices are projected to increase in 2024, other commodity prices including food, cereals and other agricultural commodities, and metals are expected to stabilize to pre-pandemic levels. Studies have shown that high inflation has a negative effect on productivity (Sbordone and Kuttner, 1994). A 1.0 per cent increase in inflation reduces agricultural productivity in Kenya by 0.02 per cent (Muraya, 2017). In sum, stable commodity prices translate to stable inflation and better productivity prospects.

(e) Faster than expected normalization in global financial conditions

If global financial conditions normalize faster than expected, this will be an opportunity for the country to leverage on in terms of access to international finance at affordable rates, thus boosting external balances. The channel

through which a normalization in global conditions could lead to an easing of domestic inflationary pressures is when there is lower international fuel and food prices.

3.3.3 Medium-term outlook

Considering the risks and opportunities discussed, this section presents the optimistic and pessimistic economic scenarios for the medium-term based on the aggregate demand KTMM.

(a) Optimistic scenario

The optimistic scenario considers that various factors will work in favour of economic growth and that the opportunities available to the economy will materialize. The key assumptions include stable macroeconomic conditions, implying that inflation will ease to the policy position of 5.0 per cent, and the exchange rate will stabilize to pre-COVID-19 levels and favour the current account and external debt servicing, premised on a well-functioning forex market, favourable external conditions to support the country's external account, and favourable rainfall pattern to support agricultural activities. The optimistic outlook is premised on a stable political environment, improvement in global commodity prices to boost exports, pro-growth fiscal consolidation programme, enhanced domestic resource mobilization, improved capital expenditures (fast-tracking projects that boost development expenditures by about 10 per cent over the medium term), and external borrowing directed towards investment. These assumptions anchor the optimistic outlook in Table 3.4.

Table 3.4: Medium-term economic outlook (optimistic scenario)

	2021	2022	2023	2024f	2025f	2026f
Rates (%)						
GDP growth	7.6	4.9	5.6	6.1	6.7	7.0
Inflation	6.1	7.7	7.6	6.8	6.1	4.8
Interest rate	7.0	8.2	10.8	10.4	9.7	8.2
Volume growth						
Private consumption	9.1	5.6	3.9	4.5	4.8	5.1
Government consumption	6.0	7.4	6.9	7.5	8.9	10.2
Private investments	15.4	-2.4	5.5	6.2	7.1	7.5
Government investments	-19.2	-15.5	1.4	13.9	13.7	11.4
Export goods and services	15.3	10.7	10.2	11.0	11.1	12.2
Import goods and services	22.2	4.5	3.0	4.2	4.9	4.9
% of GDP						
Current account balance	-5.3	-5.1	-3.7	-3.5	-4.5	-5.2
Index						
Ksh per Dollar	109.6	117.8	139.8	139.3	135.8	133.6

Data source: KTMM (2024) Projections

Under the optimistic scenario, economic growth is projected at 6.1 per cent in 2024 and 6.6 per cent in the medium-term. The growth target of 7.0 per cent by 2026 aligns well with an economy-wide model results study, which showed that total annual GDP growth is estimated to rise from the base-run scenario of 4.8 per cent to 7.2 per cent at market prices in 2023-2027 if the BETA is implemented (Breisinger et al.,

2022). Thus, the optimistic growth projection will be achieved with the implementation of the BETA, supported by the private sector and county governments. The economy-wide results by Breisinger et al. (2022) provided scenarios for other macroeconomic variables under the BETA in addition to GDP projections. Table 3.5 presents the scenario analysis for the aggregate demand components for 2023-2027.

Table 3.5: Annual average growth under baseline and accelerated growth scenarios under BETA

Indicator	Base run (%) - 2022	Accelerated growth–2023-2027
Total GDP (market prices)	4.8	7.2
Consumption	4.8	5.9
Government	4.5	6.0
Investment	3.9	8.1
Exports	5.6	11.3
Imports	4.0	5.5
CPI changes	-0.8	-1.2

Source: IFPRI, CGIAR, and KIPPRA (2023) Project Note.⁹

⁹ IFPRI is the International Food Policy Research Institute, CGIAR is the Consultative Group on International Agricultural Research, and KIPPRA is the Kenya Institute for Public Policy Research and Analysis.

Table 3.5 further shows that investments and exports grow faster than GDP, with the annual growth rate of investments more than doubling from 3.9 per cent to 8.1 per cent. In addition, the trade position improves substantially, driven by stronger growth in exports than in imports (11.3% versus 5.5% per year). The findings imply that there is a re-orientation to investment and exports in the economy. The growth in private and public consumption demand is slower than GDP growth, which then leads to falling consumer prices, declining from 0.8 per cent to 1.2 per cent.

Inflation is envisaged to remain within the government inflation band of 7.5 per cent in 2024, under the optimistic scenario, and gradually ease towards the government target of 5.0 per cent in the medium-term. This decline in inflation is largely attributed to improved weather conditions that will boost agricultural production, monetary policy tightening, and prospects for stable international commodity prices except for oil, which would mean less expensive imports for Kenya. The IMF (2023) projects declining inflation rates from 6.6 per cent in 2024, to 5.4 per cent in 2025 and 2026.

Private consumption is a key driver for growth, accounting for about 75 per cent of nominal GDP. When there is an expansionary fiscal policy through increased government spending, it tends to crowd in private consumption, while contractionary fiscal policy through higher taxation tends to crowd out private consumption. Changes in fiscal policy have been shown to influence private consumption, especially in the long-run (Muindi and Mukorera, 2022). Private consumption optimistic projections show a growth of 4.5 per cent in 2024, with a rising trend to 5.1 per cent by 2026.

Exports are projected to rise from 10.2 per cent in 2023 to 11.0 per cent in 2024 and 11.4 per cent in the medium term under the optimistic scenario. The growth in exports is premised on various economic partnership agreements that Kenya enters, such as the Economic Partnership Agreement (EPA) trade deal signed with the European Union, and another trade deal signed with Indonesia. Imports are projected to grow at a slower pace compared to exports and to average 4.2 per cent in 2024 and 4.9 per cent in 2025 and 2026 following government intentions to reduce the import bill on certain imported food commodities. Consequently, the current account balance is envisaged to improve to 3.7 per cent of GDP in 2023 and further to 3.5 per cent in 2024 from 5.1 per cent in 2022.

(b) Depressed scenario

The depressed scenario capturing a worst-case scenario considers that various factors will work against improved economic performance and that the downside risks will actualize. The underpinning assumptions include unstable macroeconomic conditions, implying that inflation persists in the economy occasioned by escalating fuel prices, interest rates rising due to further tightening of monetary policy, thus affecting investments, exchange rate depreciation continues, thus adversely affecting the current account and external debt servicing, worsening geopolitical tensions, regional conflicts and instability in neighbouring countries, adverse weather conditions, and increasing uncertainty in the global economic outlook. Table 3.6 presents the depressed outlook.

Table 3.6: Medium-term economic outlook (depressed scenario)

	2021	2022	2023	2024f	2025	2026f
Rates (%)						
GDP growth	7.6	4.8	5.5	5.3	5.6	6.0
Inflation	6.1	7.7	7.6	7.3	6.2	6.7
Interest rate	7.0	8.2	10.8	10.5	10.0	9.5
Volume growth						
Private consumption	9.1	5.4	3.9	4.2	4.7	5.6
Government consumption	6.0	7.4	6.9	6.4	7.0	7.2
Private investments	15.4	-2.4	5.5	5.5	6.2	5.6
Government investments	-19.2	-15.5	1.4	9.0	7.0	8.0
Export goods and services	15.3	10.7	10.2	10.4	10.4	10.5
Import goods and services	22.2	4.5	3.0	5.4	6.5	7.7
% of GDP						
Current account balance	-5.3	-5.1	-3.7	-3.1	-3.5	-4.3
Index						
Ksh per Dollar	109.6	117.8	139.8	143.6	142.0	141.8

Data source: KTMM (2024) Projections

Under the depressed scenario, the economy is expected to grow at 5.3 per cent in 2024, and 5.6 per cent in the medium-term. The anticipated growth is attributed to the actualization of risk factors, such as further depreciation of the local currency, debt refinancing needs, and a slowdown in global economic growth. The IMF (2023) showed growth projections of 5.3, 5.3, and 5.4 per cent, respectively, for the period 2024-2026, while NCBA (2024) projected 4.9 per cent for 2024.

Inflation is envisaged to remain within the upper government inflation band of 7.5 per cent in 2024 and remain constant even in the medium-term. This high inflation would largely be attributed to unfavourable weather conditions, deteriorating global economic conditions, and a rise in energy prices that would push up fuel inflation.

Exports are projected to grow marginally from 10.2 per cent expected in 2023 to 10.4 per cent in 2024-2025 and to 10.5 per cent by 2026. This will be supported by expanding export markets for key exports and through value

addition for exports. Imports are projected to grow at 5.4 per cent in 2024 and 6.5 per cent in the medium-term. Consequently, the current account balance is envisaged to deteriorate in the medium-term to an average deficit of 3.6 per cent of GDP. The IMF (2023) projected a current account deficit to GDP of 5.0 per cent for 2024.

3.4 Simulation for sectoral productivity in economic sectors on key macroeconomic indicators

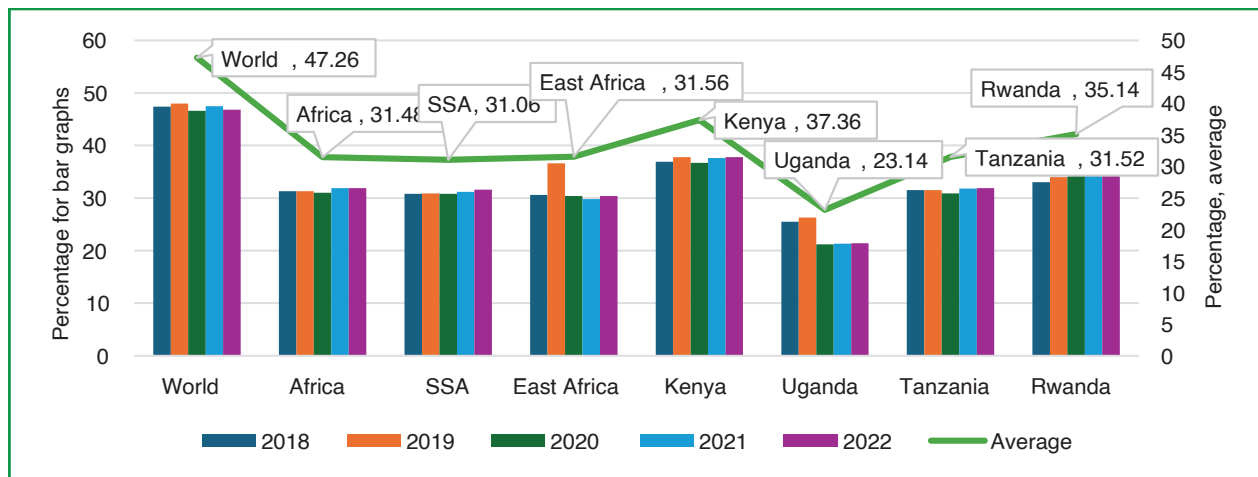
Productivity growth is essential for sustainable and inclusive growth for developing and emerging market economies (IMF, 2023). Like other developing and emerging economies, Kenya has room to increase its productivity for enhanced growth, especially in key economic sectors. Productive capacity reflects the maximum possible output that a country can produce using all factor inputs efficiently. Inadequate productive capacity limits economic output. By maximizing productive capacity, the production possibility frontier (PPF) shifts outwards, and therefore more output is produced, which promotes economic

growth (Gnangnon, 2021). For example, to enhance productive capacities, countries need to transition from traditional agriculture to agro-processing, as this will encourage more production by reducing post-harvest losses and innovative farming solutions, which then shifts the production possibility frontier outwards.

The United Nations Conference on Trade and Development (UNCTAD) developed a productivity performance score for all countries in 2023, which presents an alternative measure of economic progress beyond the GDP. The productivity score measures the productive resources, entrepreneurial capabilities, and

production linkages that together determine a country’s ability to produce goods and services, and therefore grow (UNCTAD, 2023). The score focuses on eight (8) key categories, which include human capital, natural capital, energy, ICT, structural change, transport, institutions, and the private sector. There is a very high correlation between productivity score and GDP per capita for a country. For example, developed economies such as Denmark, Australia, and the US have high productivity scores of over 70 per cent. Figure 3.1 shows recent productivity performance for the world and some selected countries.

Figure 3.1: Productivity scores for world and selected countries, 2018-2022



Data source: UNCTAD (2024)

Kenya’s productivity for the period 2018-2022 averaged 37.4 per cent which, although higher than the African average (31.5%), lies below the world average (47.3%). Improving productive capacity is crucial for supporting higher economic growth. The country is making efforts to upscale its productivity performance further through the Kenya Vision 2030 Delivery Secretariat in collaboration with UNCTAD through the productivity improvement programme initiated in 2023.

Productivity is a crucial determinant of a country’s growth rate, international competitiveness, and

citizen’s well-being (Easterly and Levine, 2001; Garzarelli and Limam, 2019). Furthermore, there is room for further growth in productivity in Kenya and SSA (Garzarelli and Limam, 2019) and that total factor productivity (TFP) growth is the most important source for accelerating growth, contributing to two-thirds of additional growth in 2023-27 (Breisinger et al., 2022).

To better understand the impact of productivity improvement in the three key sectors of the economy, that is agrifood, manufacturing, and services, simulations were carried out using the Demetra-CGE policy analysis model. The model

was developed by KIPPRA in collaboration with the Joint Research Centre (JRC).¹⁰ The total factor productivity simulations were based on the CES (Constant Elasticity of Substitution)

production function, with the specification for constant returns to scale and an assumption that productive factors are fully employed, except labour, which had an unemployment rate of 6.0 per cent.

¹⁰ JRC – Seville is the Joint Research Centre of the European Commission.

Table 3.7: Direct and indirect impacts of TFP on sectoral value-added

Increase in TFP (%)	TFP increase in the manufacturing sector			TFP increase in the agri-food sector			TFP increase in the services sector		
	Manu-facturing	Agrifood	Services	Manu-facturing	Agrifood	Services	Manu-facturing	Agrifood	Services
1%	2.08	0.56	0.35	0.21	2.16	0.43	1.79	2.20	1.96
2%	4.24	1.13	0.71	0.41	4.36	0.87	3.62	4.48	3.99
3%	6.50	1.73	1.08	0.62	6.58	1.32	4.60	5.62	5.17
4%	8.85	2.34	1.48	0.84	8.84	1.78	5.33	6.42	6.12
5%	11.32	2.98	1.89	1.05	11.13	2.24	6.05	7.23	7.09
6%	13.90	3.65	2.32	1.27	13.45	2.71	6.76	8.04	8.08
7%	16.61	4.34	2.77	1.49	15.81	3.19	7.47	8.86	9.09
8%	19.40	4.97	3.18	1.59	18.01	3.55	8.17	9.68	10.13
9%	21.95	5.22	3.30	1.49	19.91	3.70	8.86	10.51	11.19
10%	24.63	5.47	3.42	1.38	21.82	3.85	9.54	11.35	12.28

Source: Simulations from the DEMETRA-CGE Model for Kenya' (<https://datam.jrc.ec.europa.eu/datam/model/DEMETRA/index.html>)

Table 3.7 shows a simulation analysis for the impact of an increase in TFP in each of the sectors on the value added across all the sectors. Thus, the simulation increased TFP by 1.0 per cent for the manufacturing sector only and observed the impacts on the value added for the manufacturing, agrifood, and services sectors. The same simulation was then repeated by shocking agrifood and later services sectors. Consequently, the increase in TFP was done gradually from 1.0 per cent to 10 per cent. Therefore, the table presents the direct and indirect impacts of total factor productivity improvements in sectors on the sectoral value added. Improvements in TFP in the sectors

translate to inter-sectoral gains in value added, given the inter-sectoral linkages. For instance, improvements in total factor productivity in the manufacturing sector have a direct impact on the manufacturing sector and an indirect impact on agrifood and services. Overall, the results demonstrate that sectoral value-added increases with improvements in total factor productivity, with direct sectoral impacts being larger than indirect impacts. The next section assesses the impact of an increase in total factor productivity (TFP) in the three sectors on key selected macroeconomic aggregates, visibly GDP at value added, government income, and value of domestic demand.

Table 3.8: Sectoral total factor productivity improvements on selected macroeconomic indicators

Increase in TFP (%)	GDP at value added (%)			Government income (%)			Value of domestic demand (%)		
	Manu- facturing	Agrifood	Services	Manu- facturing	Agrifood	Services	Manu- facturing	Agrifood	Services
1%	0.31	0.31	1.04	0.70	0.54	1.80	0.49	0.43	1.73
2%	0.63	0.63	2.12	1.44	1.10	3.66	1.00	0.87	3.51
3%	0.96	0.96	2.44	2.21	1.66	4.99	1.53	1.31	4.62
4%	1.31	1.30	2.54	3.02	2.24	6.17	2.08	1.77	5.54
5%	1.68	1.64	2.64	3.86	2.83	7.37	2.65	2.23	6.48
6%	2.06	1.99	2.74	4.76	3.44	8.62	3.25	2.71	7.43
7%	2.46	2.34	2.85	5.70	4.06	9.89	3.88	3.19	8.40
8%	2.83	2.59	2.96	6.65	4.60	11.21	4.49	3.58	9.38
9%	2.94	2.65	3.08	7.43	5.01	12.56	4.87	3.80	10.39
10%	3.05	2.70	3.20	8.27	5.43	13.96	5.28	4.02	11.42

Source: Simulations from the DEMETRA-CGE Model for Kenya

Table 3.8 shows a simulation analysis for the impact of an increase in sectoral productivity for manufacturing, agrifood, and services on the percentage growth on value added GDP, government income, and on final demand. The simulation increased productivity in the manufacturing sector by only 1.0 per cent, observed the impacts on value added GDP, government income, and final demand; and gradually increased the productivity to 10 per cent. The same simulation was then repeated by shocking productivity improvement in the agrifood and services sectors and tracked the impacts on the same macroeconomic indicators.

The agrifood sub-sector is vital for enhanced output, food security, and boosting household incomes. Table 3.8 shows the impact of productivity gain to each of the sectors (agrifood, manufacturing, and services), applied to each sector at a time, on overall gross value added (GVA), which constitutes GDP at value added, government income, and domestic demand, using a plausible range of productivity gains ranging from 1.0 to 10 per cent. For example, a 1.0 per cent increase in TFP for agrifood alone translates to an overall GVA gain of 0.31 per cent, and this is because agrifood is a part of

the wider economy. Additionally, a 1.0 per cent increase in TFP for agrifood leads to a gain in government income and domestic demand by 0.54 per cent and 0.43 per cent, respectively. These gains increase for every gradual improvement in TFP towards 10 per cent.

Overall, the results show that gross value added (GVA), government income, and domestic demand increase with improvements in total factor productivity across the sectors. Further, the simulations reveal that the impacts of productivity improvements have the largest impacts in the services sector followed by manufacturing and agrifood, and this may be attributable to a changing economic structure towards a services-based economy (servitude growing in the economy) and the differences in the sector's forward and backward linkages. The simulations assume a CES production function with full employment of capital and intermediate inputs and a labour unemployment rate of 6.0 per cent. The agriculture sector is, however, a priority sector, being labour-intensive, and would therefore require targeted interventions to make it more productive.

Kenya, therefore, can reap the benefits discussed by putting in place measures

towards enhancing productivity in the agrifood, manufacturing, and services sectors. There is a need for productivity improvement across all the sectors given that they are all complementary. The concluding section explores possible

interventions for raising productivity across these three core sectors. Having discussed TFP, the next analysis dwells on individual factor productivities.

Table 3.9: Individual factor productivity and sectoral linkages on value-added

In-crease in individual factor productivity (%)	Labor factor productivity				Capital factor productivity				Intermediate-input productivity			
	Manu-facturing	Agri-food	Ser-vices	home-pro-duction and con-sumption	Manu-facturing	Agri-food	Ser-vices	home-pro-duction and con-sumption	Manu-facturing	Agri-food	Ser-vices	home-pro-duction and con-sumption
1%	1.19	1.63	1.22	0.70	0.98	0.86	0.71	0.38	2.02	1.78	0.94	1.02
2%	2.42	3.29	2.47	1.42	1.95	1.72	1.41	0.75	4.14	3.64	1.93	2.09
3%	3.55	4.84	3.62	2.08	2.93	2.58	2.12	1.12	6.38	5.61	2.99	3.21
4%	3.94	5.37	4.02	2.30	3.91	3.44	2.82	1.49	8.46	7.29	3.82	4.21
5%	4.33	5.90	4.41	2.53	4.89	4.30	3.52	1.86	10.19	8.39	4.21	4.98
6%	4.72	6.43	4.81	2.75	5.87	5.17	4.22	2.23	12.00	9.54	4.62	5.79
7%	5.11	6.96	5.20	2.98	6.85	6.03	4.93	2.60	13.92	10.73	5.05	6.63
8%	5.50	7.49	5.59	3.20	7.83	6.89	5.63	2.97	15.95	11.96	5.50	7.50
9%	5.89	8.02	5.98	3.42	8.82	7.75	6.33	3.33	18.10	13.24	5.97	8.41
10%	6.27	8.55	6.37	3.64	9.60	8.35	6.83	3.58	20.38	14.58	6.48	9.36

Source: Simulations from the DEMETRA-CGE Model for Kenya.

Note: VA is the value added

Gradual improvements in the individual (or partial) factor productivities for labour, capital, and intermediate inputs translate into higher gains in value added for manufacturing, agrifood, services, and home production and consumption activities. Home production and consumption refers to output from households that is used for subsistence consumption. From the simulation analysis, productivity improvement in intermediate input yields the highest value added gains in each of the sectors compared to labour and capital input productivities. The simulation analysis further reveals that the change across the sectors is non-linear, generally with larger impacts for productivities between 3-4 per cent and 8-10 per cent. The assumption of full employment for capital and intermediate inputs and an unemployment rate for the labour of 6.0 per cent still holds. The subsequent chapters

delve deeper into interventions for improving productivity across the sectors analyzed.

3.5 County GCP and medium-term prospects

The Gross County Product (GCP) is a measure of the economic size of counties, akin to the GDP obtained at the national level, and is prepared by the Kenya National Bureau of Statistics. To date, three GCP estimates for counties for 2019, 2021, and 2023, spanning the period 2013/14 to 2021/22 have been done. GCP is a key variable that helps county governments assess their economic progress over time and areas of intervention required to grow their local economies. Other than GCP, counties can also focus on productivity improvement for their key economic sectors.

Projections for County GCP are informed by various assumptions, which include: the establishment of County Aggregation and Industrial Parks (CAIPs), which are expected to boost economic activities and industrial potential in counties; efforts by county governments to enhance their source revenue for economic growth and service delivery; implementation of third generation CIDPs; efforts to ease the cost of doing business; and an end-to-end e-Government procurement system to both the national and county governments. CAIPs are a national-level undertaking with the support of the county governments and are in line with the BETA. The passing of various legislation that supports the functioning of county governments is also essential, which includes the County Allocation Revenue Bill, 2023, the Equalization Fund Appropriation Bill, 2023, and the County Governments Additional Allocations Bill, 2023. Counties are also vulnerable to risks that they

need to manage, which include the effects of climate change, accumulation of pending bills, insecurity issues, and other global economic shocks.

Counties play a key role in service delivery and promotion of economic activities. By taking measures that can boost productivity in their sectors of comparative advantage, county governments can be critical agents for driving economic growth at county and national levels. The optimistic projections for County GCP measured in constant prices are based on the 2023 estimates and are shown in Table 3.10. The projections are based on the exponential smoothing technique, which is a univariate forecasting method that assigns exponentially decreasing weights for past observations. The projections were, however, calibrated to ensure no negative growth projections.

Table 3.10: County GCP growth rate for the medium-term (optimistic outlook)

Counties	2019	2020	2021	2022	2023*	2024f	2025f	2026f
Mombasa	4.5	-3.1	8.8	6.2	7.8	8.1	8.5	8.8
Kwale	1.7	2.6	7.9	5.0	6.7	7.0	7.3	7.6
Kilifi	5.7	-2.2	8.5	4.4	6.7	7.0	7.3	7.6
Tana River	11.2	4.2	15.8	-9.1	5.8	6.2	6.5	6.9
Lamu	6.6	-2.1	3.1	4.4	4.6	4.7	4.8	5.0
Taita Taveta	5.0	-0.4	10.2	2.8	4.6	4.8	5.0	5.2
Garissa	2.0	4.2	6.7	-1.0	3.1	3.1	3.2	3.3
Wajir	6.5	0.6	13.9	-1.7	5.1	5.3	5.6	5.8
Mandera	8.7	9.9	5.5	-4.0	5.3	5.6	5.8	6.1
Marsabit	28.2	2.4	9.0	1.4	4.7	5.2	5.7	6.3
Isiolo	7.6	2.0	6.9	1.1	4.6	4.8	5.0	5.2
Meru	6.0	0.0	7.2	-0.4	4.4	4.6	4.7	4.8
Tharaka Nithi	1.1	4.3	8.2	3.5	4.5	4.7	4.9	5.1
Embu	-3.3	3.7	6.0	3.4	4.8	4.9	5.1	5.2
Kitui	20.5	2.4	-11.3	4.7	4.9	5.1	5.3	5.5
Machakos	1.1	0.3	10.3	2.4	3.6	3.8	3.9	4.0
Makueni	7.0	-3.9	6.9	0.5	3.8	3.9	4.0	4.1
Nyandarua	8.5	-2.3	2.3	8.0	8.4	8.7	9.1	9.4
Nyeri	7.1	2.0	3.6	1.9	3.8	3.9	4.1	4.2

Kirinyaga	5.2	1.2	6.0	5.5	6.0	6.3	6.6	6.9
Murang'a	2.0	4.3	7.6	2.2	4.2	4.4	4.5	4.7
Kiambu	5.3	-0.6	7.3	6.1	6.4	6.7	7.0	7.3
Turkana	8.0	1.3	-2.0	7.5	3.8	4.0	4.1	4.3
West Pokot	8.5	6.2	5.0	-6.0	5.1	5.3	5.5	5.7
Samburu	12.5	-0.6	2.3	4.1	3.4	3.5	3.7	3.8
Trans Nzoia	0.6	3.1	2.9	-1.8	3.0	3.0	3.0	3.1
Uasin Gishu	5.5	-1.9	11.3	2.5	4.5	4.7	5.0	5.2
Elgeyo Marakwet	7.5	1.8	4.4	-14.5	4.8	5.0	5.2	5.4
Nandi	-2.5	3.3	5.4	5.4	5.6	5.7	5.9	6.1
Baringo	9.0	0.0	8.0	2.1	5.0	5.2	5.5	5.8
Laikipia	3.8	0.6	0.8	9.8	9.9	10.0	10.1	10.2
Nakuru	7.0	0.0	11.0	-0.4	4.6	4.8	5.0	5.2
Narok	3.4	-0.1	8.1	5.5	5.7	6.0	6.2	6.5
Kajiado	7.2	1.6	0.0	11.4	11.5	11.5	11.6	11.7
Kericho	2.2	4.0	7.1	0.7	4.0	4.2	4.3	4.5
Bomet	-0.8	5.4	5.4	4.0	4.8	5.0	5.2	5.4
Kakamega	4.5	-0.9	10.1	5.2	5.4	5.7	5.9	6.2
Vihiga	4.7	1.0	3.7	5.2	5.4	5.6	5.8	6.1
Bungoma	2.3	0.4	4.8	5.6	5.7	5.9	6.1	6.3
Busia	9.8	1.8	5.0	6.9	7.3	7.7	8.2	8.7
Siaya	5.1	-0.4	7.8	5.3	5.5	5.8	6.0	6.3
Kisumu	5.0	2.2	4.8	5.8	6.1	6.4	6.6	6.9
Homa Bay	1.1	-0.6	13.3	3.5	4.5	4.7	4.9	5.1
Migori	4.3	-0.4	11.7	3.5	5.0	5.3	5.5	5.8
Kisii	0.8	0.6	5.4	9.0	7.5	7.8	8.1	8.4
Nyamira	0.3	2.9	3.1	3.0	3.1	3.2	3.3	3.4
Nairobi City	6.5	0.1	8.4	7.6	8.5	9.0	9.5	10.0
Total	5.2	0.5	7.2	4.6	5.9	6.2	6.5	6.8

Data source: Authors computations using KNBS (2023), Gross County Product Report 2023

Achieving the optimistic projections shown in Table 3.10 requires that county governments put more effort into achieving the medium-term outlook. This includes leveraging on their unique strengths, capitalizing on support from the national government such as the development of value chains and promoting digitization of the economy, leveraging on technology for development, attracting investment to boost productivity for their key sectors, and putting in place risk preparedness

and disaster mitigation measures. On average, counties are expected to grow at 5.9 per cent of their GCP and maintain 6.5 per cent GCP growth in the medium-term. Counties have different comparative advantages based on their uniqueness and conditions, such as ASAL and non-ASAL, including crop and livestock agriculture, manufacturing and industry, urbanization, and service-oriented activities. The outlook assumes favourable weather conditions to spur agricultural activities.

More specifically, counties from the high and medium potential areas such as Meru, Nakuru, Nyandarua, Murang'a, Kiambu, Bungoma, Kisii, Nandi, Kakamega, Narok, and Bomet have an advantage in agriculture, by focusing on agro-processing and agri-business. Counties of Nairobi City, Mombasa, Kiambu, Machakos, Kilifi, Nakuru, Kisumu, Meru, Kakamega, and Kericho are the top 10 counties that contribute to manufacturing activities (KNBS, 2023), while service activities are prevalent in Nairobi City, Mombasa, Kiambu, Nakuru, Kisumu, Uasin Gishu, Machakos, Kilifi and Kakamega counties. On urbanization, data shows that counties with large commercial centres, such as Nairobi City, Mombasa, Kiambu, Nakuru, Machakos, and Kisumu also have a significant share of contribution to other industrial activities. For the ASAL counties, investing in livestock production and leveraging on programmes such as the livestock off-take programme during natural disasters, creative economy, and wholesale and retail, and transport and storage services, could be areas to focus on.


3.6 Key messages and Policy Recommendations

3.6.1 Key messages

1. Globally, growth is projected to average 3.1 per cent in 2024 and 3.2 per cent in 2025, while for Sub-Saharan Africa, it is projected to grow at 3.8 per cent and 4.1 per cent, respectively, in 2024 and 2025. Estimates by the IMF project Kenya's growth at 5.0 per cent in 2024 and 5.3 per cent in 2025, while the Budget Policy Statement 2024 projects 5.9 per cent. Growth in the first three quarters of 2023 averaged 5.6 per cent, supported by strong growth in the agriculture sector, premised on favourable weather conditions and the government fertilizer subsidy to farmers.
2. At baseline, the economy is projected to grow at 6.2 per cent in 2024, and average 6.7 per cent in the medium-term, while inflation remains within the policy target range. Growth is likely to accelerate to 6.1 per cent in 2024, and 6.6 per cent in the medium-term with the opportunities coming to fruition, while depressed to 5.3 per cent in 2024, and 5.6 per cent in the medium-term should the downside risks materialize, including poor weather prospects and debt vulnerabilities. The robust growth will be supported by prospects for good weather, growing partnerships, and ongoing initiatives to implement the BETA and MTP IV programmes.
3. Counties are critical in supporting accelerated growth. However, some counties have experienced negative growth in their gross county products for the past years since their establishment. Counties have different areas of comparative advantages depending on whether they are in arid, semi-arid, or non-arid areas.
4. Labour productivity has the largest contribution to value added in the agrifood sector while capital and intermediate input productivity has the largest contribution to value added in the manufacturing sector. This shows that the agrifood sector is highly labour-intensive, while the manufacturing sector has a higher intensity in capital and intermediate inputs.
5. Improvements in total factor productivity in one sector have direct effects on that sector and indirect effects on other sectors, which demonstrates forward and backward sectoral linkages. From the simulations, the services sector has revealed the largest indirect linkages with the agrifood and manufacturing sectors. The agri-food sector manifests the largest direct effects for total factor productivities between 1.0 per cent to 3.0 per cent while the manufacturing sector manifests the largest direct effects for total factor productivities of 4.0 per cent and above.

3.6.2 Policy recommendations

1. National and county governments could implement programmes and initiatives that raise productivity across their economic sectors. Growing productivity in labour through skills development, capital productivity by augmenting with technology, and enhancing total factor productivity will be key for placing the country on a higher growth path.
2. The agriculture sector is core for food security, employment creation, and contribution to economic growth. There is a need to invest in infrastructure to support irrigated agriculture, so that the country is not overly dependent on rain-fed agriculture, coupled with continued support through inputs such as fertilizer, early maturing seeds, and extension services for farmers. Furthermore, efforts towards developing value chains in agriculture and supporting agro-processing and agri-business could help improve agricultural activities. The need to mitigate and adapt to climate change at both the national and county governments is essential.
3. The manufacturing sector has higher intensity compared to other sectors in capital and intermediate inputs. It is important, therefore, to encourage innovation in manufacturing processes and technologies to improve efficiency and productivity through tax incentives, grants, and public-private partnerships for research institutions and companies. Initiatives towards technology transfer and adoption for the manufacturing sector could be pivotal for the sector. There is also a need for trade policies favourable to the manufacturing sector, including reducing tariffs on imports of machinery, equipment, and raw materials to lower production costs and improve productivity.
4. Prudent monetary and fiscal policy interventions are critical to support aggregate demand, especially investment, consumption, and net exports. This means leveraging on upside risks such as good weather and strategic partnerships, while mitigating potential risks such as poor rainfall patterns and debt vulnerabilities. Policy makers need to be more vigilant of the likely risks and mitigate them.
5. County governments have the potential to strengthen growth rates by leveraging on various government initiatives, such as involvement in value chains and accelerating technological progress, promoting agro-processing, and investing in productive resources in their areas of comparative advantage.
6. Implement strategies to enhance productivity and innovation within the services sector through investment in technology, skills development, and digital infrastructure development to facilitate collaboration, and access to information. Given the higher productivity impacts arising from the services sector, there is a need for efforts towards fostering more synergies and interdependence between the services sector and other sectors, mainly the manufacturing sector, through the development of industry clusters and knowledge sharing. The services sector could provide support services such as logistics, marketing, and research for development to manufacturing firms for enhanced productivity and competitiveness. On its part, the manufacturing sector could be offered incentives to outsource services such as logistics, design, and marketing from local service providers, thus supporting backward linkages.

LABOUR PRODUCTIVITY
IN MANUFACTURING

The low productivity of manufacturing is attributable to labour-intensive technology, especially among the MSMEs, which constrains efforts to increase the share of manufacturing to gross domestic product. At the firm level, labour productivity is lower in micro enterprises and firms operating in the informal sector. Productivity is curtailed by a high presence of 1st and 2nd skill levels despite the demand for skilled labour. This is further exacerbated by low investment in research for development and innovation and low financial investment. The high cost of electricity and low access in micro firms reduces labour productivity. To increase the sector's productivity, it is important to upgrade and equip existing constituency industrial development centres to promote an innovation culture among MSMEs. Moreover, there is a need to provide fiscal incentives to firms that participate in the Kenya Industrial Research and Development Institute (KIRDI) Industrial Innovation Programme aimed at commercializing viable innovations. These fiscal incentives can be complemented by increased government expenditure on research for development and innovation to the recommended 2 per cent of GDP. To develop and enhance skills, the provision of incentives to students enrolling in Science, Technology, Engineering, and Math (STEM) through scholarships and bursaries is critical. It is also imperative to promote the use of off-grid productive use of energy by providing tax incentives to firms investing in energy-efficient technologies. Enhancing access to financial capital for startups is also important in enhancing labour productivity.

4.1 Introduction

The manufacturing sector is a key driver of structural change due to its critical role in the growth of economies, particularly those with low income per capita (Weiss et al., 2016). Expansion of the manufacturing sector can foster growth, promote the adoption of innovative technologies, expand, and diversify the economy's product space, and build resilience to shocks. In addition, higher wages paid in manufacturing jobs and formal employment opportunities support the improvement of living standards. Manufacturing is essential for economic growth due to its impact on productivity and job creation. As the sector grows, it creates new employment opportunities, which in turn

increase consumer spending and stimulate economic activity. The sector also drives technological innovation, which is critical for long-term economic development. New technologies and processes improve efficiency, reduce costs, and increase competitiveness, leading to sustained economic growth.

This chapter analyzes the productivity of the manufacturing sector and reviews the performance of the sector at the global, regional, and national levels. It further illustrates the contribution of the workforce towards manufacturing value added by assessing value labour productivity. The subsequent sections highlight labour productivity in micro, small, and medium enterprises (MSMEs) using the MSMEs Survey of 2016. The chapter concludes

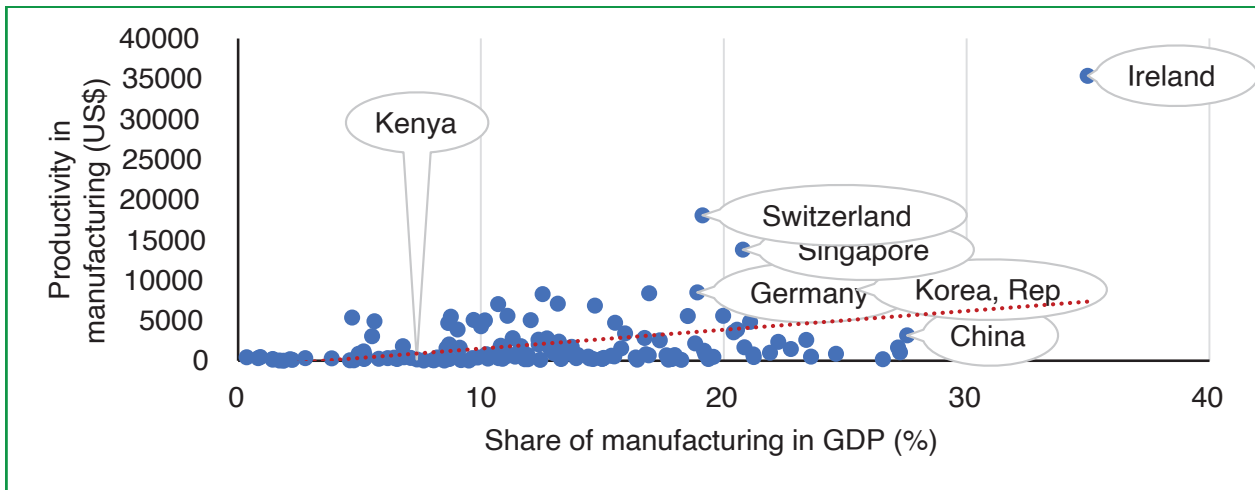
by analyzing the factors that influence labour productivity in manufacturing and provides policy recommendations for enhancing labour productivity in the sector.

4.1.1 Overview of global trends in manufacturing

High labour productivity in manufacturing is associated with a high share of manufacturing in GDP in Ireland, Switzerland, Korea,

Singapore, China, and Germany (Figure 4.1). In Sub-Saharan Africa, the manufacturing sector’s share of GDP has been declining, but there are variations between countries. For example, in Nigeria, and Namibia, the share of manufacturing to GDP was 15 per cent and 11 per cent, respectively, in 2021 with labour productivity of US\$ 216 and US\$ 449 whereas in Botswana and Kenya, the share of GDP was below 10 per cent at 5.0 per cent and 7.6 per cent, respectively, during the same period.

Figure 4.1: The relationship between labour productivity in manufacturing and share of manufacturing in GDP, globally, 2021

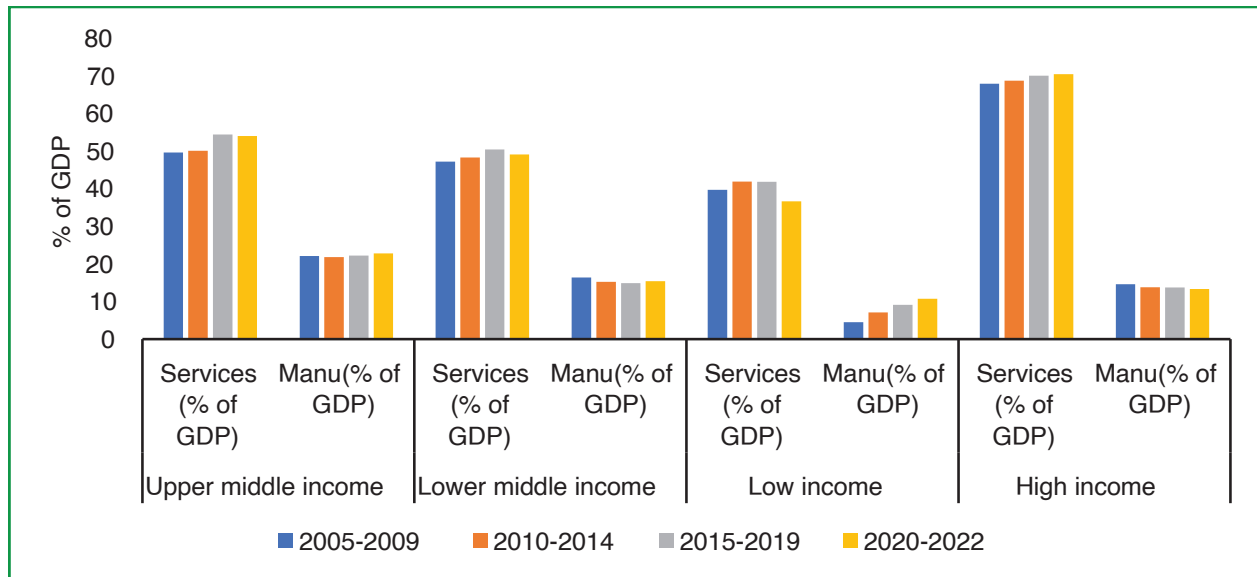


Data source: World Bank (2022), World Development Indicators

The share of manufacturing in GDP varies across income levels. For high-income countries, the transformation process is characterized by a declining share of manufacturing as the services sector expands. For example, in high-income countries, the share of services in GDP increased from 67.9 per cent in 2005 to 74.4 per cent in 2021, while that of manufacturing has decreased from 14.6 per cent to 13.3 per cent during the same period (Figure 4.2). The shift towards a higher share of services in GDP

compared to manufacturing in high-income countries indicates a transition towards a more service-oriented economy. For Kenya, where the manufacturing sector aims for a 15 per cent contribution to GDP, it is important to enhance productivity and efficiency within the sector to meet this target. As the country aspires to transition to an upper middle-income economy, investing in technology, skills development, innovation, and infrastructure will be important in supporting and accelerating sector growth.

Figure 4.2: Share of manufacturing and services in GDP by income level and productivity levels (%), 2005-2022

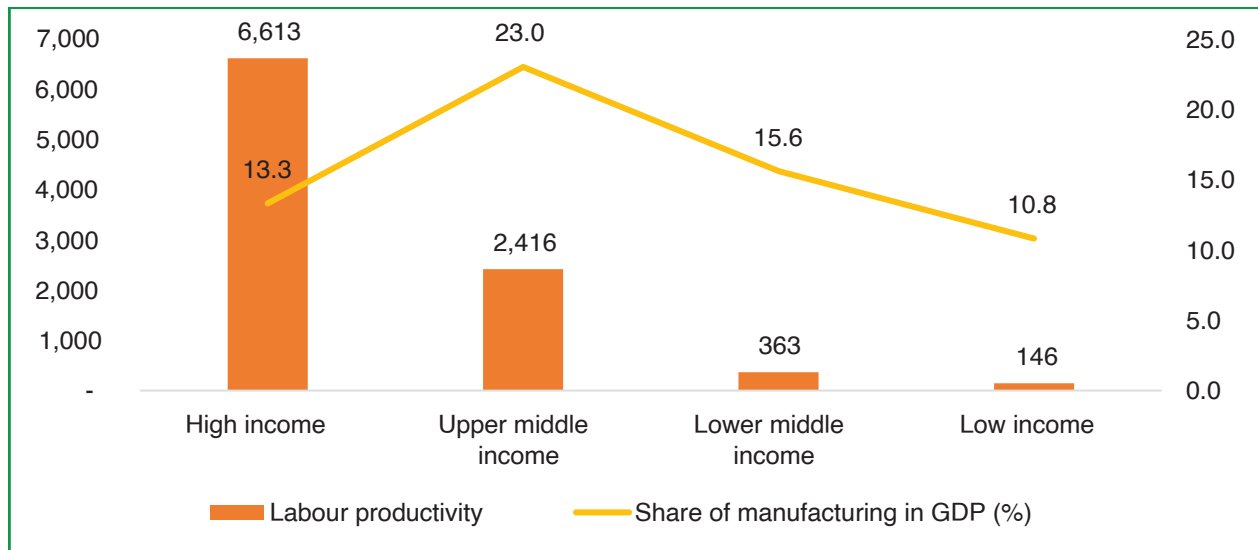


Data source: World Bank (2022), World Development Indicators

High-income countries had the highest labour productivity in manufacturing in 2021, despite their share of manufacturing in GDP being lower than that of upper-middle income and lower-middle-income countries, whose labour productivity is significantly lower. The transition to medium-high and high-technology activities allowed high-income countries to focus on higher value-added production and innovation, thus maintaining higher labour productivity. In upper-middle-income countries with lower labour productivity of US\$ 2,416, the share of

manufacturing in GDP is higher at 23.0 per cent, and this is because these countries prioritize industrialization as a key driver of economic growth, leading to a higher concentration of manufacturing activities. Lower-middle-income countries exhibit lower labour productivity at US\$ 363, with a share of manufacturing GDP at 15.6 per cent whereas low-income countries have the lowest labour productivity at US\$ 146, with a share of manufacturing in GDP at 10.8 per cent (Figure 4.3).

Figure 4.3: Share of manufacturing in GDP and productivity by income level (%), 2021



Data source: World Bank (2022), World Development Indicators; UNIDO, 2022

Globally, medium and high-technology (MHT) firms such as the manufacture of computers, electronics and optical products, electrical equipment, and pharmaceuticals have the highest contribution to manufacturing sector performance. Between 2000 and 2009, the share of manufacturing value added (MVA) from medium-high and high technology sub-sectors was 21.7 per cent, increasing to 23.4 per cent between 2010 and 2021. In Africa, technology use in manufacturing has led to an increase in the share of MVA in medium-high and high technology from 12.3 per cent to 12.7 per cent during the same period. Kenya's share of MHT in manufacturing increased from 9.9 per cent in 2000 to 15.1 per cent in 2021 and is higher than Africa's average share. This indicates an expansion in technology use in the sector. Moreover, current government initiatives on pharmaceutical manufacturing and the establishment of electronic manufacturing industries such as phones will also support the expansion of MHT activities in the sector.

4.1.2 Overview of manufacturing in Kenya

The manufacturing sector plays a significant role in its contribution to GDP, spurring the growth of other sectors through its forward and

backward linkages and employment creation. The government has set targets aimed at improving the performance of the sector. In the first medium-term plan (2008-2012), the government aimed to increase the contribution of manufacturing to GDP by at least 10 per cent per annum. The 'Big Four Agenda' aimed at increasing the share of manufacturing to GDP to 15 per cent and agro-processing to at least 50 per cent of total agricultural output between 2018 and 2022. The current development agenda (Bottom-up Economic Transformation Agenda) highlights the potential of various manufacturing sub-sectors, such as the leather sub-sector, to create employment both in the formal and informal sectors and the capacity of Kenya to manufacture pharmaceutical products.

The contribution of manufacturing to GDP has fluctuated over the years due to the high cost of production, competition from counterfeit goods, low technology adoption, and recurring droughts. At independence, the sector contribution averaged 10 per cent between 1964 and 1973 (KAM).¹¹ The creation of an enabling environment for foreign investment, incentives,

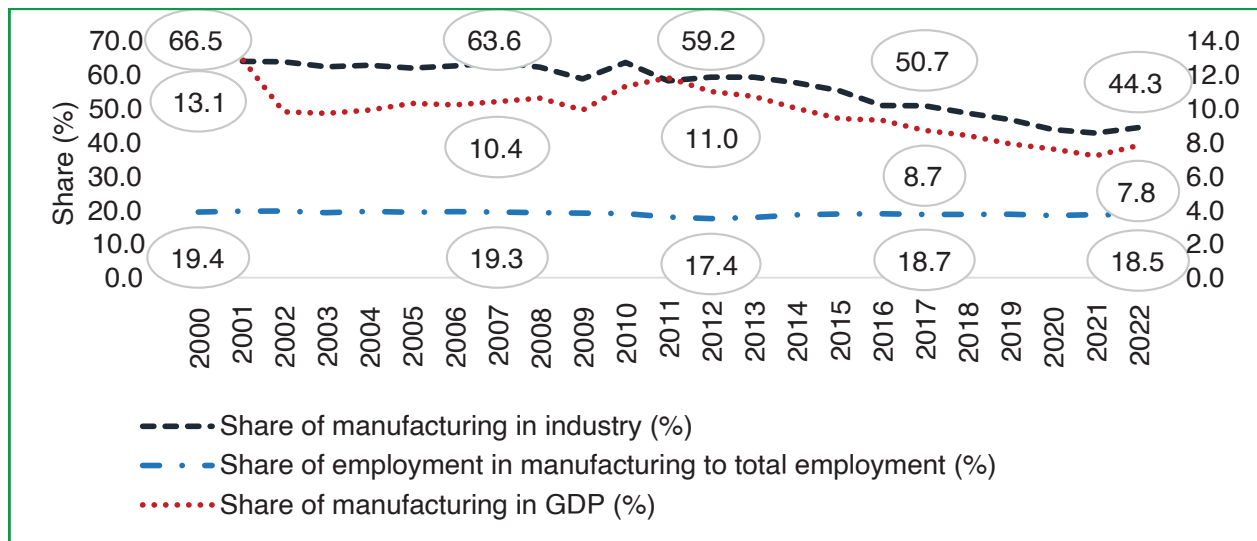
¹¹ <https://kam.co.ke/kam/wp-content/uploads/2018/10/KAM-Manufacturing-Deep-Dive-Report-2018.pdf>

and protective measures from the government led to the expansion of the manufacturing sector in the 1960s and the 1970s. At the onset of the millennium, the sector contribution was at 13.1 per cent (Figure 4.4), which is partly attributed to the signing of the African Growth and Opportunities Act (AGOA) that allowed duty-free export of garments and textiles to the US.¹² During this period, there was an increase

in the value of garments and textile exports to US\$ 347.8 million from US\$ 109.4 million between 2000 and 2005. The implementation of the Economic Recovery Strategy for Wealth and Employment Creation (ERSWEC) led to an increase in sector contribution to GDP from 9.7 per cent in 2003 to 10.4 in 2007 (Figure 4.4).

¹² <https://agoa.info/about-agoa.html#:~:text=The%20African%20Growth%20and%20Opportunity,was%20extended%20to%20September%202025.>

Figure 4.4: Performance of Kenya’s manufacturing sector (%), 2000-2022



Data Sources: KNBS (Various), Statistical Abstracts and Economic Surveys

In the implementation of the Kenya Vision 2030, there was an average growth of 10.9 per cent and 9.4 per cent in the first medium-term plan (2008-2012) and second medium-term plan (2013-2017), respectively. This declined to 7.6 per cent in the third medium-term plan (2018-2022). The sector plays a significant role in its contribution to industry, contributing 66.5 per cent to industry value-added in 2000, which later declined to 44.3 per cent in 2022. This is partly due to the expansion in other sectors such as construction, whose contribution to industry increased from 18.2 per cent to 40.4 per cent during the same period.

The government has made several efforts aimed at creating an enabling environment for sector growth including the implementation of

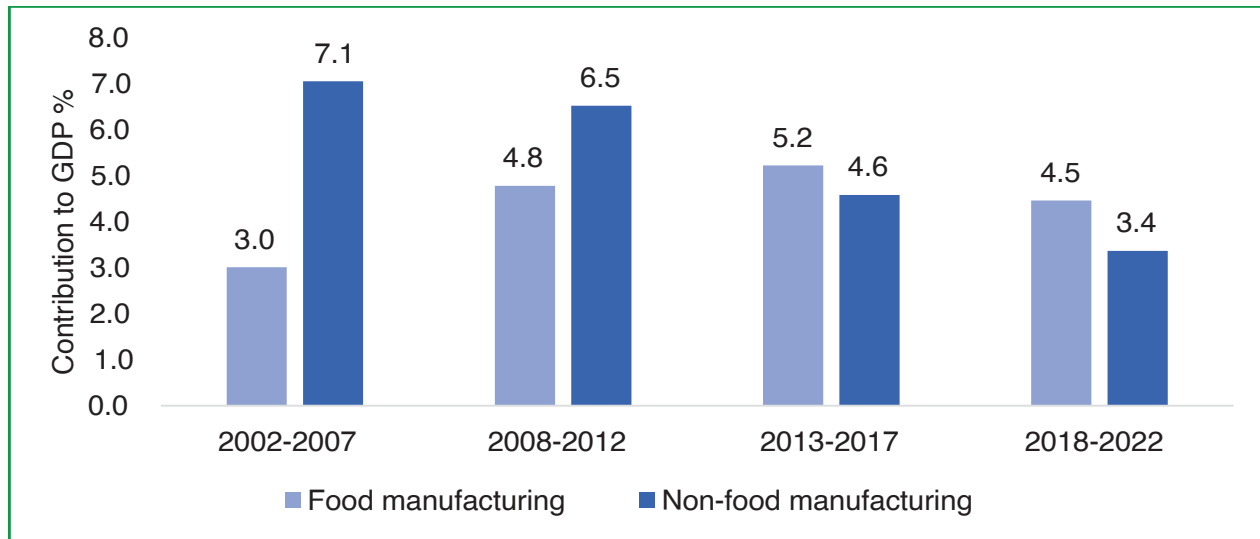
Vision 2030 sector plans. In the early years of independence, the import substitution phase led to high industrial growth rates, which benefited the sector. During the ERS period, the investment code was developed, through the Investment Promotion Act of 2004, to improve the investment environment. At the same time, the Kenya Investment Authority Act was enacted in 2006 to provide a one-stop-shop for licensing and registration of businesses. Further, the National Exports Strategy (NES) was formulated to improve the competitiveness of the sector. Through the NES, the Kenya Integrated Programme was implemented, whose objective was to improve the productivity of select value chains such as Leather, Apiculture, and Fish processing for the export market. Similarly, a National Industrial Policy

was prepared in line with the Kenya Vision 2030 to guide the development of the manufacturing sector. Other initiatives include the Master Plan for Kenya’s Industrial Development (MAPSKID) of 2008, which identified priority sectors such as agro-processing; agro-machinery; electrical, and electronics/ICT to drive sector growth.

Prioritization of various agricultural value chains such as fish processing, value addition in food and beverages sub-sectors, and livestock products led to an increased contribution of food manufacturing to GDP from 3.0 per cent between 2002 and 2007 to 4.5 per cent in the third medium-term plan (2018-2022) (Figure 4.5). At the same time, the contribution of non-food manufacturing was more than double

the contribution of food manufacturing at 7.1 per cent but declined to 3.4 per cent during the same period. The non-food manufacturing sector comprised textile industries such as Kisumu Cotton Millers whose collapse was due to the liberalization of the cotton industry that made it difficult for the sub-sector to compete against imports and second-hand clothing. Furthermore, the presence of substandard and counterfeit products with lower prices has negatively affected the market share of locally manufactured goods, reducing the ability of firms to invest in innovation. Moreover, the exit of manufacturing firms from Kenya due to an inadequate conducive environment has led to a decline in the share of non-food manufacturing in GDP.

Figure 4.5: Contribution to GDP by type of manufacturing (%) (2002-2022)



Data source: KNBS (Various), Statistical Abstracts

At a firm level, micro and small enterprises form the largest proportion (97 per cent) of firms operating in the sector. Despite this, medium and large industries that constitute less than 5.0 per cent of the total number of enterprises contribute over 60 per cent to the manufacturing sector GDP, whereas micro and small firms contribute to an estimated 20 per cent to the sector GDP (Government of Kenya, 2012). These differences point to the significant challenge faced by micro and small enterprises

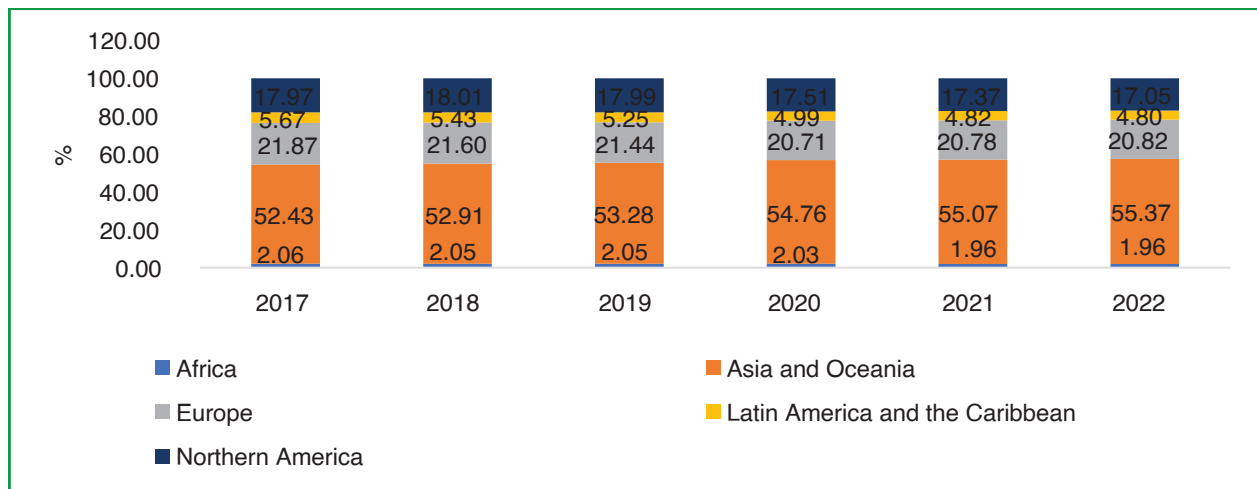
in terms of productivity, efficiency, access to resources, and competitiveness compared to their larger counterparts. Addressing these disparities through targeted support, such as access to finance, technology upgrades, skills development, and infrastructure upgrading, is crucial for enhancing the contribution of micro and small enterprises to the manufacturing sector GDP and fostering overall economic growth.

4.1.3 Global share of manufacturing value added

The manufacturing activity varies significantly across regions. The African region has a limited presence in the manufacturing sector on a global scale with a decline from 2.06 per cent in 2017 to 1.96 per cent in 2022. Asia and Oceania had the highest share increasing from 52.43 per cent to 55.37 per cent during the same period (Figure 4.6). Asia's dominance in global manufacturing is driven by countries such as China and India, which have contributed significantly to this upward trajectory. The regional ability to adapt to changing market demands, investment in advanced technologies, and a developed strong industrial base plays a vital role in this

growth. In contrast to Asia and Oceania, other regions experienced a gradual decline in their contribution towards global MVA. For example, Europe's share in world MVA declined from 21.87 per cent in 2017 to 20.82 per cent in 2022. The loss of global market shares, particularly to countries such as China, has led to a decline in Europe's competitiveness in manufacturing. This decline is in industries such as textiles, electronics, and electrical equipment (Marschinski and Turegano, 2019). A similar decline was observed in Latin America where the share of MVA decreased to 4.80 per cent in 2022 from 5.67 per cent in 2017. There was a slight increase in Northern America from 17.97 per cent in 2017 to 18.01 per cent in 2018, but this declined to 17.05 per cent in 2022.

Figure 4.6: Trends in share of manufacturing value added, 2017-2022 (constant 2015, US\$)



Data source: UNIDO (2022) Statistics

In terms of share of manufacturing in industry, the share of Africa's manufacturing in total industry is the lowest, and it declined from 48.4 per cent in 2017 to 45.7 per cent in 2018. This later increased to 54.3 per cent in 2020 followed by subsequent decreases in 2021 and 2022 to 52.0 per cent and 50.5 per cent, respectively (Table 4.1). In Asia and Oceania, Europe, and Northern America, the share of

manufacturing in industry has remained above 70 per cent during the period despite year-on-year fluctuations. In Latin America and the Caribbean, the share declined from 70.1 per cent in 2017 to 66.2 per cent in 2018, which later increased to 68.6 per cent in 2020. Further decline occurred to 66.7 per cent in 2021 and a slight recovery to 67.5 per cent in 2022.

Table 4.1: World share of manufacturing in industry, 2017-2022

Country	2017	2018	2019	2020	2021	2022
Africa	48.4	45.7	48.4	54.3	52.0	50.5
Asia and Oceania	77.3	76.3	76.6	78.9	77.7	74.9
Europe	78.4	77.7	77.7	78.5	76.6	73.1
Latin America and the Caribbean	70.1	66.2	67.1	68.6	66.7	67.5
Northern America	75.2	75.2	75.4	76.3	73.7	72.1

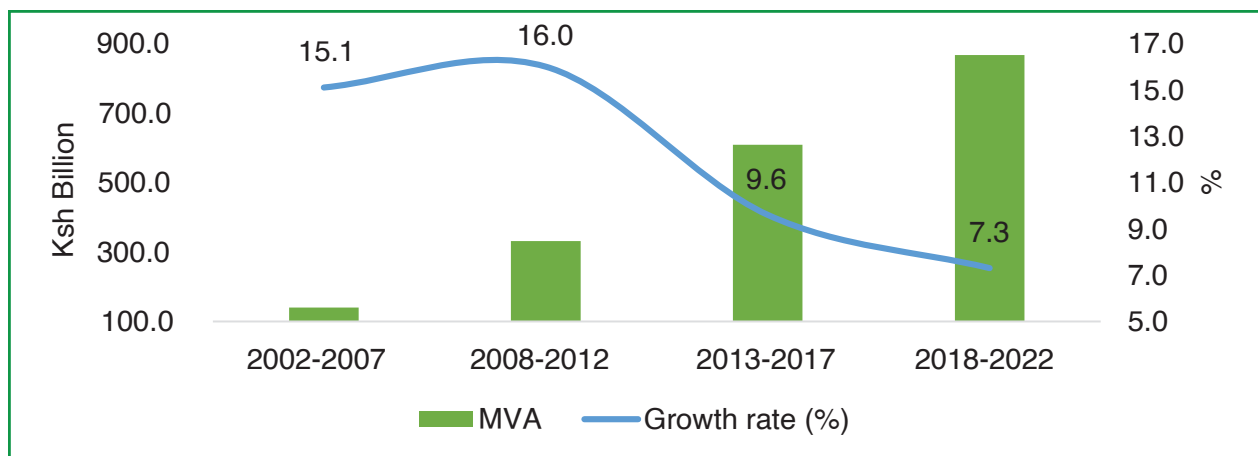
Data source: UNIDO (2022) Statistics

4.1.4 Manufacturing value added in Kenya

Manufacturing value added exhibited a consistent upward trend, where it increased from Ksh 140 billion between 2002 and 2007 to Ksh 866 billion in the third medium-term plan (2018-2022). Despite this increase, the growth rates in MVA exhibit a varied pattern over the years. Implementation of the Economic Recovery Strategy for Wealth and Employment Creation led to an average growth rate of 15.1 per cent. Despite disruptions from the post-election crisis in 2007/08, the drought in 2011, and the global financial crisis (GFC), the manufacturing sector grew at a rate of 16.0 per cent during the implementation of the first medium-term plan (2008-2012). In the subsequent period, the sector growth rate declined from 16.0 per cent to 9.6 per cent in the second medium-term plan

(2013-2017). Further decline occurred in the third medium-term plan (2018-2022) where the sector grew at 7.3 per cent compared to 9.6 per cent in the second medium-term plan (2013-2018) (Figure 4.7). While some sub-sectors faced disruptions due to changing consumer preferences, environmental concerns, and global events such as the COVID-19 pandemic, others thrived due to innovation, adaptability, and increased demand. Sector growth was attributed to growth in the manufacture of pharmaceuticals, chemicals and chemical products, food products and beverages, and textile and wearing apparel while periods of low growth rates were due to low performance in the manufacture of wood and products of wood, wearing apparel, and non-metallic mineral products.

Figure 4.7: Trends and growth rates in MVA, 2002-2022, Kenya



Data source: KNBS (Various), Statistical Abstracts and Economic Surveys

(a) Food manufacturing

The share of food manufacturing in total MVA increased from 15.0 per cent in 2002-2007 to 28.4 per cent in 2008-2022 (Table 4.2). This was supported by expansion in the manufacture of food, whose contribution to MVA increased from 21.6 per cent to 44.7 per cent during the same period. This performance was supported by an increase in value added through the processing and preservation of meat and fish, and the processing of dairy products and beverages.

(b) Non-food manufacturing – agro-processing

Agro-processing of non-food products experienced a decline in its share to MVA from 3.2 to 2.1 per cent between 2002 and 2022. This was because of a drastic decline in the manufacture of tobacco products and the manufacture of wood and products of wood from 1.1 per cent during the ERSWEC period to 0.7 per cent in the first medium-term plan (2008-2012). This later increased to 1.2 per cent in the second medium-term plan (2013-2017) and later decreased to 0.8 per cent between 2018 and 2022. The fluctuation in this sub-sector is because of environmental concerns and a shift towards sustainable alternatives in construction and furniture manufacturing. Moreover, the fluctuation in the manufacture of leather and leather products and wearing apparel contributed to this decline. Despite the overall decline in agro-processing of non-food products, the manufacture of textiles experienced a gradual increase during the implementation of the economic recovery

strategy for wealth and employment creation and the earlier years of implementation of the Kenya Vision 2030. The implementation of the AGOA contributed to the growth and expansion of these sub-sectors during the review period. In the subsequent period of Vision 2030, the share of the sub-sectors overall MVA declined partly due to increased competition, cheap imports, and supply chain disruptions during the COVID-19 pandemic.

(c) Non-food manufacturing – non-agro-processing

Manufacture of non-agricultural products experienced a decline in its share of MVA from 3.3 per cent between 2002 and 2007 to 2.2 per cent during the implementation of the third medium-term plan (2018-2022). A significant decline was observed in the manufacture of non-metallic mineral products, whose value added fell from 3.2 per cent to 1.1 per cent during the review period. Furthermore, fluctuations in the value added from the manufacture of fabricated metals, furniture, and basic metals led to a dismal performance. Notwithstanding, the manufacture of pharmaceuticals and chemicals and chemical products demonstrated remarkable growth. The pharmaceutical sector experienced robust growth, increasing from 0.1 per cent between 2008 and 2012 to 3.0 per cent implementation of the third medium-term plan (2018-2022), whereas the chemical sub-sector increased from 1.5 per cent to 1.9 per cent (Table 4.2). The resilience of these sectors also highlights the potential for continued growth in the manufacturing industry as it adapts to evolving market dynamics.

Table 4.2: Share of type of processing value added in MVA (%), 2002-2022

Sub-sector	2002-2007	2008-2012	2013-2017	2018-2022
Food manufacturing	15.0	14.9	21.0	28.4
Non-food manufacturing – Agro-processing	3.2	2.8	2.9	2.1
Non-food manufacturing - Non agro-processing	3.3	3.2	2.9	2.2

Data source: KNBS (Various), Statistical Abstracts

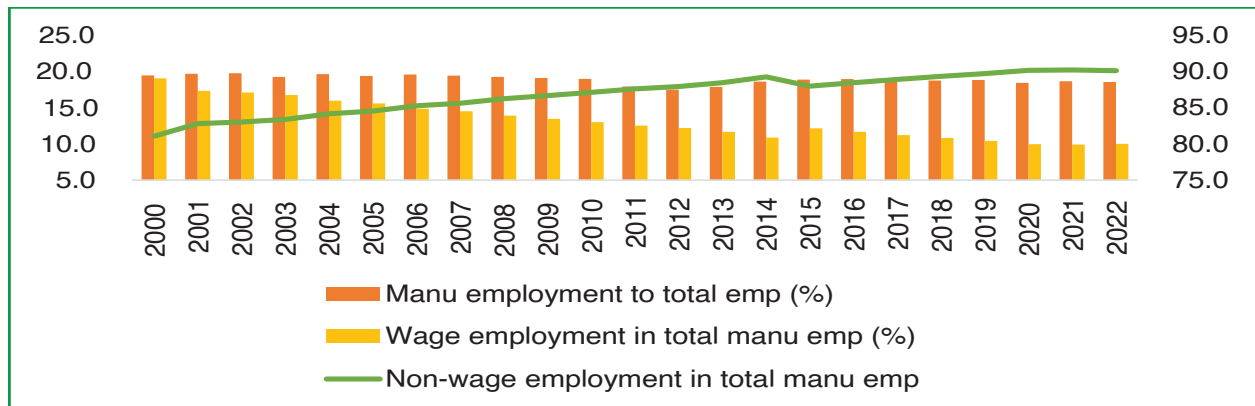
4.2 Employment Trends in Manufacturing

The manufacturing sector is a source of employment, absorbing on average 18.8 per cent of the workforce (both formal and informal) between 2000 and 2022. At the beginning of the Millennium, the sector was employing 19.4 per cent of the workforce, but this decreased to 18.5 per cent in 2022 (Figure 4.8). Low employment was observed between 2012 and 2014 when the sector absorbed 17.2 per cent of the labour force. This was because of the aftermath effects of the global financial crisis, which led to a decline in industrial activities, and the aftermath of the prolonged drought, which affected the agriculture sector and consequently agro-processing. Moreover, the COVID-19 pandemic in 2020 had a significant impact on manufacturing employment worldwide. The share of employment in manufacturing dropped to 18.3 per cent as lockdowns disrupted supply

chains, and reduced consumer demand affecting production.

The share of wage employment in the sector declined from 19.0 per cent to 10.0 per cent while employment in the informal sector increased from 81.0 per cent to 90.0 per cent during the same period. The consistent informal manufacturing sector growth indicates the importance of micro and small-scale industries in absorbing labour. These enterprises often provide opportunities in areas where formal employment is limited. While MSMEs absorb the largest labour force in manufacturing, they provide low quality employment characterized by low wages and poor working conditions, which hinder the attainment of high levels of labour productivity. Moreover, limited access to technology, low skill levels, and limited investment in research for development and innovation hinder their ability to adopt efficient production techniques.

Figure 4.8: Share employed in manufacturing (2000-2022)



Data source: KNBS (Various), Economic Surveys

In terms of type of processing, food processing absorbs the largest share of employment, averaging 17.4 per cent during the review period. The sector experienced a decline in employment from 18.6 per cent in 2002-2007 to 16.0 per cent in the second medium-term plan (2012-2017) (Table 4.3). This later increased to 18.5 per cent in the third medium-term plan (2018-2022). Employment shares in non-food

agro-processing declined from 6.1 per cent to 5.3 per cent between 2002 and 2022. This was because of the decline in employment in the textile sub-sector, whereas non-agricultural processing increased from 1.8 per cent to 2.3 per cent in the first medium-term plan (2008-2012), which later decreased to 2.1 per cent in the third medium term plan (2018-2022).

Table 4.3: Employment by type of processing, 2002-2022

Sub-sector	2002/07	2008/12	2013/17	2018/22	Growth rate (2002-2022)
Food manufacturing	18.6	16.6	16.0	18.5	1.1
Non-food manufacturing - agro-processing	6.1	5.4	5.8	5.3	0.2
Non-food manufacturing - non agro-processing	1.8	2.3	2.2	2.1	32.6

Data source: KNBS (Various), Statistical Abstracts

Employment in the manufacturing sub-sectors has fluctuated over the years. Manufacture of food, textiles, wearing apparel, and rubber and plastic products sub-sectors absorb the largest proportion at 31.7 per cent, 16.8 per cent, 7.5 per cent, and 4.5 per cent, respectively, between 2002 and 2022. Low shares of employment are in the manufacture of computers and electronics, and coke and refined petroleum products. In terms of growth, the manufacture of tobacco products experienced the largest reduction in the share of employees followed by the manufacture of coke and refined petroleum products, and the manufacturing of computers and electronics. Despite being the second largest employer, textile manufacturing experienced declining growth rates at 26.5 per cent during the review period, indicating challenges faced by this sub-sector due to competition from affordable *mitumba* clothes, high cost of production, and low demand for cotton, which led to collapse of textile industries.

The sub-sectors with positive employment growth include the manufacture of fabricated metals, chemicals, and chemical products, food, wearing apparel, and leather and leather-related products at 495.5 per cent, 167.9 per cent, 95.3 per cent, and 87.0 per cent, respectively. The high growth rates in the manufacture of fabricated metals are due to the expansion of the *jua kali* industry through various policy initiatives such as the implementation of the Kenya Industrial Estates, which supports the *jua kali* sector by providing preconstructed industrial sheds, extension services, management and technical training,

raw materials, and subsidized credit. KIE's initiatives, including the Nyayo Jua Kali, sheds programme, aimed to provide workspaces and support for MSEs, contributing to the expansion of the sub-sector. Furthermore, the launch of the Jua Kali Sector Strategic Plan (2022-2027) is aimed at improving the productivity of the sector and consequently employment opportunities.

4.3 Labour Productivity in Manufacturing

Labour productivity is a key factor in the manufacturing sector, given that a significant proportion of manufacturing relies on labour-intensive technology. Labour productivity is measured as the total volume of output (Manufacturing Value Added) produced per unit of labour (number of employed persons) during a given period.

4.3.1 Global trends in labour productivity

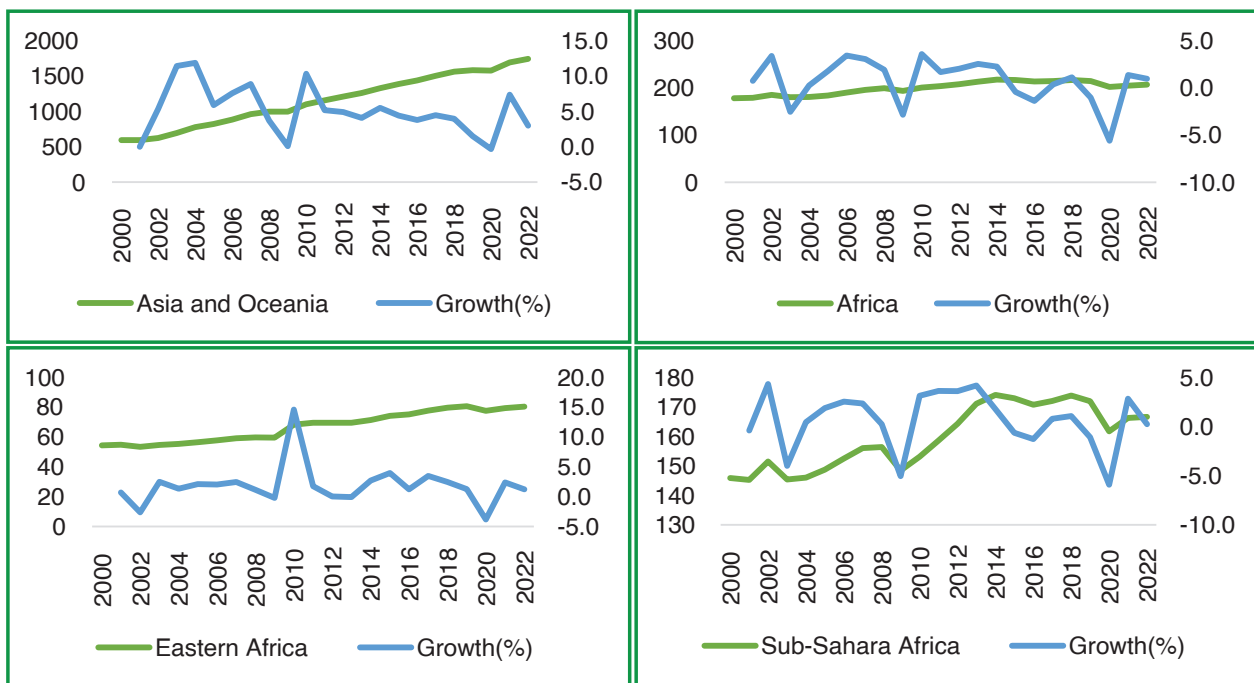
Labour productivity in manufacturing varies significantly across different regions. Globally, labour productivity increased from US\$ 1,149 (constant 2015 prices) in 2000 to US\$ 1,874 in 2022 (Figure 4.9). In Asia and Oceania, labour productivity more than tripled from US\$ 589 in 2000 to US\$ 1,735 in 2022 while for the African region, labour productivity improved from US\$ 177 to US\$ 206 during the same period. For Sub-Saharan Africa, productivity increased from US\$ 146 to US\$ 162 while for the Eastern Africa region, it increased to US\$ 80 in 2022 from US\$ 54 in 2000. High labour productivity in Asia and Oceania was because of an emphasis on technology and innovation, with

a focus on the manufacture of semiconductors and electronics, whereas Africa’s focus on infrastructure-led growth has not translated into a manufacturing-led take-off, emphasizing the critical role of technology in driving the manufacturing sector expansion.

In terms of labour productivity growth rates, the world’s labour productivity grew at an average rate of 2.30 per cent in the review period. Asia and Oceania experienced the highest growth

rates averaging 5.1 per cent, which increased the share of manufacturing in GDP from 19.4 per cent to 24.2 per cent between 2000 and 2022. For the African region, growth in labour productivity averaged 0.7 per cent, with the share of manufacturing in GDP decreasing from 12.7 per cent to 10.9 per cent. For the Eastern Africa region, productivity grew at a faster rate, averaging 1.9 per cent during the review period compared to SSA at 0.7 during the same period.

Figure 4.9: Labour productivity in manufacturing (constant 2015 US\$), 2000-2022



Data source: UNIDO (2023)

On average, Kenya had higher productivity at US\$ 144 compared to Ethiopia at US\$ 22, Uganda at US\$ 112, and Tanzania at US\$ 64. Although labour productivity in Kenya increased from US\$ 139 in 2000 to US\$ 156 in 2022, it was five (5) times lower than in South Africa. Productivity growth for Kenya was dismal at 0.6 per cent compared to other countries in the region. Ethiopia, for example, had the highest growth rate at 7.5 per cent while Uganda and Tanzania grew at 3.7 per cent and 4.3 per cent, respectively. This low growth rate in

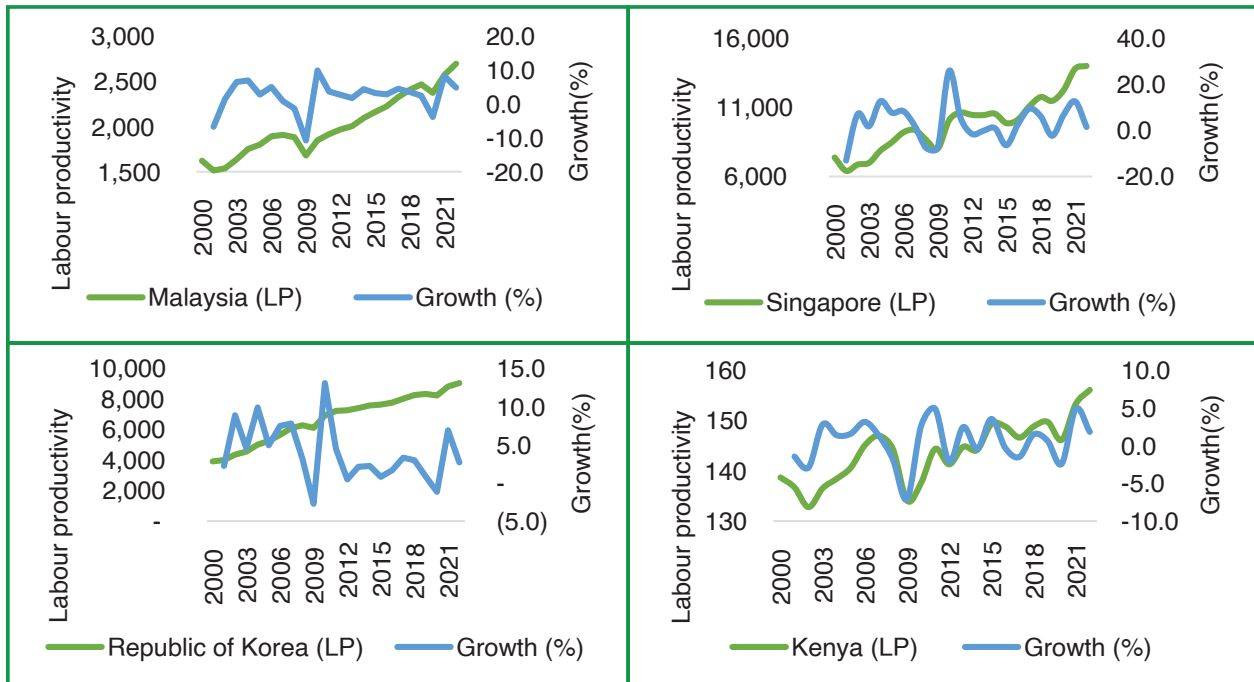
Kenya’s productivity has implications for its competitiveness in the region and its ability to create jobs, increase exports, and drive innovation and technological advancement.

When compared to Singapore, Kenya’s labour productivity is 68 times lower than Singapore’s. Productivity in Singapore increased from US\$ 7,381 to US\$ 13,986 between 2000 and 2022 while Kenya’s increased from US\$ 139 to US\$ 156 during the same period (Figure 4.10). A similar trend was observed in Malaysia

and South Korea whose labour productivity increased from US\$ 1,622 and US\$ 3,920 to US\$ 2,699 and US\$ 9,058, respectively. In these countries, growth in labour productivity averaged 2.4 per cent, 3.3 per cent, and 3.9 per cent in Malaysia, Singapore, and South Korea, respectively, compared to Kenya at 0.6 per cent.

Growth in the Asian economies was driven by a focus on innovation, technology adoption, and high value industries. As an example, industrial expansion in Singapore was driven by manufacturing electronics, chemicals, and pharmaceutical products.

Figure 4.10: Labour productivity in selected countries, 2000-2022



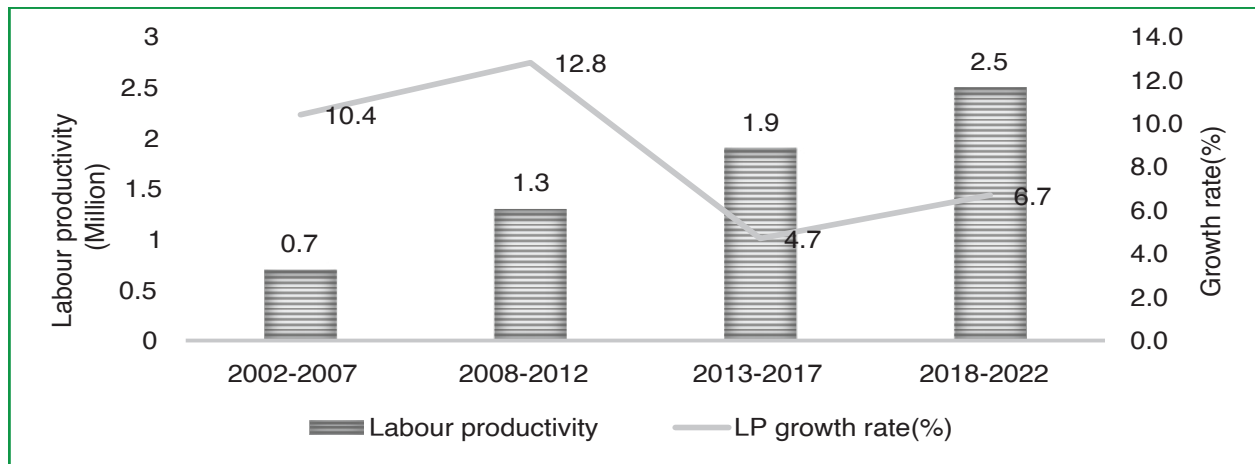
Data source: UNIDO (2023)

4.3.2 Labour productivity in Kenya

Labour productivity in formal manufacturing increased from Ksh 0.7 million between 2002 and 2007 to Ksh 1.3 million in the first medium-term plan (2008-2012). A further improvement was observed in the second medium-term plan (2013-2017) and third medium-term plan (2018-2022) to Ksh 1.9 million and 2.5 million, respectively. Notwithstanding, the growth rates in labour productivity varied during the period under review. As an example, between 2002-2007, labour productivity was low, averaging 10.4 per cent, but this increased to 12.8 per cent in the first medium-term plan (2008-2012). This

further declined to 4.7 per cent in the second medium-term plan (2013-2017) and later increased to 6.7 per cent in the third medium-term plan (2018-2022) (Figure 4.11). This decline was because of the poor performance of medium-high and high technology sub-sectors such as assembling of motor vehicles; medium technology sub-sectors such as the manufacture of rubber products; and select low technology sub-sectors such as tobacco products; fish processing and fabricated metals whose value added dropped due to high costs of doing business, and stiff competition from imports.

Figure 4.11: Labour productivity and growth rate in labour productivity (%) 2002-2022



Data source: KNBS (Various), Statistical Abstracts and Economic Surveys

Food processing had the highest labour productivity, which increased from Ksh 1.0 million to Ksh 6.3 million between 2002 and 2022 (Table 4.4). This was supported by high productivity levels in the manufacture of beverages, which increased from Ksh 1.5 million to Ksh 9.0 million during the same period. In non-food agro-processing, labour productivity increased from Ksh 0.7 million between 2002 and 2007 to Ksh 3.0 million in the first medium-term plan (2008-2012) and later declined to 2.1 per cent and 2.0 per cent in the second medium term (2013-2017) and third medium-term plan (2018-2022), respectively. The increase to 3.0 per cent was occasioned by increased labour productivity in the manufacture of leather and

leather-related products, paper, and products of paper while periods of decline were due to fluctuations in the manufacture of wood and products of wood and cork except for furniture, textile, and wearing apparel. The poor performance of these sectors was because of competition from cheap imports, which lower productivity because domestic firms are unable to compete effectively, resulting in lower investment in technology and innovation, lower wages, and employment. For instance, there was a decline in apparel manufacturing during the review period, while between 2020 and 2021, there was a 20 per cent increase in the importation of second-hand clothes (KIPPR, 2023).

Table 4.4: Labour productivity in manufacturing sub-sectors, 2002-2022

Sub-sector	2002-2007	2008-2012	2013-2017	2018-2022
Food manufacturing	1.0	2.4	5.8	6.3
Non-food manufacturing – Agro-processing	0.7	3.0	2.1	2.0
Non-food manufacturing - Non agro-processing	1.3	1.8	3.5	2.5

Data source: KNBS (Various), Economic Surveys

Non-agro processing exhibits high labour productivity, which increased from Ksh 1.3 million between 2002 and 2007 to Ksh 3.5 million in the second medium-term plan (2013-

2017. This later declined to Ksh 2.5 million in the third medium-term plan (2018-2022) due to a decline in value added by MHT and the effects of the COVID-19 pandemic. At a sub-

sector level, some sub-sectors such as the manufacture of transport equipment, coke, refined petroleum, chemicals and chemical products, and pharmaceutical products have high labour productivity due to their capital-intensive and specialized nature. In contrast, others such as the manufacture of fabricated metals and rubber and plastic products have lower labour productivity.

4.4 Factors Influencing Labour Productivity in MSMEs

Productivity in informal firms is significantly lower at Ksh 7,244 compared to formal firms

whose labour productivity is Ksh 30,144. A disaggregation by type of processing shows that formal firms in food processing had the highest labour productivity at Ksh 49,128 whereas non-food agro-processing had the lowest productivity at Ksh 20,122 (Table 4.5). Similarly, in the informal sector, non-food agro-processing had the lowest productivity and an indication of overall low productivity in sub-sectors in these areas. Informal firms undertaking non-agricultural processing have the highest labour productivity at Ksh 9,000 whereas those operating in the informal sector produce Ksh 21,921 per worker.

Table 4.5: Labour productivity by firm size and type of processing in MSMEs ('000)

	Labour productivity (Formal)	Labour productivity (Informal)	Overall labour productivity in MSMEs
Firm size			
Micro	11.2	7.1	7.6
Small	48.1	8.6	32.1
Medium	158.4	19.7	133.8
Sub-sectors			
Food manufacturing	49.1	7.4	28.3
Non-food – agro-processing	20.1	5.8	13.0
Non-food - non-agro-processing	21.9	9.0	15.5

Data source: KNBS (2016), MSME Survey 2016

Micro and small enterprises had lower productivity at Ksh 7,639 and Ksh 32,134, respectively, compared to the medium-sized firms at Ksh 133,790. Despite this, MSMEs dominate the informal sector and play a significant role in the socio-economic development of the country. Higher labour productivity in medium firms is because of their higher expenditures on research for development and innovation, where they spend 2.1 per cent of their total firm's expenditure on R4D (Box 4.1), which allows the firms to engage in efficient production processes, resulting in high labour productivity. Despite higher labour productivity in medium manufacturing firms, micro, and smaller firms

benefit from the intensive use of information and communication technologies (ICT), digital tools, and innovations, and investment in research for development and training (OECD, 2021). Labour productivity is influenced by several factors, including expenditure on research for development, type of skills available in the labour market, availability of on-job training, technology use, access to electricity, and capital investment. The relevance of these drivers has evolved, with investment in research for development driving innovation and technology use, investment in human capital through on-the-job training, and skills development gaining momentum (World Bank, 2021).

Box 4.1: Factors influencing labour productivity at the firm level *Source: Author's analysis based on the KNBS (2016), MSME Survey.*

A regression analysis was conducted to assess the factors that influence labour productivity at the firm level. These factors include firms' level of initial financial capital investment (logged), access to electricity, expenditure on process and product innovation (logged), which is used as a measure of investment in research for development, and technology intensity of the firms, which is a categorical variable. The regressions also looked at the various skill levels present in the firm with a focus on first and second skill levels and the existence of on-the-job training. The dependent variable in all the regressions is firm-level labour productivity measured by (log of) total sales of the firm in a typical month during the last fiscal year divided by the number of workers at the firm. A detailed discussion of the factors that influence labour productivity is provided in the subsequent section.

Variable	All manufacturing firms	Micro firms	Small firms
Initial financial capital investment (log)	0.1064 (0.0242) ***	0.0910 (0.0247)***	0.1586 (0.0747)*
Access to electricity (1=Yes)	0.5358 (0.0926)***	0.5547 (0.0918)***	-1.0599 (0.7359)
Expenditure on research for development (log)	0.0000 (0.0000)	0.0001 (0000)***	0.0000 (0.0000)**
Medium technology (categorical)	0.2962 (0.2728)	0.4733 (0.3147)	-0.4088 (0.2862)
Medium-high and high technology (categorical)	2.5727 (0.5205)***	2.6651 (1.0020)**	2.3597 (0.4633)***
1 st level (1=Yes)	-0.3339 (0.1122)**	-0.3439(0.1176)**	-0.0693 (0.4021)
2 nd level (1=Yes)	-0.3716 (0.1135)**	0.3335 (0.1183)**	-0.5699 (0.5218)
On-the-job training (1=Yes)	0.0252 (0.1590)	0.0956 (1545)	-0.2624 (0.5305)

Note: Standard errors are in brackets

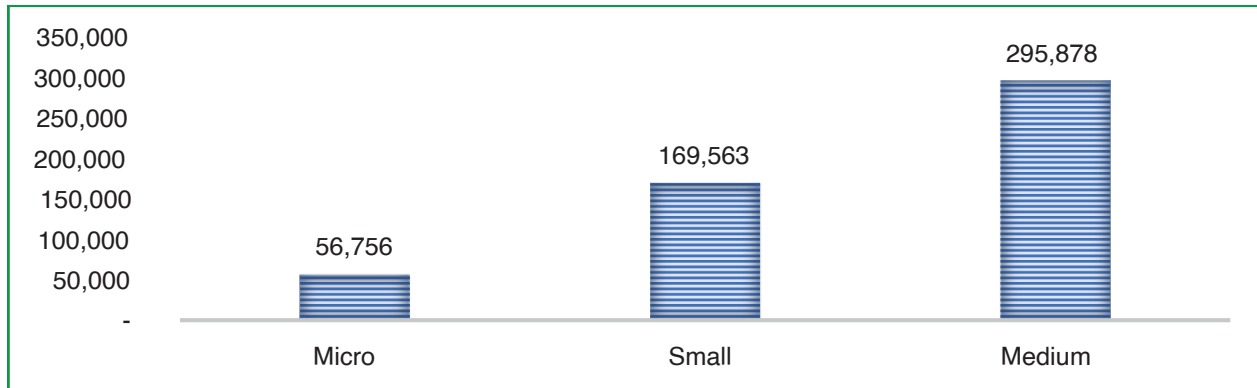
Source: Author's analysis based on the KNBS (2016), MSME Survey

4.4.1 Startup financial investment

Startup financial investments are necessary for growth and economic development. At the firm level, financial investments are critical in bringing innovative technology, encouraging new knowledge, and enhancing skills development, thus increasing the labour

productivity of manufacturing firms. At the firm level, medium-sized firms had higher capital investment per worker compared to small and micro-sized firms at Ksh 295,879, Ksh 169,563, and Ksh 56,756, respectively (Figure 4.12). This suggests that micro firms operate with lower capital resources per employee compared to their larger counterparts.

Figure 4.12: Financial capital investment per worker by firm size, 2016



Data source: Construction based on KNBS (2016), MSMEs Survey

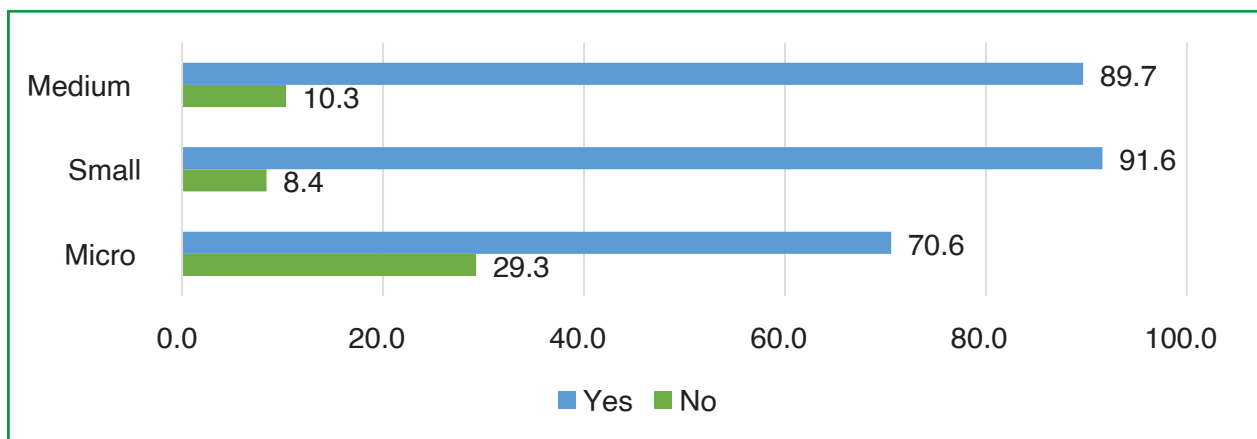
Financial investment in small-sized firms enhances labour productivity by 15.8 per cent, thus these firms experience higher improvements in labour productivity when there is an increase in capital per worker. Small firms are more labour-intensive compared to micro firms, thus more startup capital investment per worker is critical in enhancing labour productivity. In micro firms, an increase in financial capital investment increases product by 9.1 per cent in micro enterprises as shown in Box 4.1. In micro-sized firms, increased capital per worker has gains on labour productivity, but to a lesser extent than in small-sized firms. This is because micro-enterprises have inadequate intangible capital investments, which include investments

in research for development, training, and organizational capital, essential for enhancing labour productivity and competitiveness.

4.4.2 Access to electricity

The level and intensity of the use of electricity in a country is one of the enablers of economic growth, competitiveness, and investment activities. About 90.0 per cent of small and medium-sized firms had electricity connections compared to micro firms at 70.6 per cent (Figure 4.13). Access to electricity increases labour productivity by 53.5 per cent units in MSMEs, although micro enterprises have higher productivity at 55.4 per cent (Box 14.1).

Figure 4.13: Electricity connection in MSMEs, 2016

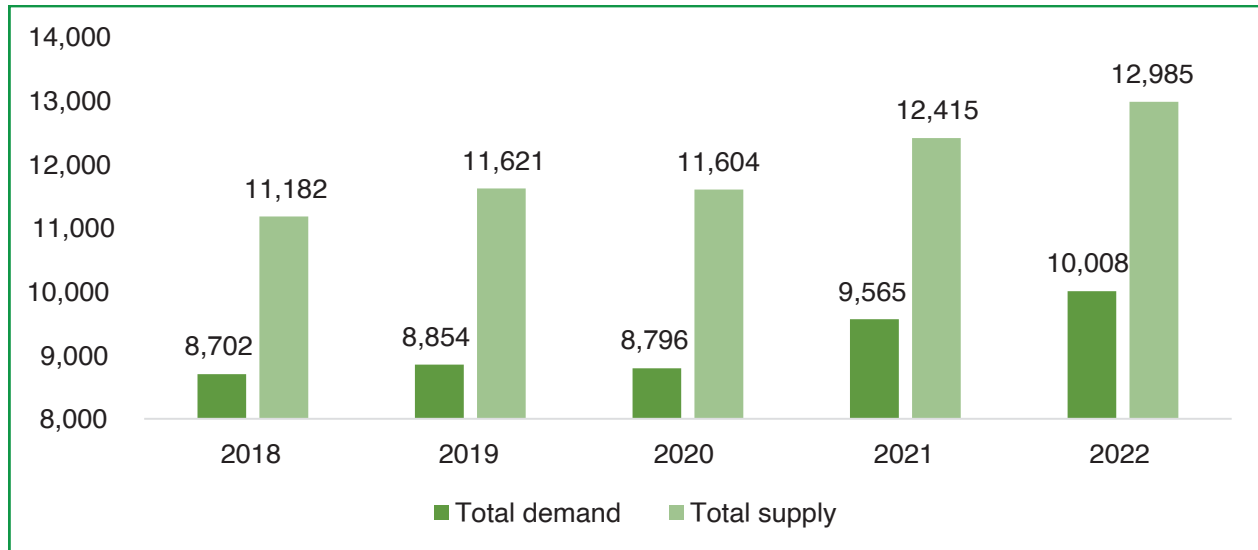


Data source: KNBS (2016), MSME Survey

MSMEs face various challenges in access to electricity in terms of the procedures undertaken to access electricity within a worksite, the official cost of connecting electricity to the worksite, the time taken to be connected, average electricity bill amounts payable monthly, and number of power outages experienced in a month. A county business environment for MSMEs report by KIPPRA shows deterioration in electricity connection with a decline in scores from 37.8 in 2019 to 32.5 in 2022 (KIPPRA, 2022). Some of the challenges cited in access to electricity connection include the high cost of installation and lengthy processes and procedures involved when seeking electricity connection.

There was a wide array of energy generation comprised of geothermal (43.6%), hydro (24.0%), and wind (16.9%) in 2022. Total electricity supply increased from 11,051.7 GWh in 2018 to 12,669.4 GWh in 2022, whereas total domestic demand increased from 8,702.3 GWh to 10,008.4 GWh during the same period (Figure 4.14). Electricity demand for domestic use increased from 3,665.9 GWh in 2018 to 4,291.5 GWh in 2022. The demand for electricity in commercial and industrial use also increased from 4,336.5 GWh to 4,958.2 GWh during the review period. Despite increased electricity supply, the energy sector is affected by frequent power outages, which affect the quality of power and the high cost of electricity.

Figure 4.14: Electricity demand and supply, 2018-2022



Data source: KNBS (Various), Economic Surveys

The high cost of electricity and utilities has implications on firm level competitiveness and the level of investment in the country. Electricity cost in the country is one of the highest, with firms paying on average US\$ 0.2 per kilowatt of electricity compared to firms in South Africa that pay US\$ 0.1 per kilowatt-hour (World Bank, 2019b; African Development Bank, 2018). The high electricity cost is associated with increased production costs. In India, Abeberese (2017)

found that increased electricity costs forced manufacturing firms to engage in less electricity-intensive production processes, and therefore discouraged the adoption of higher technology. In assessing the effect of electricity shortage on firm productivity in Pakistan, Grainger and Zhang (2017) found a decrease in firm revenue and value added products by 0.1 per cent and 0.4 per cent, respectively.

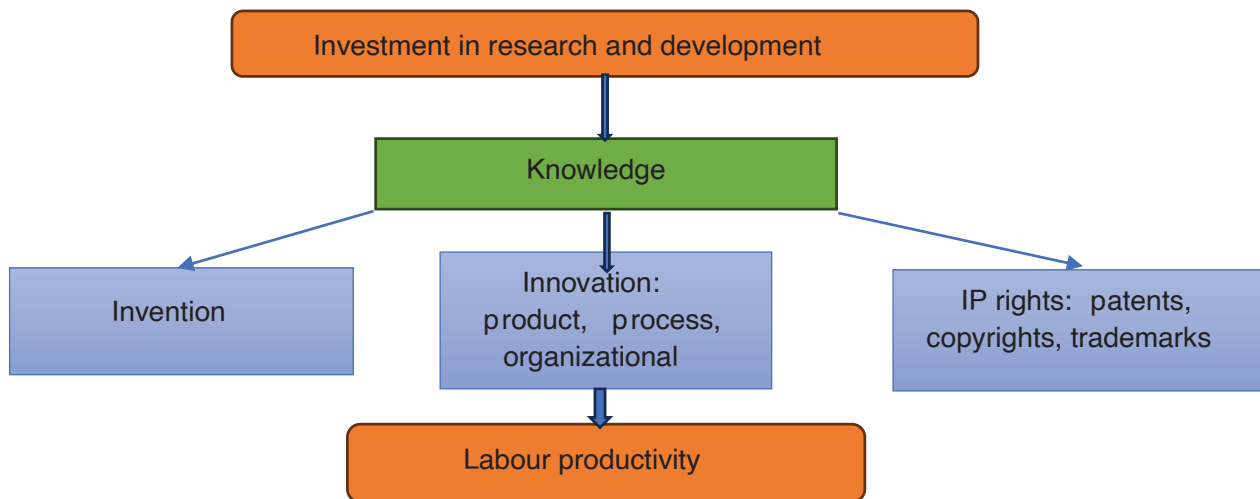
4.4.3 Research for development and innovation

Investment in research for development plays a vital role in increasing the productivity of firms by encouraging product and process innovation (Fiorentino et al., 2021). Research for development encourages knowledge generation through the discovery of new scientific principles, the invention of novel products, and the development of advanced technologies. This expands a firm’s knowledge base, which provides a foundation for future innovation and productivity. Empirical evidence shows that firms that invest in research for development are more likely to engage in

product innovation than firms with little to no investment.

At the firm level, investment in research for development drives labour productivity through various pathways (Figure 4.15). First, product innovation creates new demand and higher value for consumers, leading to increased sales and, consequently, higher labour productivity (Woltjer et al., 2021). Similarly, technical innovations and organizational changes optimize production processes, automate tasks, and improve efficiency. As innovation improves processes and creates innovative technologies, labour productivity rises due to enhanced efficiency, reduced costs, and increased output.

Figure 4.15: The relationship between investment in research for development and labour productivity

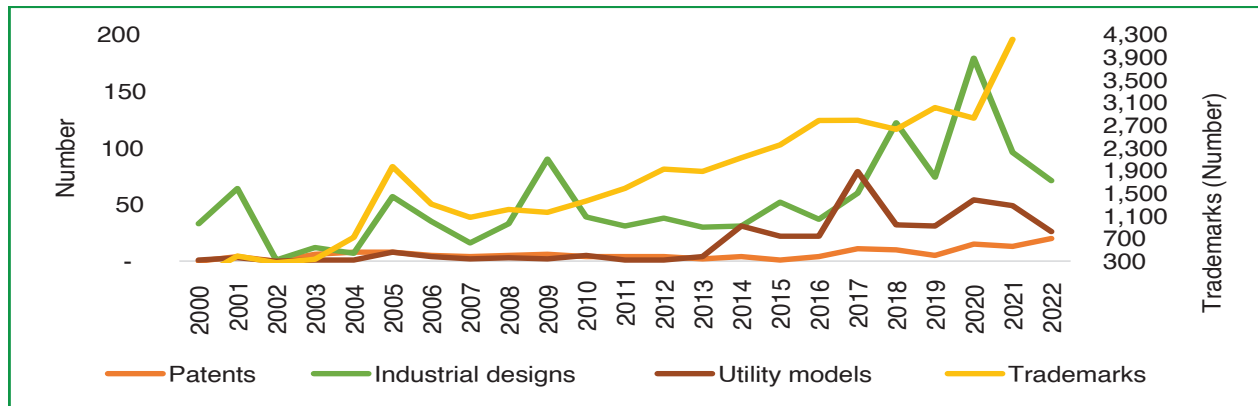


Source: Adopted from Zhang and Mohnen (2022)

There was low innovation and patenting among MSMEs in Kenya. An assessment of the county business environment for MSMEs found that innovation and patenting scored lowly at 1.6 and 0.5 in 2022 (KIPPRA, 2022). Although an improvement from 2019, this is an indication that MSMEs operating in the manufacturing sub-sectors have low innovation capability. This is attributed to low expenditures in research for development and poor protection of innovation stages such as patenting and

copyright protection. There is also an over-reliance on internal sources for financing and executing knowledge capital investments and introducing innovations. This may indicate a deficit in the research, knowledge, and information infrastructure, and an absence of cooperation with other firms and research institutions. Finally, low levels of skilled labour force hamper the capacity of firms to transform knowledge capital into innovation outcomes.

Figure 4.16: Granted patents, industrial designs, utility models, and trademarks (2000-2022)

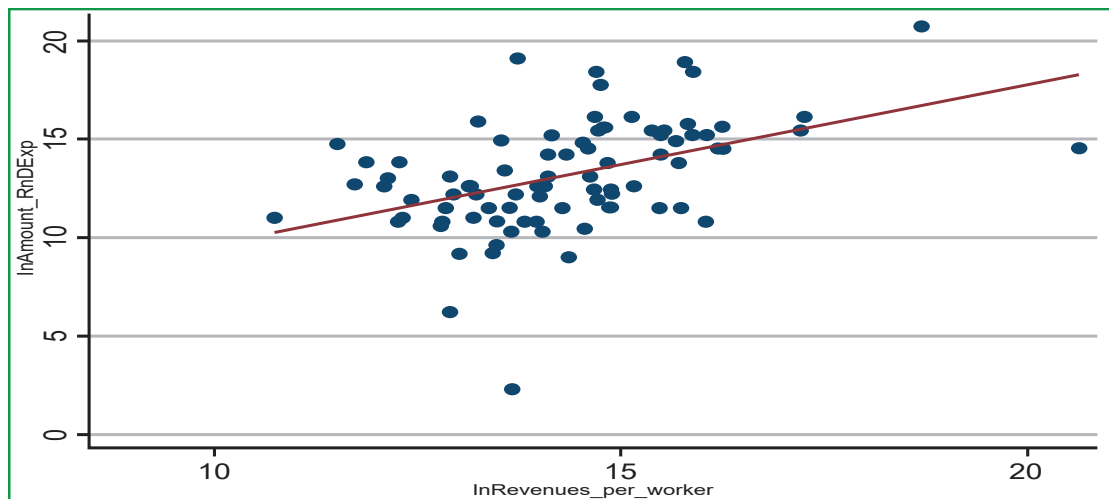


Data source: KIPi (Various), Annual reports

Results from the analysis show a positive correlation between research for development investment proxied by expenditure on product and process innovation (Figure 4.17). Medium-sized manufacturing firms, on average, allocate a significantly higher amount towards research for development and innovation, with an average spending of 2.1 per cent of total firm expenditure compared to small and micro enterprises whose expenditure is 0.8 per cent and 0.2 per cent, respectively. Medium firm’s research for development spending signifies their efforts towards investment in technological innovation

to maintain a competitive advantage because of the development of new products, services, and technologies. Across all firms, spending on research for development activities is lower than 2.0 per cent of total firm expenditures. In terms of type of manufacturing, firms in food manufacturing spend significantly higher at 8.2 per cent of total firm expenditure on research for development and innovation. Firms in both non-food agro-processing and non-food non agro-processing spend relatively low at 0.6 per cent of their total expenditure on research for development and innovation.

Figure 4.17: Correlation between investment in research for development and labour productivity



Data source: Construction based on KNBS (2016), MSMEs Survey

Low technology sub-sectors are 11.5 per cent less likely to invest in research for development. As a result, it raises concerns for Kenya, where most of the industrial sector is made up of low technology sub-sectors (UNIDO, 2019). Medium-high and high technology firms have the highest average expenditure on research for development, approximated at 2.8 per cent of total revenue while low technology firms have the lowest average expenditures at 0.6 per cent. The higher research for development spending in the medium-high and high technology sectors suggest a greater emphasis on innovation and advanced research for development efforts among firms operating in these sub-sectors. As an example, pharmaceutical manufacturing firms spend a substantial amount on research for development compared to textiles and garments, food and beverages, and other manufacturing. The pharmaceutical industry is highly research-intensive and relies on innovation for the development of new drugs and treatments.

4.4.4 Technology intensity

The manufacturing industry encompasses a wide spectrum of technological intensity, ranging from low-technology to high-technology production processes. High-technology manufacturing involves the production of

advanced technological products, while medium-high-technology manufacturing includes activities that are less advanced but still require a significant level of technological input. The Fourth Industrial Revolution (Industry 4.0) is disrupting how production and business processes are organized, and manufacturing is one of the industries that benefit the most from the adoption of Industry 4.0 technologies in terms of productivity and global competitiveness. For example, Graetz and Michaels (2018) indicate that the use of robotics increases annual labour productivity in manufacturing. Moreover, Deloitte reports that manufacturers embracing smart technologies experienced an annual labour productivity growth of over 3.0 per cent between 2015 and 2018.

Low technology firms had the lowest labour productivity while medium technology and medium-high and high technology firms had the highest labour productivity at Ksh 10,400, Ksh 16,000, and Ksh 59,100, respectively (Table 4.6). Firms equipped with advanced technologies are in a better position to optimize production processes, reduce waste, and enhance overall operational efficiency. Medium-high and high technology firms are often hubs of innovation and knowledge generation.

Table 4.6: Labour productivity by technology intensity, 2016 (‘000)

Level of technology intensity	Labour productivity
Medium-high and high technology	59.1
Medium technology	16.3
Manufacture of food products	10.4

Data source: Construction based on KNBS (2016), MSMEs Survey

4.4.5 Skills development

Human capital development is central to labour productivity, and subsequent competitiveness of the manufacturing sector. Human capital development is premised on the assumption that training and education increase labour productivity. Educated personnel take better

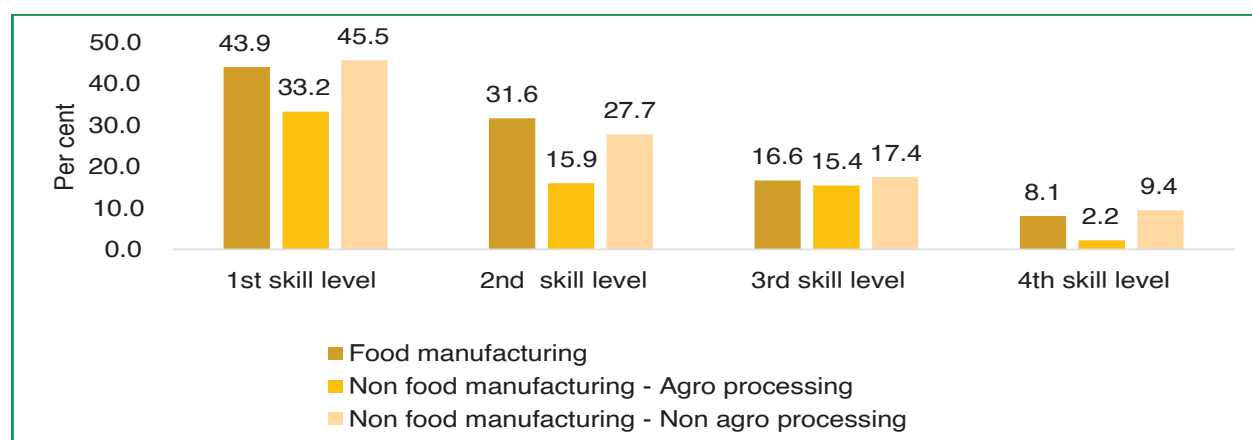
advantage of technology and are more productive. From the analysis in Box 4.1, 1st and 2nd skills levels reduce labour productivity in manufacturing firms by 33.3 per cent and 37.2 per cent, respectively.

Significant differences in skills distribution by type of processing are shown in Figure 4.18. As

an example, in 2021, the manufacture of non-agricultural products had the highest level of 4th skills level at 9.4 per cent. This is because of high demand for skilled labour in the manufacture of pharmaceutical products (27.2%), manufacture of motor vehicles (30.7%), manufacture of computers and electronics (38.4%), and the manufacture of chemicals and chemical products (15.7%). Notwithstanding, first skill

levels were also high in this sector at 45.5 per cent. Agro-processing of non-food products such as the manufacture of textiles, wearing apparel, and wood and products of wood had the lowest levels of 4th skills levels at 2.2 per cent, whereas food processing was at 8.1 per cent. Food manufacturing also had the largest distribution of 1st and 2nd level skills at 43.9 and 31.6 per cent, respectively.

Figure 4.18: Skill distribution by type of processing (%), 2021



Data source: KNBS (Various), Household Surveys

The distribution of the labour force in the various manufacturing firms based on skill levels is varied. In micro firms, the largest proportion of the labour force had the 1st and 2nd levels of skills at 44.1 per cent and 39.9 per cent, respectively (Table 4.7). A smaller proportion was distributed across the 3rd (12.8%) and

4th (3.2%) skill levels, indicating that micro firms rely on foundational and intermediate skill sets. In small and medium-sized firms, a large proportion of the labour force had the 4th level skills at 42.4 per cent and 64.0 per cent, respectively, an indication of the presence of skilled workers.

Table 4.7: Skill distribution by firm size and technology intensity (%), 2016

Category	1 st Skill Level	2 nd Skill Level	3 rd Skill Level	4 th Skill Level
Firm size (%)				
Micro	44.1	39.9	12.8	3.2
Small	18.5	28.1	11.0	42.4
Medium	15.5	18.3	2.1	64.0
Technology Intensity (%)				
Low technology	43.3	39.3	12.2	5.3
Medium technology	17.8	32.6	22.9	26.7
Medium high and high technology	9.4	20.3	25.1	45.2

Data source: Construction based on KNBS (2016), MSMEs Survey

4.4.6 On-the-job training

Although insignificant in the regression analysis, on-the-job training plays a key role in driving labour productivity in manufacturing firms. On-the-job training enhances labour productivity through various pathways. First, implementing robust training programmes within manufacturing facilities directly impacts productivity levels by equipping workers with essential technical skills, resulting in increased output and operational efficiency within manufacturing plants. As workers become more skilled and proficient in their roles, they can complete tasks more quickly and accurately, leading to increased productivity. Secondly, employee training programmes inculcate and enhance a culture of innovation and knowledge dissemination within manufacturing processes. As workers undergo training and gain expertise, they become conduits for sharing best practices and new methodologies, enhancing the adaptability and resilience of manufacturing sectors. Finally, on-the-job training programmes often include instruction on the use of new technologies and processes introduced in the manufacturing industry. Workers who receive training on the latest equipment and techniques are better equipped to adapt to changes in the workplace and take advantage of new opportunities for efficiency and productivity gains. By ensuring that workers are up to date with the latest advancements in their field, training initiatives enable manufacturing companies to stay competitive and drive productivity improvements.

4.5 Key Messages and Policy Recommendations

4.5.1 Key messages


1. Manufacturing is concentrated in low technology, labour-intensive industries, including agro-processing and fabricated metals. Labour productivity is, however, low because of insufficient investment in research for development that restricts the ability of manufacturing industries to innovate, develop new products, and improve processes that are essential for enhancing productivity and competitiveness. Other factors include reliance on outdated machinery and processes, low access to financial services, which hinder investment in innovative technologies, low skill levels, and high cost of electricity that discourages the use of new machinery.
2. Manufacturing firms rely mostly on employees with 1st and 2nd level skills, which limits their ability to perform basic operation of machinery. As a result, the concentration on lower skill levels directly constrains labour productivity in the sector. In the medium-high and high technology sub-sectors, over 70 per cent of the workforce engaged has 3rd and 4th skill levels and this contributes to them dominating their contribution to manufacturing output. For the MSMEs with low levels of 1st and 2nd manufacturing skills, the absorption of technologies that enhance labour productivity enhancement becomes a challenge. The sector needs to invest in the development of 3rd and 4th skills in preparing for 4th industrial growth.
3. Investment in research for development and innovation tends to be low among low technology sub-sectors, especially the MSMEs. This low investment in research for development and innovation is also catalyzed by inadequate innovation culture among MSMEs, inadequate financial resources, and low concentration of 3rd and 4th level skills, which are a prerequisite for R4D and innovation commercialization. Investing in research for development has productivity gains by enabling micro and small-sized enterprises to innovate and cater to unique customer needs, thus allowing product differentiation.
4. Financial capital investment is low among micro and small firms, and this constrains labour productivity compared to medium firms. This limits the ability of micro and small manufacturers to upgrade technology infrastructure and hire skilled workers, resulting in low labour productivity. However, small-sized firms benefit more from higher financial capital investment where

productivity increases by over 15.8 per cent compared to 9.0 per cent in micro firms. This is because small firms, being slightly larger than micro firms, have a larger scale economy of scale, which enables them to benefit more from increased financial capital.

5. Electricity access is limited among the micro firms despite its ability to increase productivity. Moreover, high electricity cost increases the cost of production and discourages the use of modern technology. Both accessibility and affordability of electricity boost productivity by enabling firms to adapt their production processes, leading to increased efficiency and output.

4.5.2 Policy recommendations

1. There is a need to foster research for development to drive innovation and growth through the following:
 - (i) Enhance the implementation of the Kenya Innovation Policy Framework whose recommendations include fiscal policies that provide incentives for research for development and innovation commercialization;
 - (ii) Speed up the implementation of the Konza City Technopolis to facilitate the establishment and growth of medium-high and high technology innovation. Upgrade and equip existing Constituency Industrial Development Centres (CIDC) to spur innovation in MSMEs;
 - (iii) Increase expenditure towards research for development and innovation to the recommended 2.0 per cent of GDP, which can be used to incentivize firms' participation in KIRDI's industrial Innovation Programme, aimed at the commercialization of viable innovations; and
2. The government needs to support the development of the 3rd and 4th skill levels demanded for advanced technology in manufacturing. This can be achieved through incentives to students to enroll in Science, Technology, Engineering, and Math (STEM) and the provision of scholarships and bursaries. Promote the linkages between technical training and manufacturing to tailor-made training materials that address the skills gap in the sector. Furthermore, existing 1st and 2nd level skills can be enhanced through upskilling of employees from firms that contribute to the Industrial Training Levy Fund through the National Industrial Training Institute (NITA). Moreover, there is a need to create awareness among MSMEs on the benefits of the fund in upskilling of their workforce.
3. Enhance access to startup capital to micro and small firms through the establishment of an Industrial Development Fund (IDF) as envisioned in the Industrialization Policy. Specifically, the policy recommends an IDF with a minimum of Ksh 10 billion for long term financing of manufacturing enterprises, including MSMEs. There is also a need to create awareness of the existing funding mechanism for MSMEs.
4. The government needs to promote the use of off-grid productive use of energy by providing tax incentives to firms investing in energy-efficient technology in the production process as spelt out in the Draft Green Fiscal Incentives Policy Framework. Additionally, awareness creation can be done to MSMEs through the Micro and Small Enterprises Authority (MSEA) on the benefits of off-grid productive use of energy.
- (iv) Strengthen the linkages between academia, research institutions, and industry to foster innovation, and entrepreneurship, through collaborative research and technology transfer.

ENHANCING PRODUCTIVITY
THROUGH TRADE

The trade sector is critical in driving the overall productivity of the country to boost economic growth and development. However, the contribution of domestic trade to overall productivity is constrained by the growing informal trade sector; an unconducive business environment that has led to the closure of several supermarkets and branches in the country; and gaps in market infrastructure. On the international front, trade facilitation measures such as the Single Customs Territory (SCT) have played a significant role in reducing import and export costs and time. Trade agreements such as the African Continental Free Trade Area (AfCFTA) and the African Growth and Opportunity Act (AGOA) have played a crucial role in enhancing growth in exports, with even greater benefits realized when tariffs and Non-Tariff Measures (NTMs) are eliminated and harmonized. To boost domestic trade and enhance overall productivity growth, key actions include advancing market infrastructure development by prioritizing the completion of tier one markets by allocating and mobilizing adequate funding, establishing warehouses and cold storage facilities, and enhancing rural road transport for improved market access for small farmers and traders. There is also a need to empower MSMEs to expand into export trade by facilitating certification, Industrial Property Rights (IPRs), providing entrepreneurship training, and promoting value addition. Internationally, there is a need to focus on enhancing trade facilitation by streamlining documentation requirements and expediting cargo release times. Moreover, there is a need to strengthen the implementation of AfCFTA and AGOA, diversify exports into high-tech sectors, identify growth potential in emerging markets such as the AfCFTA, and establish trade relationships through negotiations to broaden market access.

5.1 Introduction

Trade plays a crucial role in sustaining economic growth and enhancing productivity globally by promoting specialization, attracting foreign investment, fostering technological advancements, and expanding market access for domestic producers. Trade acts as a catalyst for productivity growth by fostering competition, enabling technology transfer, expanding market access, and facilitating resource allocation.

Over the past decade, global trade has been a significant driver of economic development, lifting millions out of poverty and contributing to the economic transformations of many countries. The liberalization of trade policies, advancements in transportation and communication technologies, and the establishment of international trade agreements have facilitated a more interconnected and interdependent global economy with the total value of global trade reaching US\$22.6 trillion in 2021.

The global trade landscape, however, has faced disruptions and shifts in recent years. The effects of the 2008-09 global financial crisis led to a prolonged period of suppressed trade growth. More recently, trade tensions between major economies, such as the United States and China, have introduced uncertainties and disruptions in global supply chains. Additionally, the COVID-19 pandemic negatively impacted international trade flows, causing significant contractions in global trade volumes due to lockdowns, supply chain disruptions, and reduced demand. Despite these challenges, the global trade environment remains dynamic, with emerging trends such as the rise of digital trade, regional trade agreements, and a shift towards sustainable and inclusive trade practices.

At the domestic level, the wholesale and retail trade sectors play a pivotal role, in facilitating the distribution and exchange of goods and services among businesses and consumers. Domestic trade is organized through various channels and market structures. Traditional markets, such as open-air markets and roadside stalls, are prevalent in both urban and rural areas, serving as hubs for local trade activities. In addition, formal retail outlets, including supermarkets, convenience stores, and shopping malls cater to a growing consumer base in urban centres. The wholesale sector plays a crucial intermediary role, sourcing products from manufacturers or importers and distributing them to retailers or directly to consumers.

Moreover, technological advancements and digital platforms have transformed the landscape of domestic trade in the country. The emergence of e-commerce platforms and mobile payment systems has revolutionized consumer purchasing behaviour, thus enabling businesses to reach a wider audience and conduct transactions efficiently. Despite these modernization interventions, informal trade remains a significant component of Kenya's

domestic economy, engaging about 80 per cent of the working population.

Micro, small, and medium enterprises (MSMEs) form a vibrant sector of the economy, with many engaging in trade activities primarily within their localities and across counties. They contributed to about 33.8 per cent to economic output in 2015 (KNBS, 2016 MSME Survey Report). About 14 per cent of the MSMEs conduct their trade activities among themselves, with 99 per cent of the sales conducted at the domestic level. Conversely, a relatively low percentage (0.16%) participates in global trade, whereas 87 per cent sell their goods and services to individual consumers. Limited access to export markets, regulatory barriers, and capacity constraints restrict the international trading activities of MSMEs.

The Country relies extensively on the agriculture and services sectors, where productivity is low compared with the industry sector. The low productivity in agriculture is associated with over-reliance on rain-fed agriculture, low mechanization, and technological adoption, while that in the services is majorly because of a large informal economy and skills mismatch. For example, in 2021, the exports of services, agriculture, and industry were 40.87 per cent, 35.83 per cent, and 25.32 per cent, respectively (Atlas of Economic Complexity, 2023). The respective contributions of the services, agriculture, and industry to the GDP in the same year was 55.41 per cent, 22.43 per cent, and 16.99 per cent (Statista, 2023), respectively. The top three products in services were ICT, transport, and travel and tourism, while in agriculture, tea, cut flowers, and coffee were prominent. For industry, refined petroleum oils, titanium ore, and gold were notable contributors.

Imports play a crucial role in providing inputs that may not be readily available in the domestic market. For instance, the proportionate share of intermediate goods in imports is substantial

(33.3%), including inputs for both manufacturing and agriculture. Notably, changes in the pattern of imported commodities such as fertilizers have negative effects on productivity in the domestic market. International trade facilitates access to markets and technology transfer, enabling firms to enhance production processes and improve overall productivity.

Counterfeits and illicit trade are a concern for local enterprises, posing substantial threats to their competitiveness and overall productivity. The National Baseline Survey on Counterfeit and Other Forms of Illicit Trade in Kenya report released by the Anti-Counterfeit Authority in 2019 showed that the value of illicit trade in 2017 was Ksh 726 billion. In 2018, this figure increased to Ksh 826 billion, a 14 per cent rise. Consequently, the government lost tax revenue of Ksh 129.72 billion and Ksh 153.1 billion in the two years. The detrimental impact of illicit trade on domestic production is especially affecting the growth of some sectors. The sectors affected by this illicit activity include building, mining, and construction (23%), energy, electrical, and electronics (15%), textiles and apparel (14%), plastics and rubber, and metal and allied sectors (9.0% each). Together, these five sectors accounted for a significant 70 per cent share of illicit trade out of 16 sectors in 2018. Notably, a substantial portion (51.72%) of illicit trade stems from imports, underscoring the international scope of the issue.

Moreover, the government's efforts to promote growth in domestic trade and thus boost productivity extend beyond addressing illicit trade to broader initiatives aimed at enhancing the competitiveness of domestic businesses. The development of the National Trade Policy in 2017 shows the government's commitment to creating an enabling environment for trade and investment. This policy framework seeks to increase competitiveness, promote export diversification, develop trade infrastructure, and strengthen integration into global value chains.

The government aims to enhance productivity and stimulate growth in the domestic trade sector by prioritizing measures such as reducing costs and time in import and export processes.

Despite the above policy initiatives to boost trade to enhance productivity and hence economic growth and development, the sector still faces challenges that hinder its growth. These include low diversification, low competitiveness, limited negotiation capacity, limited access to finance, inadequate market information, high tariffs, increased use of non-tariff barriers, and outdated trade facilities, among others (Ministry of ICT, Innovation and Youth Affairs, 2021). Addressing these gaps and implementing measures to improve access to finance, enhancing market information systems, and modernizing trade infrastructure would help unlock the sector's full potential and further contribute to economic development.

This chapter examines the recent trade developments in the country with a view to identify the recent trends and constraints and suggest ways of improving trade to enhance productivity in the country.

5.2 Government Policies to Enhance the Productivity of Domestic and International Trade

5.2.1 Policies and initiatives to enhance domestic market

Since independence, Kenya has implemented various policies to enhance the growth of domestic trade to boost productivity growth. The trade policy objectives have evolved, embracing a more open trade regime, to promote domestic production and reduce imports. Notably, the National Trade Policy 2017 seeks to boost domestic and international trade. Some of its objectives are to grow and enhance productivity, develop infrastructure, and improve the quality and competitiveness

of products. The policy emphasizes local production, expansion in regional markets, and identification of the country's niche in global markets. In addition, the government has pursued trade liberalization, to integrate the country into the world economy and attract foreign investment.

The government has also invested in infrastructure, increased domestic energy production, and addressed other bottlenecks that affect the cost of doing business in the country. Some of the infrastructure projects that have been started to facilitate trade include the establishment of the Lamu Port-South Sudan-Ethiopia-Transport (LAPSSET) Corridor Project, Isiolo-Mandera Regional Road, the expansion of the Jomo Kenyatta Airport and the Standard Gauge Railway. Consequently, Kenya's Africa Infrastructure Development Index (AIDI) score increased from 8.53 to 27.52 between 2005 and 2022 (Africa Infrastructure Knowledge Programme, 2023).

Over the years, the government has instituted several policy interventions towards increasing access to broad skills beyond formal education, creating linkages between formal and informal firms, and helping small-scale firms enter the local and global value chains to improve productivity. The government's efforts to enhance the productivity of domestic trade have been aimed at improving economic stability, predictability, and security, and creating growth and jobs for the benefit of all Kenyans. Some of the key government interventions include curbing illicit and counterfeit trade in Kenya, addressing the cess fees charged across counties, enhancing the growth of the wholesale and retail sector, expansion of the market infrastructure, and facilitating the growth of E-commerce.

a) Consumer protection

Consumer protection policies are crucial for enhancing domestic market efficiency and ensuring fair trade practices. The Consumer Protection Act of 2012 is a key legislation

that safeguards the rights and interests of consumers, with the State Department for Trade playing a vital role through the Kenya Consumer Protection Advisory Committee (KECOPAC). Additionally, consumer protection agencies such as the Competition Authority of Kenya ensure that businesses adhere to fair trade practices and provide accurate information to consumers.

Annex Table 5.1 categorizes the various legal frameworks put in place by the government to protect consumers in various sectors. These frameworks are grouped into three main categories based on the implementing agency and purpose: health and safety, which focuses on ensuring the safety and quality of goods and services, particularly in the healthcare sector; regulatory agencies, implemented by bodies such as the Competition Authority of Kenya to ensure fair trade practices and competition in the market; and standards and communication, which set standards for goods and services and ensure that consumers receive accurate information and are protected from misleading representations.

The Consumer Protection Act of 2012 aims to safeguard the rights and interests of consumers, ensuring they receive fair treatment and protection from unfair trade practices. The Kenya Consumer Protection Advisory Committee (KECOPAC), established under the Act, advises the government on consumer protection issues and ensures that consumer interests are represented. The Competition Authority of Kenya enforces fair trade practices and competition in the market, while standards and communication frameworks set standards for goods and services and protect consumers from misleading representations. These policies and initiatives are crucial for enhancing domestic market efficiency and ensuring fair trade practices. By protecting consumers, these measures promote a healthy and competitive market environment that benefits both consumers and businesses.

b) **Curbing illicit and counterfeit trade in Kenya**

The impact of illicit trade on domestic production is particularly alarming, as it leads to low demand for local products while leading to stagnating sectoral growth. The worst-hit sectors include building, mining, and construction (23%), energy, electrical, and electronics (15%), textiles and apparel (14%), plastics and rubber, and metal and allied sectors (9% each) (Anti-Counterfeit Authority, 2019). These five sectors accounted for a significant 70 per cent of illicit trade out of 16 sectors in 2018. Data shows that 51.72 per cent of illicit trade comes from imports, thus emphasizing the international dimension of the issue. Addressing illicit trade requires not only domestic efforts but also effective control and regulation of imports to prevent the inflow of illicit goods into the country.

The government has initiated several interventions and regulatory measures to combat illicit trade. For example, the Anti-Counterfeit Act No. 13 of 2008 aims to combat trade in counterfeit goods and to enlighten and inform the public on matters relating to counterfeiting. It was amended in 2016 to strengthen the seizure and detention procedures. The Act also expands the definition of counterfeiting, provides provisions for trademarks, tightens inspections, provides indemnity, and includes provisions for compounding offenses (Anti-Counterfeit Authority, 2024). Further, the Anti-Counterfeit Regulations, 2010 were amended with the Anti-Counterfeit (Amendment) Regulations, 2019, demonstrating a commitment to creating a legal framework that imposes strict measures to combat counterfeit and illicit trade.

In addition, the Inter-Agency Anti-Illicit Trade Executive Forum and Technical Working Group was established on 10th July 2018 through Gazette Notice No. 7270 to coordinate efforts among different government agencies. By creating a multi-agency team for combating illicit trade, the government recognizes the importance of collaboration in addressing this complex issue. This forum and working group

are tasked with strengthening interventions, facilitating the rapid exchange of information between agencies, and enhancing the speed of enforcement.

c) **Addressing the cess fees charged across counties**

Cess fees represent indirect taxes imposed on agricultural products, at both the point of origin and destination within county boundaries. The primary aim of cess is to generate revenue for county governments and to maintain infrastructure related to the production and distribution of these crops. However, concerns have emerged regarding the consistency and fairness of cess rates across counties, along with the potential for double taxation when cess is applied multiple times during transit.

The current state of cess fees indicates varying rates and practices across counties, which impacts agricultural trade. Cess fees are applied at both the source county and destination markets, with rates differing among different counties. For instance, traders in Nairobi face a charge of Ksh 71 per bag of maize, while in Mombasa, the fee is Ksh 64 per bag. For Irish potatoes, a 70 kg bag incurs an average cess fee of Ksh 37 in Mombasa and Ksh 48 in Nairobi.

Cess fees are primarily regulated at the county level, with each county having its own regulations and fee structures for different agricultural products. These regulations define the terms of rates, and collection procedures for cess fees within the county boundaries. The variations call for a need for cess restructuring and harmonization across the counties, which is yet to be implemented by the national government.

Article 209(5) of the Kenya Constitution ensures that while counties have the authority to impose taxes and generate revenue, they must do so in a manner consistent with broader economic policies and activities that span county boundaries. The objective is to maintain

a cohesive economic environment within the country, preventing any adverse effects on the national economy due to localized taxation or revenue-raising measures.

The current disparities in cess fees and the practice of double taxation underscore the need for harmonized taxation policies to ensure they do not prejudice national economic activities. Such harmonization is crucial to prevent adverse impacts on the mobility of goods, services, capital, or labour across counties, thereby supporting a more integrated and efficient national economy.

d) Wholesale and retail sector

The supermarkets in the country form a significant component of the wholesale and retail sub-sector. The closure of branches among several supermarkets led to a significant decrease in the total number of branches across major supermarkets from 257 in 2018 to 171 in 2022. This had significant implications for the productivity of the suppliers. Nevertheless, the total number of branches rebounded in 2023 to 227. This rebound suggests that while some supermarkets faced challenges leading to branch closures, there were also instances of expansion or stability among other supermarket chains.

In 2021, the government through the Ministry of Trade, and the Competition Authority of Kenya set a regulation on the Retail Trade Code of Practice (RTCP). The RTCP is designed to regulate relationships between retailers and suppliers in the Kenyan market. Its primary goal is to prevent the abuse of buyer power by retailers; ensure fair and transparent trade practices; promote fair and ethical dealing in supply agreements; dispute resolution in payment practices; and supplier protection and create an overall level playing field for both retailers and suppliers through promoting a predictable and transparent business environment.

In addition, the Ministry of Trade adopted a prompt payment policy to ensure that suppliers are paid within a stipulated time. This policy aims to address issues related to delayed payments that suppliers may face and promote financial stability for businesses in the supply chain. The stipulated time for payments would be in accordance with the policy, and adherence to this timeline is expected from retailers. Failure to comply could result in cash flow challenges, delayed investments, increased borrowing costs, job losses, loan defaults, financial setbacks, supply chain interruptions, hindrance to new business formation, and erosion of trust and relationships.

e) Market infrastructure

The retail sector is expected to play a crucial role in promoting the country's competitiveness by linking the producers to the consumers. The government seeks to modernize the retail and wholesale markets, invest in cold chain infrastructure, and improve access to rural roads. The specific policy frameworks instituted to achieve Kenya's Vision 2030 through market infrastructural development include the following: County Allocation of Revenue Act (CARA), which devolves a substantial amount to the counties to enable them to develop local county infrastructure; Warehouse Receipting System Act (WRSA), which enables farmers to get loans by using their stored agricultural products as collateral; National Trade Policy (NTP), which aims at promoting a competitive and efficient domestic and international market environment, with development and maintenance of modern market infrastructure across the country being a major goal; and the Public-Private Partnership (PPP) Framework, which seeks to attract private sector investment in various infrastructure development, including retail and wholesale markets.

Some of the progress achieved includes the following: construction of modern markets, for example in Nyeri, Embu, Nairobi, Kisumu, Nyandarua, and Kiambu; and construction

of cold chain infrastructure through initiatives such as the Horticulture Value Chain Project, for example the Ol Kalalu cold storage built at a cost of Ksh 100 million. Notable progress in the PPPs includes the Galana Kulalu Food Park in Isiolo County; and the ongoing modernization and upgrading of eight open-air markets in Nairobi, including the Muthurwa Market and City Market. These infrastructures are expected to boost the productivity of the retail and wholesale sector to a large extent.

The Kenya National Multi Commodities Exchange (Komex) is currently in the implementation phase. It provides a platform for trading diverse commodities, including staple crops, cash crops, metals, mining products, and energy-related commodities, offering market information, access to domestic and international markets, trade finance, and support services for various stakeholders along the value chain. Komex will play a crucial role in enhancing market efficiency, transparency, and productivity within the agricultural sector and the broader economy by facilitating structured trading and providing a marketplace where buyers and sellers can engage in trade with quality assurance, timely delivery, and secure payment.

Despite these efforts, the sector still faces various challenges, including large informal sector dominance, limited cold chain infrastructure, inadequate warehousing and distribution facilities, inadequate market access in rural areas, inconsistent implementation of the County Allocation of Revenue Act (CARA), and the need to integrate the informal sector into the formal economy, among other issues.

f) E-commerce

The Kenya Vision 2030 has identified ICT as a big driver of the country's economic growth and development towards a highly 'knowledge-based economy'. The country's e-commerce has substantially grown in the last decade (2010-2020), aided by huge Internet and smartphone penetration (33% and 60%,

respectively), a young tech-savvy population (29% of the population aged 18-34, and 75% below 34 as per the 2019 census), and the government's efforts to create an enabling e-commerce environment. The expansion of e-commerce has enabled firms to achieve increased efficiency and cost savings, higher sales volumes, broader market reach, improved customer service and engagement, enhanced data-driven decision-making processes, and more effective inventory management. These advancements have collectively had a positive impact on the productivity of these firms, leading to improved overall performance and competitiveness in the digital marketplace.

Some of the policies that have been set up to facilitate the growth of e-commerce in the country include the following: National ICT Policy (2014), which seeks to invest heavily in broadband infrastructure, boost e-government initiatives, and provide a consumer protection framework; e-commerce Bill (2013), which aims to create a legal framework for e-commerce activities in the country, although the bill is yet to be enacted into law; and the launch of the National Electronic Single Window System in May 2014, which sought to boost the country's trade efficiency and competitiveness by facilitating online clearance, and thus reduce the time and cost of doing business. In addition, the National Payments Policy of 2015 sought to boost digital payment development; the Postal Corporation Act (2019) fostered modernization of the postal service; and the African Continental Free Trade Area (AfCFTA) Agreement (2018) sought to create a single African market and promote international E-commerce. Most recently, the launch of the National E-Commerce Strategy on 13th December (2023), which aims to harness the full potential of the country's digital commerce in 2023 (CIOAFRICA, 2023). The Strategy was founded on four pillars: data protection standards, restructuring legal and regulatory frameworks, optimizing the accessibility of payments, and enabling seamless e-commerce by refining trade logistics.

As a result of the above measures, there has been a surge in mobile phone subscriptions (from 23.5 million to 60 million between 2010 and 2020), growth of e-commerce platforms such as Kilimall, Jumia, and Copia, among

others; the rise of e-commerce transactions and the growth of cross border E-commerce. This has consequently led to a rise in the productivity of firms as the distribution of their products is eased.

5.2.3 Policy and legislative frameworks to enhance international trade

The government has put in place policy and legislative frameworks to support international trade. These capture various aspects, including market access; diversification and risk management; technology transfer and learning; foreign investment, and competitiveness as presented in Table 5.2.

Table 5.2: Policy and legislative framework for external trade

General policy focus	Specific policy focus	Specific initiatives, policies, and goals
1. Access to regional and international markets	Regional and international trade agreements with neighbouring countries	The country has implemented several policies to increase trade, both with its neighbours and at the international level to simplify trade procedures, increase its efficiency, and thus increase trade. These include: <ul style="list-style-type: none"> • Joining the WTO in 1995; • Joining the East African Community (EAC) in 2000; • Engagements with the Common Market for Eastern and Southern Africa (COMESA); • The signing of the African Growth and Opportunity Act (AGOA) in 2000; • Formation of the Kenya Trade Network Agency (KenTrade) in 2011 to promote cross border trade; • Signing of the African Continental Free Trade Area (AfCFTA) in 2018; and • Ratification of the Economic Partnership Agreements with the EU in 2013, and the signing of the Kenya-UK-EPA in 2020 among others.
	Trade facilitation measures	Streamlining of domestic and international trade facilitation policies through reducing tariff and non-tariff barriers Digitalization/automation of customs processes Implementation of the Single Customs Territory (SCT) in 2013 among the Northern Corridor states Implementation of one-stop border posts and border management systems in 2015
	Infrastructure investments	Development of the Standard Gauge Railway from Mombasa, Nairobi, and Suswa. Upgrading of several air, rail, and seaports (for example expansion of the Jomo Kenyatta Airport, expansion of the Kenya Ports Authority and LAPSSET)

General policy focus	Specific policy focus	Specific initiatives, policies, and goals
<p>2. Diversification and risk mitigation</p>	<p>Export development and industrial transformation</p>	<p>Kenya's National Industrial Transformation Strategy 2050, which is founded on Vision 2030, seeks to focus on specific sectors such as agro-processing, mining, construction, and oil and gas, among others, to build on its comparative and competitive advantage in becoming a high-income manufacturing country</p> <p>Development of Kenya's National Export Development and Promotion Strategy (NEDPS) 2018 aims to diversify Kenya's exports and exports market</p>
	<p>Negotiations and signing of trade agreements</p>	<p>The country has signed new bilateral and regional agreements, MoUs, and JTCs to expand her markets to the USA, European Union, Africa, and Asia. These include the Economic Partnership Agreement with the European Union (EU); the African Growth and Opportunity Act (AGOA); the US-Kenya Trade and Investment Framework Agreement (TIFA); the African Continental Free Trade Area (AfCFTA); and bilateral trade agreements with other countries such as Russia, India, and China</p>
	<p>Development of special economic zones</p>	<p>The Special Economic Zones Authority (SEZA) is established and governed by the Special Economic Zones Act No. 16 of 2015, which provides the essential legal framework for the functioning of Special Economic Zones (SEZs). The establishment of several SEZs, for example, Dongo Kundu Special Economic Zone; Naivasha Special Economic Zone; Tatu City Special Economic Zone; Eldoret Special Economic Zone; and Kisumu Special Economic Zone. These have been geared towards diversifying Kenyan's economy by encouraging agro-processing and manufacturing</p>
	<p>Risk insurance schemes</p>	<p>These include the Kenya National Export Credit Insurance Scheme (NECIS) of 2016, which aims to protect exporters against trade losses and give them financial security</p>

General policy focus	Specific policy focus	Specific initiatives, policies, and goals
3. Technology transfer and learning	Development of industrial parks	Establishment of industrial parks and centres, for example, the Jomo Kenyatta University of Agriculture and Technology (JKUAT) Industrial Park (2008); University of Nairobi Science and Technology Park (UNST Park) (2015); Konza Technopolis (2013); and the Dongo Kundu Special Economic Zone (SEZ) (2018)
	Enhancing research for development	Support for research and development to encourage technological investments and innovations. These include collaborations with learning institutions through incubation centres in several universities. The Kenya Industrial Property Institute (KIPI) was formed in 1990 to encourage innovation and thus promote technology transfer and learning
	Expansion of Technical and Vocational Education and Training (TVET)	<p>The National Policy on Education of 2006 outlines the government's efforts to promote TVET as a major driver of skills and technological development</p> <p>The TVET Act (2013) provides a legal framework for regulating and upholding quality standards</p> <p>The National Industrial Training Authority (NITA) Act (1964) coordinates and regulates industrial training programmes in the country</p> <p>The Kenya Youth Employment and Opportunities Project (KYEOP) (2016) promotes the growth of TVET in the country and provides skills, training and employment opportunities for the youth</p> <p>National Skills Development Policy (2012) geared towards enhancing the quality of TVETs, closing skills gaps and fostering lifelong learning</p>
	Investment in Information and Communication Technology (ICT)	<p>National ICT Policy (2006) aims to promote entrepreneurship, improve access to ICT infrastructure and foster innovation</p> <p>Ajira Digital Talent Programme (2013) by the Ministry of ICT, Innovation and Entrepreneurship is aimed at equipping youths' employability in the ICT sector</p> <p>E-Government Policy (2006) is aimed at promoting the use of ICT in government operations. The aim is to increase the government's efficiency and transparency, through platforms such as E-citizen, which was launched in 2007</p> <p>The Broadband Strategy (2013) is aimed at ensuring the affordability of high speed and affordable Internet across the country</p>

General policy focus	Specific policy focus	Specific initiatives, policies, and goals
<p>4. Foreign Investment</p>	<p>Incentivising expansion of Special Economic Zones (SEZs)</p>	<p>Corporate Tax Holidays (2016) was established to attract business within the SEZs. It provides them with an exemption from corporate income tax for up to ten years. This was expected to lower their operational costs and raise their profitability</p>
		<p>The Single Business Permit Portal (2018) allows the streaming of the business registration process in SEZs, and thus reduces bureaucratic procedures</p>
		<p>The Reduced Duty on Raw Materials and Equipment (2016) focused on boosting industrial growth by eliminating taxes from essential manufacturing raw materials needed in the SEZs</p>
		<p>Work Permits for Skilled Expatriates were introduced in 2015 to ensure that SEZ firms enjoy concessions on work permits for the skilled labour force</p>
	<p>Public-Private Partnerships (PPPs)</p>	<p>The Public-Private Partnerships (PPP) Act (2021) is aimed at attracting investments and stimulating economic development. It lays a strong foundation for PPPs</p>
		<p>Public-Private Partnerships Act (2013) superseded the 2009 PPP policy. It made a more comprehensive legal framework for PPPs in Kenya. It enhanced the transparency and accountability of PPP funds</p>
		<p>Public-Private Partnerships (PPP) Bill 2021 is aimed at improving the efficiency of the PPPs. It strengthened the Privately Initiated Investment Proposals (PIIPs), enlarged procurement options, and stipulated clear timelines for the project processes</p>
	<p>Establishment of investment promotion agencies</p>	<p>Kenya Investment Authority (KenInvest) was established in 2004 and tasked with marketing the country to foreign investors</p> <p>The country has introduced different investment incentives to attract foreign investors, increase capital flows, and promote economic growth and development. These include:</p> <ul style="list-style-type: none"> (i) Tax holidays; (ii) Investment allowances; and (iii) Duty exemptions.

General policy focus	Specific policy focus	Specific initiatives, policies, and goals
5. Boosting competitiveness	Supporting innovation and Research and Development (R&D)	The Kenya Vision 2030 (2008) underscores the role of STI as a critical driver of a knowledge-based, globally competitive, and innovative economy by boosting productivity across all sectors
		The National Science, Technology, and Innovation (STI) Policy (2012) aims at promoting science, technology, and innovation (STI) in Kenya by encouraging R&D, building human capital, and boosting innovation
		The Science, Technology, and Innovation Act (2013) established key bodies responsible for managing and promoting STI activities in the country. These included the National Research Fund (NRF), the Kenya National Innovation Agency (KeNIA), and the National Commission for Science, Technology and Innovation (NACOSTI)
		Reduction of the cost of doing business meant to promote domestic trade has also led to the expansion of international markets. Increasing access to finance for MSMEs
	Quality standards and certification	The country has established certification institutions such as the Kenya Bureau of Standards (KEBS), which seeks to maintain quality standards. This increases consumer confidence and facilitates access to export markets.
	Export promotion programmes	<p>The enactment of the Kenya Export Promotion and Branding Agency Act No. 19 of 2019 signifies a strategic move to enhance export promotion and branding initiatives. The primary objective of this legislation is to facilitate the implementation of export promotion and nation branding initiatives and policies aimed at boosting the export of goods and services from Kenya.</p> <p>The Export Market Access (EMA) programme, which assists in accessing global markets and thus promoting the competitiveness of Kenyan goods</p>
	Competition regulation	These include the Competition Authority of Kenya (CAK), which prevents anti-competitive practices such as price fixing and monopolies, which can lead to market inefficiencies if uncontrolled
Industrialization promotion	The Kenya Vision 2030 aims to make the country a prosperous and globally competitive country with high standards of living by transforming the economy from a supply-constrained domestic market to wider integration in the global markets	

5.2.4 Impact of government’s initiatives to enhance international trade

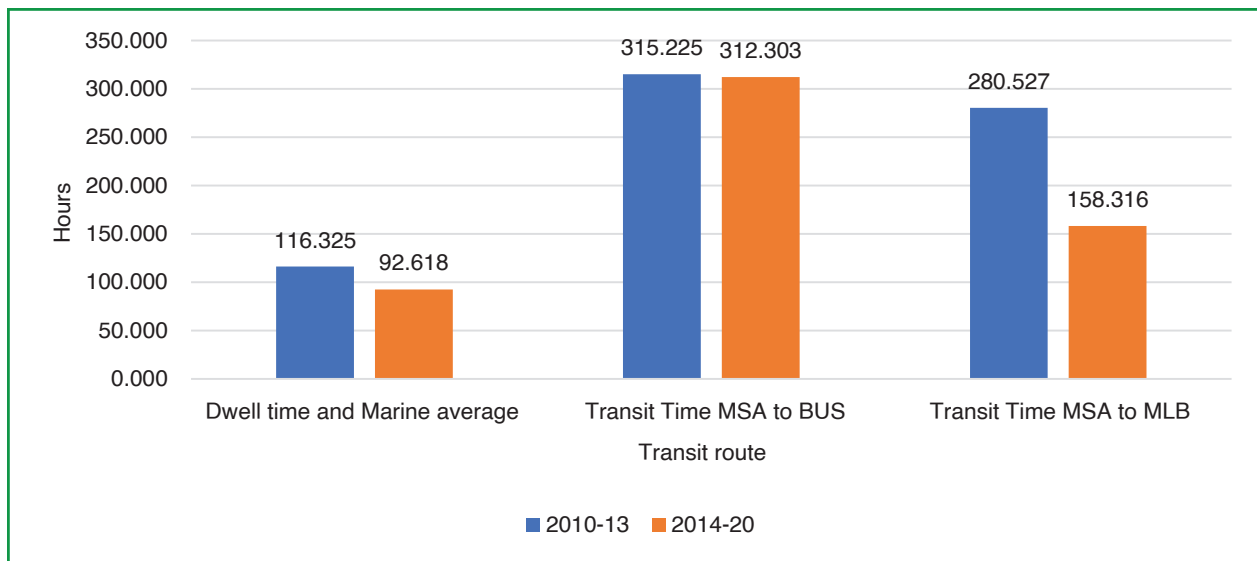
This section discusses the implications of the implementation of Single Customs Territory (SCT) and regional and international trade agreements.

a) Implications of implementation of Single Customs Territory (SCT)

The Northern Corridor has achieved great progress since the SCT was implemented in 2014 with the Northern Corridor members’ merchandise exports and imports steadily rising. The value of exports increased from US\$ 16,251 billion in 2010, before the

implementation to US\$ 25,873 billion in 2014 after the implementation of SCT. This led to an increase in imports from US\$ 25,382 billion to US\$ 42,270 billion in 2010 and 2014, respectively. At the same time, the transit time between Mombasa and Busia decreased from an average of 315 hours to 312 hours, and from Mombasa to Malaba from 280 hours to 158 hours. Additionally, the cargo dwell time and marine time at the Port of Mombasa decreased from 116 hours to 92.62 hours between the periods of 2010-2013 and 2014-2020, as illustrated in Figure 5.1. These advancements reflect the benefits and enhanced trade facilitation brought about by the implementation of the SCT, fostering increased efficiency and growth in regional trade activities.

Figure 5.1: Average transit and cargo dwell time at the Port of Mombasa 2010-13, and 2014-20



Data source: Northern Corridor, 2022

In the Democratic Republic of Congo, an exporter spends an average of 414 hours and incurs a cost of US\$ 2,222.7 to fulfill all border requirements. Additionally, the process of obtaining, preparing, and submitting export documentation takes approximately 273.3 hours, costing around US\$ 500. In contrast, in Kenya, exporters spend an average of 21.5 hours and US\$ 142.5 to meet border

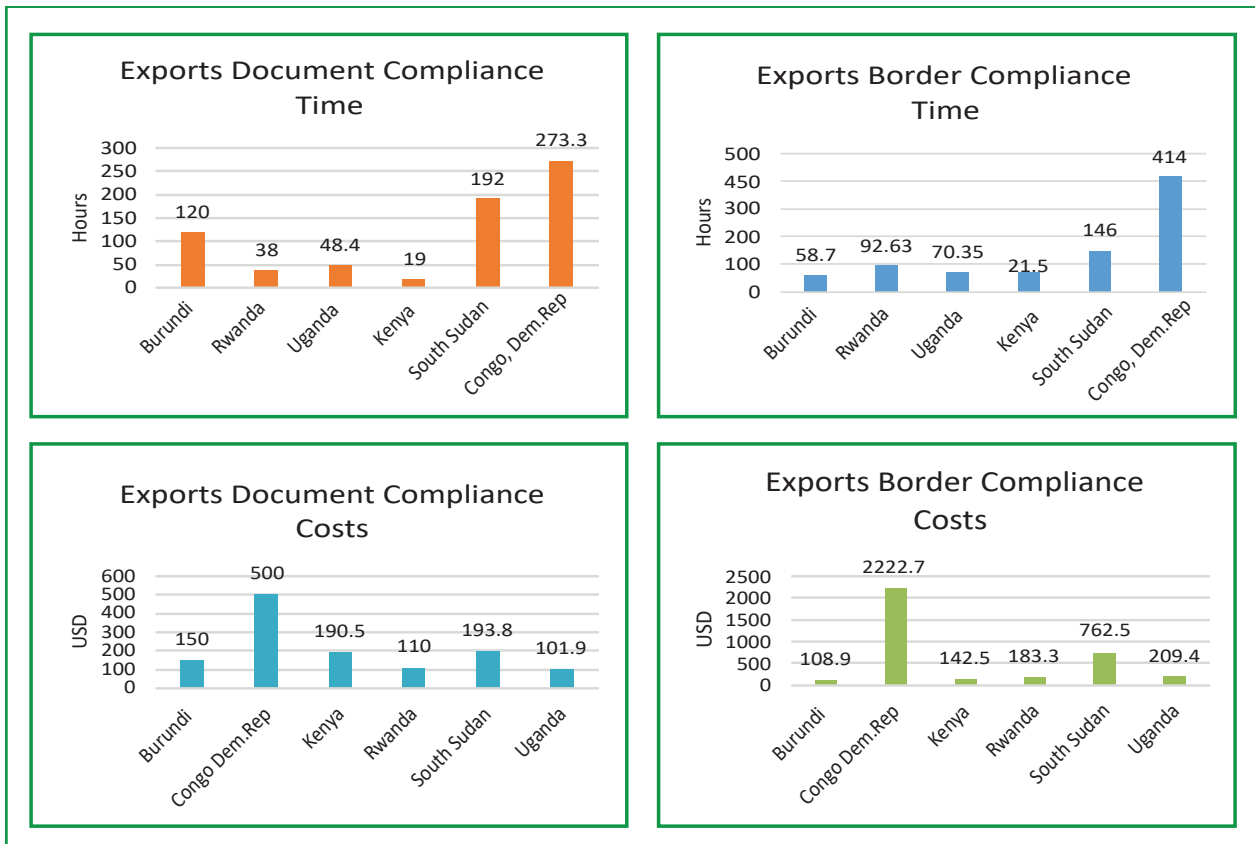
requirements, while complying with all document requirements takes 19 hours at a cost of US\$ 190.5.

The duration required for document compliance varies among the Northern Corridor member States, with the Democratic Republic of Congo (DRC) having the longest time at 273 hours and Kenya the shortest at 19 hours. In

comparison, Rwanda, Uganda, Burundi, and South Sudan recorded times of 38 hours, 48 hours, 120 hours, and 192 hours, respectively. The associated costs for document compliance also exhibit disparities, with the DRC incurring the highest cost at approximately US\$ 500, followed by South Sudan at US\$ 193. Kenya ranks third, with a relatively high cost of

document compliance at around US\$ 190 (Figure 5.2). These disparities in both time and costs highlight the importance of efficient regulatory frameworks and streamlined processes to enhance business operations and promote economic growth across the Northern Corridor region.

Figure 5.2: Trends in border and document compliance time and costs (2014-2020) among Northern Corridor member States



Source: Authors' calculations based on World Bank Data Doing Business database

Comparing the periods before and after the implementation of the SCT, there has been a significant reduction in the average time required for both border and document clearance for importers and exporters. Table 5.3 illustrates that the time for export clearance has decreased to an average of 10 days, a substantial improvement from the previous 37 days pre-implementation. Notably, Kenya has made progress in export clearance time,

decreasing from 26 days to an average of 1.6 days. However, countries such as the Democratic Republic of Congo (DRC) and South Sudan still experience longer export durations post-SCT implementation, with approximately 28 days and 15 days, respectively. Uganda and Rwanda have also witnessed improvements, with exporters now requiring about five (5) days for export procedures, down from the previous 30 days before SCT implementation.

On the import side, the import time has reduced to about 10 days from 25 days. Rwanda recorded the shortest import time at approximately 6.4 days, down from 31 days. However, import times remain relatively high for DRC and South Sudan at around 28 days and 22 days, showing

a significant reduction from 63 days and 130 days, respectively. These improvements reflect the positive impact of the SCT on streamlining trade processes and enhancing efficiency within the region.

Table 5.3: Time to export and import before and after implementation of SCT

	Time in days before SCT		Time in days after SCT	
	(2010-2013)		(2014-2021)	
	Exporting	Importing	Exporting	Importing
Burundi	35.50	51.50	7.45	13.93
Rwanda	30.50	31.33	5.44	6.40
Uganda	31.67	31.67	5.95	11.48
Kenya	26.17	25.17	1.69	10.60
South Sudan	55.00	130.00	15.08	22.46
DRC	45.00	63.00	28.64	28.25
Average	37.14	55.44	10.37	15.52

Source: Authors' calculations based on World Bank Data, Doing Business database

The costs of documentation and border compliance have also been reduced in comparison to the aggregated amounts before the implementation of SCT. Uganda's costs decreased to US\$ 446 for border compliance,

US\$ 295 for documentation compliance for import clearance, US\$ 209 for border compliance, and US\$ 101 for document compliance for export clearance as shown in Table (5.4).

Table 5.4: Cost to export and import before and after the implementation of SCT

	Cost before SCT ¹³		Costs after SCT			
	(US\$)		(US\$)			
	(2010-2013)		(2014-2020)			
	Exports	Imports	Border compliance		Document compliance	
Exports			Imports	Exports	Imports	
Burundi	4,170.40	6,676.23	108.90	443.60	150.00	1025.00
DRC	4,286.08	5,178.70	2,222.70	3039.00	500.00	765.00
Kenya	2,751.00	2,916.28	142.50	832.50	190.50	115.00
Rwanda	2,650.18	4,046.45	183.30	325.03	110.00	121.10
South Sudan	5,633.40	9,805.30	762.50	781.30	193.80	350.00
Uganda	4,378.85	4,625.00	209.40	446.70	101.90	295.60
Average	3,978.32	5,540.99	605.88	977.86	207.70	445.28

Source: Authors' calculations based on World Bank Data, Doing Business database

¹³ The SCT covers both the border compliance and document compliance.

b) International trade agreements and market access

Since independence, Kenya has entered into several trade agreements to enhance the country's market access across the globe. The agreements take several forms, including bilateral, regional, and multilateral trade agreements and other trade-related arrangements.

Role of AfCFTA framework in boosting Kenya's trade

In March 2018, Kenya became a signatory to the agreement establishing the African Continental Free Trade Area (AfCFTA), marking considerable progress towards achieving continental integration. With a coverage of 54 countries and a population of about 1.3 billion people, the agreement offers room for the largest global trade liberalization in both goods and services (World Bank, 2020). Central to this, the AfCFTA is expected to enhance market access, increase productivity, enhance social and economic development, and boost intra-African trade.

AfCFTA offers a great opportunity to boost Kenya's export trade. Before the coming into force of the agreement, Kenya's trade was mostly extra-African both in imports and exports. Kenyan exports to African countries

represented between 37-45 per cent of the total exports, with most of the export trade happening within the COMESA and EAC region between the period 2010 and 2020 (KNBS, 2021). The intra-African imports accounted for between 9.0 per cent and 11 per cent of the total imports, making Kenya a net exporter within the African continent. The composition of Kenya's exports includes tea, iron and steel products, paper, and oils while the major imports are maize, paper products, sugar, and vegetables. With the entry of AfCFTA, it is anticipated that Kenya will experience increased intra-trade that will boost productivity in the sectors with a comparative advantage in supplying the exports. The key takeaways from Box 5.1 indicate a significant increase in cash crop exports by 19-21 per cent, while there has been a decrease in exports of livestock, meat, fish, and food crops by 5-6 per cent. Exports of manufactured products have shown substantial growth of 39-40 per cent, and extractive industry exports have increased by 23-24 per cent. Processed food exports have increased by 20-40 per cent, with services exports also experiencing an increase of 13 per cent. Importantly, there has been a notable larger growth in imports of food crops by 57-62 per cent and processed food by 50-116 per cent, accompanied by cost reductions in non-tariff measures (NTMs). Box 5.1 demonstrates an empirical analysis of the implications of AfCFTA on Kenya's trade within the continent using the CGE framework.

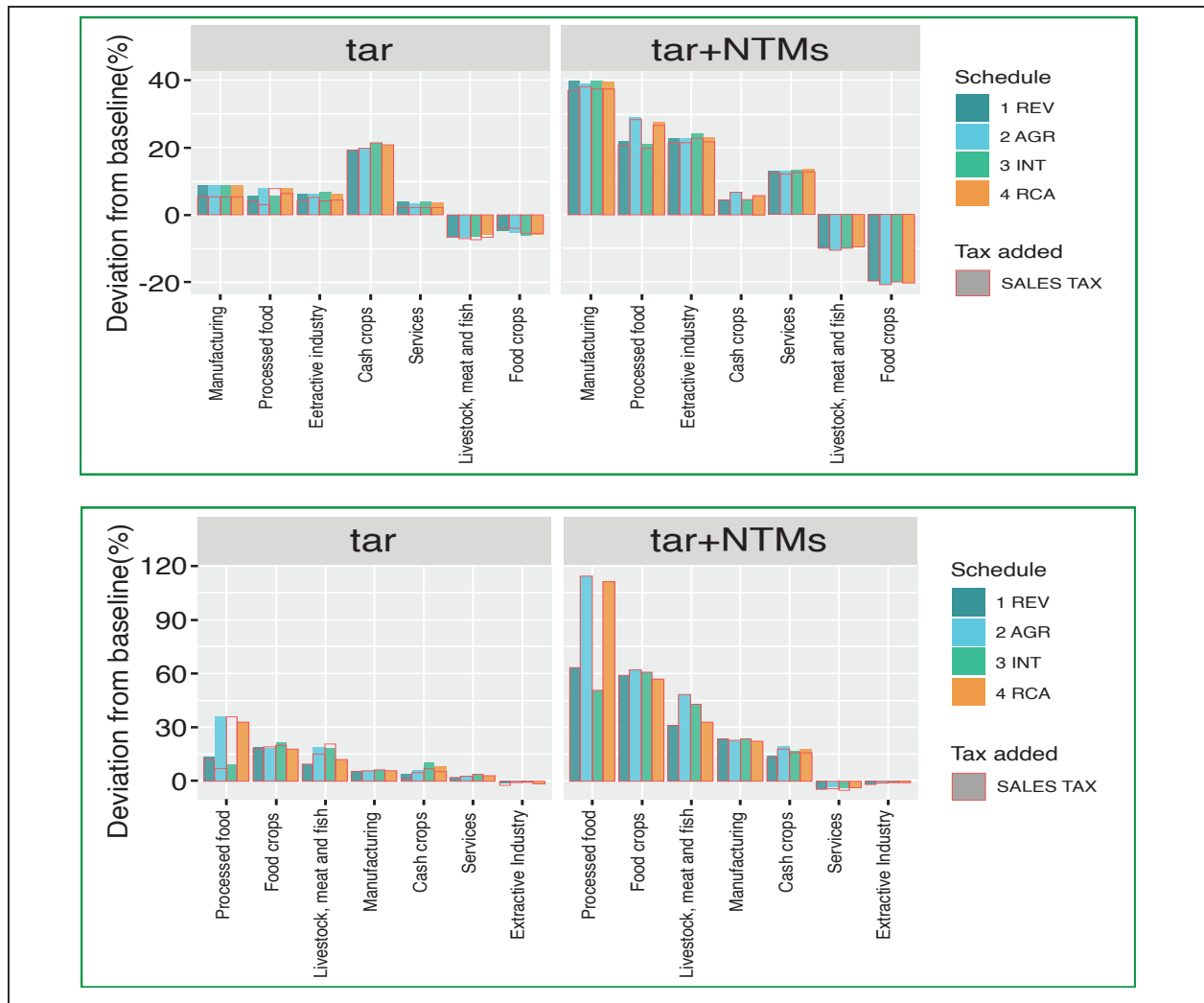
Box 5.1: Impact of AfCFTA on Kenya's trade

Empirical evidence using a CGE framework provides insightful support of the impact of AfCFTA implementation on the Kenyan economy. The findings suggest that tariff-only liberalization leads to mixed results on exports across the main product groups (Figure a). By 2035, it determines a strong expansion of cash crops exports (19-21%), a mild growth for manufacturing, processed food, and extractive industry products, while livestock, meat, and fish together with food crops reduce by 5-6 per cent. On the imports side (Figure b), there is a net increase in volumes across all product groups, notably, that of agrifood products. Imports of food crops expand by 18-21 per cent and processed food by 9-36 per cent (AGR leading to the highest expansion).

The NTMs liberalization determines a significant growth of exports from non-agrifood sector. Exports of cash crops expand by 4-7 per cent relative to the baseline, far less than in the tariff-only liberalization variant, while a reduction in exports of cash crops reaches 20 per cent. At the same time, exports of manufactured products grew by 39-40 per cent (more in the INT liberalization schedule), the extractive industry by 23-24 per cent, processed food by 20-40 per cent (the highest variation across liberalization schedules), and services by 13 per cent. For imports, the reduction in NTMs costs determines an even larger import growth of food crops (57-62%) and processed food (50-116%) with the AGR schedule leading to the highest volumes. The other sectors' exports also expand, except for the extractive industry and services, the latter effectively having a contraction from baseline levels.

The addition of sales tax in both liberalization schedules has a visible effect only on the exports of manufacturing, and extractive industry products. The higher sales tax leads to an increase in production costs for more complex sectors requiring many intermediate products as inputs.

Source: Nechifor et al. (2022)



Role of AGOA framework in boosting Kenya's trade

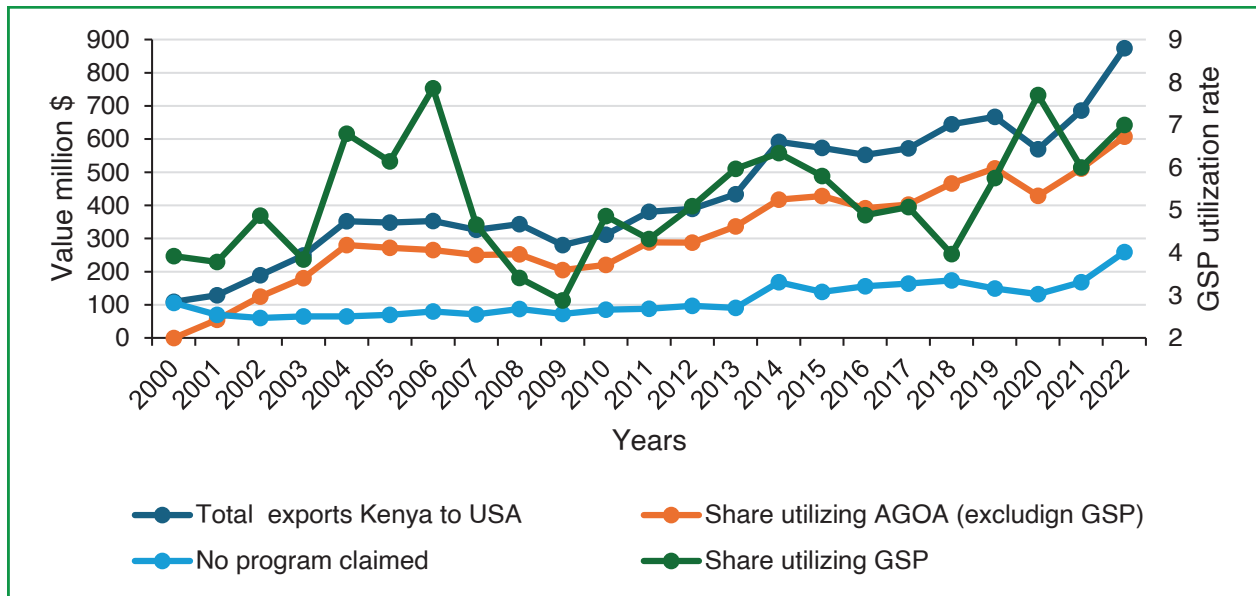
The African Growth and Opportunity Act (AGOA) has played a pivotal role in boosting exports from Sub-Saharan African (SSA) countries to the USA, including Kenya. With AGOA, duty-free exports to the USA have increased from 43 per cent in 2001 to 69 per cent by 2022. This growth has led to increased investments in technology, machinery, and labour to meet the demands of the US market, resulting in job creation, higher efficiency, and enhanced competitiveness. Sectors such as textiles, apparel, and light industries, which heavily rely on AGOA, accounted for 68 per cent of all AGOA exports in 2022, driving productivity gains in these sectors.

The duty-free access to the US market under AGOA has incentivized productivity improvements in sectors such as textiles and apparel. The country's textile and garment sector has experienced growth in capital investment, employment, and exports. For example, the total

number of employees in the EPZs increased by 20 per cent from 0.05 million in 2015 after the extension of AGOA to 0.06 million in 2019, while labour productivity averaged Ksh 1.27 million over the same period. Investments increased from Ksh 47 billion in 2015 to about 107 billion in 2019, while exports increased from Ksh 60 billion to Ksh 68 billion over the review period, showing the significance of AGOA in increasing investments, job creation, and export earnings (EPZA, 2021).

As AGOA approaches its end in 2025, there is a risk of declining competitiveness, production, investment, and employment for firms dependent on AGOA benefits and not included in the other preferential trade schemes such as the GSP. To mitigate these risks, Kenya must secure a more enhanced trade framework like AGOA with the US if there will be no extension to ensure continued market access after 2025. By exploring new export opportunities, Kenya can sustain and enhance its trade performance and productivity among participating firms beyond the current AGOA framework.

Figure 5.5: US imports of goods from Kenya, by programme, 2000-2022



Data source: AGOA.Info, (2024)

5.3 Role of Domestic Trade in Boosting Productivity

In Kenya, the wholesale and retail trade sector contributed about 7.0 per cent of GDP in 2023. This dynamic sector includes diverse entities, ranging from large corporations to Micro, Small, and Medium Enterprises (MSMEs). MSMEs account for over 80 per cent of employment generated (238,500 people). Additionally, it contributes a huge share of GDP (7.4% in 2022). The following section provides insights into the structure of domestic trade.

5.3.1 Wholesale and retail trade sector

The supermarkets in the country form a significant component of the wholesale and retail sub-sector. The closure of branches among several supermarkets in Kenya led to a significant decrease in the total number of branches across major supermarkets from 2018 to 2023, with significant implications for the distribution of goods and services in the retail market sector. In 2018, the total number of branches was 257, but by 2023, the closures, particularly by Tuskys, Uchumi, Game Stores, Nakumatt, Choppies, and Shoprite, resulted in a substantial reduction. Specifically, Tuskys closed 59 branches, Uchumi closed 35, Game Stores closed three (3), Nakumatt closed 65, Choppies closed 15, and Shoprite closed four (4). As a result, the overall number of branches decreased to 189 in 2022 and further to 171 by December 2022. However, the number increased to 227 after the expansion of branches of Naivas, Quickmat, and Carrefour.

The above decline is due to the financial turmoil and economic challenges (recurrent losses), weak management, changing consumer behaviour towards online platforms (E-commerce), intense domestic and international competition, macroeconomic pressures (for example high rates of interest, large operational costs, slow growth of incomes and currency depreciation) and strategic missteps such as over expansion, weak

inventory management, neglect of e-commerce and weak supply chain management.

This has had far-reaching implications for the retail market, the real estate sector, and the economy. First, the closures have resulted in the loss of jobs for a significant number of employees, contributing to an already growing pool of unemployed individuals. This has a serious ripple effect on the incomes of individuals, and consequently consumer spending and overall economic growth and productivity.

Second, the reduction in retail outlets has impacted the real estate retail market, with a decrease in the demand for retail space and storage facilities. This could lead to a decline in real estate investment returns in addition to a fall in rental incomes, and reduced demand for both the commercial services and property values.

Third, the closures have affected the competitive landscape of the retail market, with the exit of major players creating opportunities for other retailers to fill the gap. For instance, local retailers such as Khetias and Naivas have expanded their market share, while international retailers such as Carrefour and Shoprite have made strategic moves to capitalize on the changing market dynamics.

Although the closures of popular players create uncertainty for consumers, the entry and expansion of local and international brands create a potential for increased competition and boost of local businesses. The closures have also disrupted the accessibility of essential goods and services for consumers, which has implications for productivity in other sectors of the economy, such as agriculture and manufacturing. Finally, the decline in the number of branches has negatively impacted the supply chains, highlighting the interconnectedness of the retail sector with other industries and the broader economy (for example agriculture, manufacturing, transport and logistics, and real

estate), all of which have negative effects on productivity. The ripple effects of the disruption of manufacturers and suppliers lead to reduced

demand for their goods and services, and thus low revenues and reduced production.

Table 5.5: Number of retail market branches of Kenya’s supermarkets, 2018-2023

Retailer	Ownership	2018	2019	2020	2021	2022	2023
Naivas	Hybrid	46	61	69	79	91	100
Quickmart	Hybrid	10	29	37	48	15	59
Chandarana	Local	14	19	20	23	26	26
Carrefour	International	6	7	9	16	19	22
Cleanshelf	Local	9	10	11	12	12	13
Tuskys	Local	53	64	64	6	6	5
Uchumi	Local	37	37	37	2	2	2
Game Stores	International	2	2	3	3	0	0
Choppies	International	13	15	15	0	0	0
Shoprite	International	2	4	4	0	0	0
Nakumatt	Local	65	65	65	0	0	0
Total		257	313	334	189	171	227

Source: Cyton Market Outlook, 2024

5.3.2 Involvement of MSMEs in trade

Micro, Small, and Medium-sized Enterprises (MSMEs) play a crucial role in trade activities within Kenya’s economy, contributing significantly to domestic and international trade. Their involvement spans various sectors and channels, reflecting their adaptability and resilience in navigating trade dynamics. At the domestic level, MSMEs are integral to the wholesale and retail trade sector, facilitating the distribution and exchange of goods within local communities and across regions. They serve as key drivers of economic activity, leveraging their proximity to consumers to meet diverse market demands. MSMEs largely engage in trade with each other, with 13 per cent trading with each other and fostering a network of intra-MSME transactions that support local economies and promote entrepreneurship.

The distribution of firms within the wholesale and retail trade sector presents a nuanced landscape, with distinct proportions across different size categories, with micro firms

accounting for 95.49 per cent of the distribution. Small firms constitute 3.94 per cent, while medium firms make up 0.57 per cent of the total. These statistics highlight the significant presence of micro firms in the wholesale and retail trade sector, underscoring their substantial role in the country’s economic landscape.

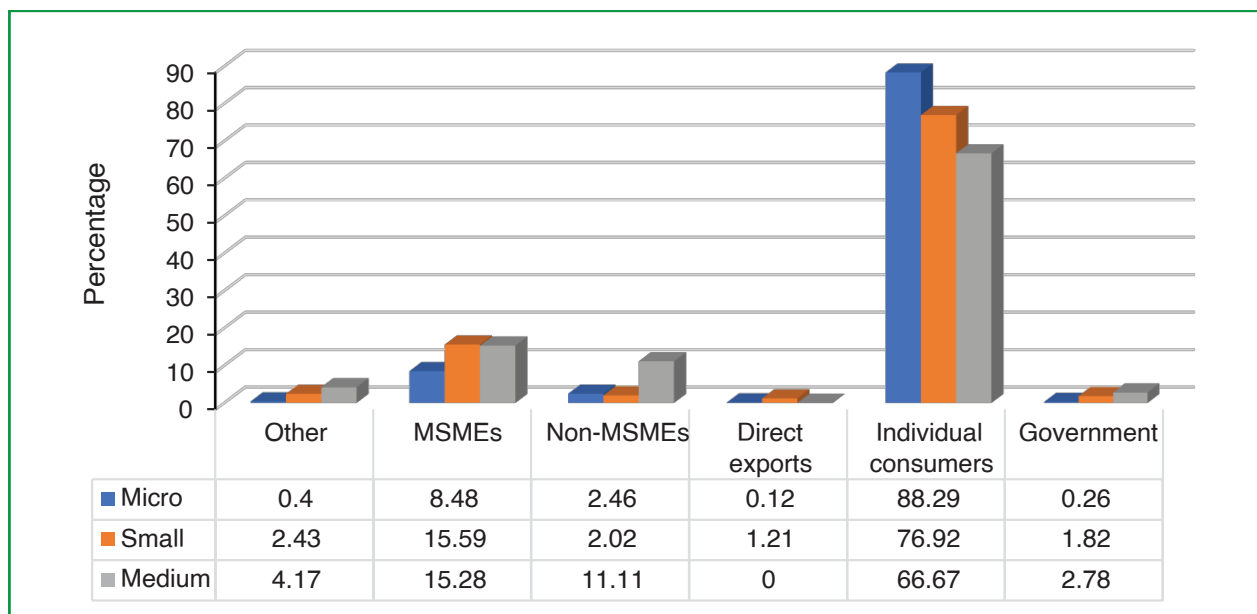
MSMEs channels for sales distribution

MSMEs sell their products across various channels, each contributing differently to their overall sales distribution. Individual consumers emerge as the primary market for MSMEs across all firm-size categories. Specifically, micro-enterprises make the highest percentage of sales to individual consumers, accounting for 88.29 per cent, followed by small enterprises at 76.92 per cent, and medium-sized enterprises at 66.67 per cent. Direct exports are negligible for medium-sized enterprises, while micro and small enterprises show some engagement in this channel, accounting for 0.12 per cent and 1.21 per cent of sales, respectively.

Small enterprises play a role in supplying non-MSMEs, with 2.02 per cent of small enterprises selling their products to larger businesses. Sales to non-MSMEs, which likely include larger corporations or entities outside the MSME category, vary across firm size categories. Micro-enterprises make 2.46 per cent of their sales to non-MSMEs while medium-sized enterprises make 11.11 per cent. This indicates that MSMEs are an essential source of supply for larger businesses in Kenya. The government

is a significant market for MSMEs, with a small proportion of 0.26 per cent of micro-enterprises, 1.82 per cent of small enterprises, and 2.78 per cent of medium enterprises selling their products to the government, indicating a low uptake of Access to Government Procurement Opportunities (AGPO). This low uptake suggests that there is a significant opportunity for MSMEs to increase their sales by engaging more with the government procurement process, which offers a ready market.

Figure 5.4: Access to markets by MSEs, 2016



Data source: KNBS (2016), MSME Survey

A further analysis was conducted to examine the differences in the productivity of the firms that export against those that do not. Exporting firms demonstrate high productivity with an average of 303,536.70 compared to 23,399.25 for non-exporting firms (World Bank Enterprise Survey, 2018). In terms of worker composition, exporting firms have a more balanced mix of skilled and unskilled workers, with 47 per cent skilled and 53 per cent non-skilled, while non-exporting firms have 9.0 per cent skilled and 91 per cent non-skilled workers. Additionally,

exporting firms allocate significantly more to research and development, with an expenditure of Ksh 2,340 compared to Ksh 112 for non-exporting firms. Exporting firms, however, have slightly lower capital intensity per worker at 117,190 versus 126,932 for non-exporting firms. These findings highlight the positive impact of export activities on firm productivity, workforce composition, and investment strategies, emphasizing the benefits of international trade for enhancing efficiency and competitiveness within businesses.

Contracting arrangements for MSMEs inputs

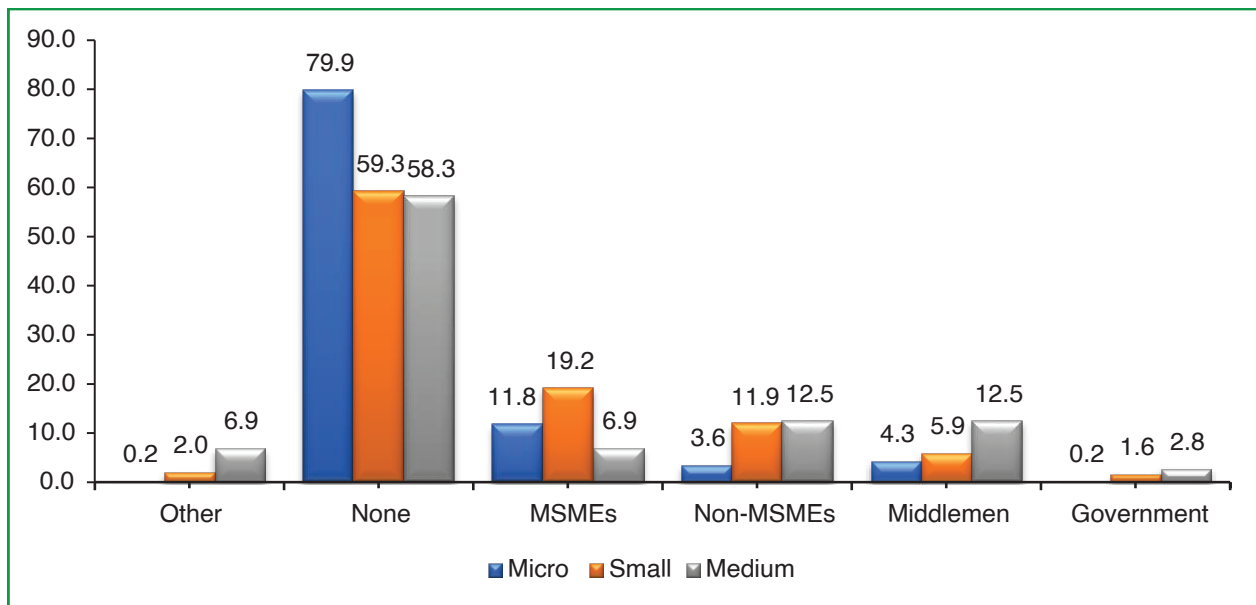
MSMEs participate in the contracting arrangements for inputs or orders received, highlighting the channels through which enterprises procure goods or secure orders. Figure 5.5 shows that a significant proportion of MSMEs, particularly small enterprises, rely on non-contractual arrangements for inputs or orders. Specifically, 79.9 per cent of micro-enterprises, 59.3 per cent of small enterprises, and 58.3 per cent of medium-sized enterprises operate under non-contracting arrangements, suggesting a prevalent reliance on informal or non-structured arrangements.

In addition, a notable percentage of MSMEs, particularly micro and small enterprises, engage in contractual arrangements for their inputs or orders among themselves. About 11.8 per cent of micro enterprises, 19.2 per cent of small enterprises, and 6.9 per cent of medium enterprises operate under formal contracts. Engaging in input contracts offers several advantages, including cost management and

predictability, optimization of the supply chain, resource allocation for other business activities, and enhancement of quality and consistency. These benefits collectively contribute to improved productivity within the firm.

Non-MSMEs, including larger businesses, are also involved in contractual arrangements with MSMEs. About 3.6 per cent of micro-enterprises, 11.9 per cent of small enterprises, and 12.5 per cent of medium enterprises receive inputs or orders through formal contracts with non-MSMEs. Middlemen play a role in facilitating contractual arrangements for MSMEs. About 4.3 per cent of micro-enterprises, 5.9 per cent of small enterprises, and 12.5 per cent of medium enterprises receive inputs or orders through formal contracts with middlemen. The government is also involved in contractual arrangements with MSMEs, albeit to a smaller extent with about 0.2 per cent of micro-enterprises, 1.6 per cent of small enterprises, and 2.8 per cent of medium enterprises receiving inputs or orders through formal contracts with the government showing limited engagement between government and MSMEs.

Figure 5.5: MSMEs contracting arrangements for inputs, 2016



Data source: KNBS (2016), MSME Survey

The presence of input contracts has a significant impact on productivity levels. Firms with input contracts have higher productivity, averaging 30,765.24 compared to 19,603.94 for firms without input contracts. This suggests that the use of input contracts plays a crucial role in enhancing productivity within firms. Structured agreements are important in enhancing operational efficiency and output levels within businesses.

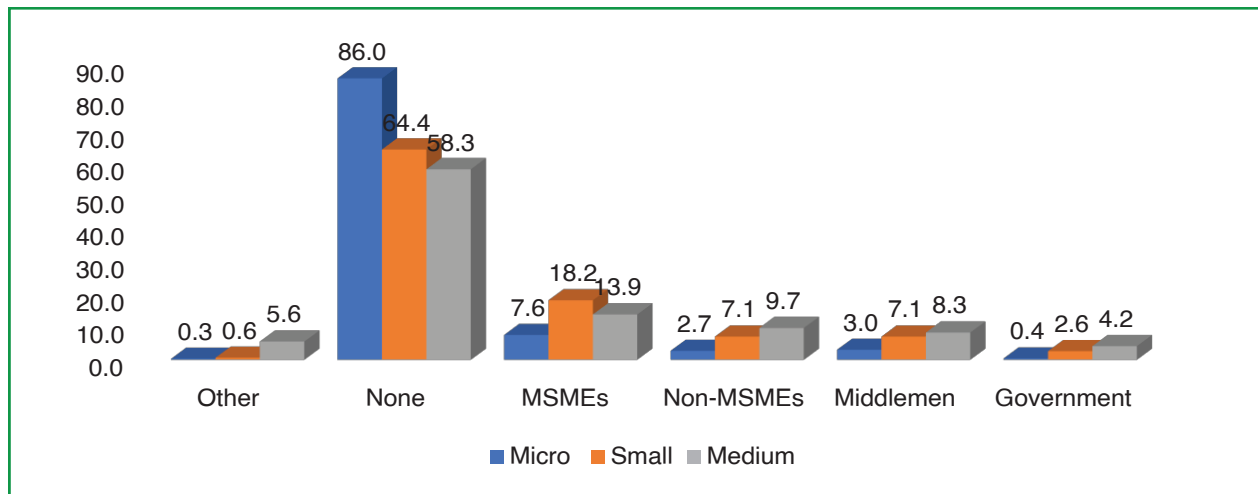
Contractual arrangements for MSMEs products and services

MSMEs engage in different contracting arrangements for the products or services they produce, showcasing the various channels through which these enterprises engage in formal agreements for their output. Figure 5.6 reveals that a significant proportion of MSMEs, particularly small enterprises, rely on non-contractual arrangements for their products or services. Specifically, 86.0 per cent of micro-enterprises, 64.4 per cent of small enterprises, and 58.3 per cent of medium-sized enterprises indicate that they do not operate under any formal contracts for their products or services. This suggests a prevalent reliance on informal or non-structured arrangements within this segment of the market.

A notable percentage of MSMEs, particularly micro and small enterprises, engage in contractual arrangements for their products or services among themselves. About 7.6 per cent of micro-enterprises, 18.2 per cent of small enterprises, and 13.9 per cent of medium enterprises operate under formal contracts, indicating a relatively higher prevalence of structured agreements within themselves. Non-MSMEs, including larger businesses, are also involved in contractual arrangements with MSMEs. The data shows that 2.7 per cent of micro-enterprises, 7.1 per cent of small enterprises, and 9.7 per cent of medium enterprises produce products or services through formal contracts with non-MSMEs.

Additionally, middlemen play a role in facilitating contractual arrangements for MSMEs. About 3.0 per cent of micro enterprises, 7.1 per cent of small enterprises, and 8.3 per cent of medium enterprises produce products or services through formal contracts with middlemen. The government is also involved in contractual arrangements with MSMEs, albeit to a small extent. About 0.4 per cent of micro-enterprises, 2.6 per cent of small enterprises, and 4.2 per cent of medium enterprises produce products or services through formal contracts with the government.

Figure 5.6: MSMEs contractual arrangements for goods and services, 2016



Data source: KNBS (2016), MSME Survey

Firms that use contractual arrangements for their final goods and services have higher productivity levels, with those employing product contracts averaging 38,756.88 compared to 19,083.84 for firms without such arrangements (Figure 5.6). This is consistent with the previous findings on firms that use contractual arrangements for their inputs. Further, the analysis reveals varying levels across different entities when examining productivity based on contractual arrangements. Firms with contractual arrangements with government entities have the highest productivity at 74,732.34 while firms with no contractual arrangements have lower productivity levels of 19,083.84. These findings highlight the importance of contractual arrangements in enhancing productivity across different types of entities, emphasizing the role of structured agreements in driving efficiency and output levels within various sectors.

of firms that export. The dataset contained firms in the manufacturing and retail services. After data cleaning and preparation, a sample of 178 firms was retained. Among these, 101 sold locally while the rest (77) had some export market link (either direct or indirect). The factors that affect trade participation are firm size, research for development expenditure, capital intensity, business age, education, training, and share of highly skilled workers. Annex Table 5.2 in the annex shows the summary statistics of these variables, while Box 5.2 presents the regression estimates. The Table shows that firms whose main market is exports tend to have a higher number of workers, higher sales, higher capital (both volume and intensity), spend more on research and development, and have a higher number of skilled workers (41 vs 10 for local market-oriented ones) and older (34 compared to 19).

5.3.3 Determining the factors that affect trade participation

The World Bank 2018 Kenya Enterprise Survey dataset was used to examine the characteristics

Box 5.2: Drivers of trade participation by firms

A regression analysis was conducted to assess the drivers of trade participation by firms in the wholesale and retail trade. The dependent variable is a dummy variable equal to one (1) when it is an exporting firm and zero (0) when it is a non-exporting firm. The independent variables included the age of the business, business category, capital intensity, access to loans, and access to training. The drivers identified to influence trade participation include the age of the business, access to training, and business category. On the age of the business, an increase in the age of the business by one year increases the probability of a business exporting by 0.01, *ceteris paribus*. Medium and large businesses have a probability of 0.34 and 0.45 higher of exporting, compared to micro-businesses, respectively. On access to training, businesses that train their employees have a probability of 0.17 higher of exporting, compared to those that do not train them.

	Marginal effects	Std. Err.	Z	P>z	[95% Conf. Interval]
Age of the business	0.01	0	5.72	0	0
Business category ¹⁴					
1-Small	0.16	0.18	0.92	0.36	-0.18
2-Medium	0.34	0.18	1.86	0.06	-0.02
3-Large	0.45	0.18	2.49	0.01	0.1
Capital intensity	0	0	1.29	0.2	0
Access to training	0.17	0.07	2.5	0.01	0.04
Access to loans	0.19	0.12	1.55	0.12	-0.05

Data source: Author's analysis based on the World Bank (2018) Survey

A further analysis was conducted to investigate the characteristics and determinants of productivity among firms engaged in exporting. Box 5.2 illustrates that firms focusing on export markets have a larger workforce, higher sales figures, increased capital investment (both in volume and intensity), greater expenditure on research and development, a higher proportion of skilled workers (41 compared to 10 in local market-oriented firms), and an older average age (34 compared to 19). Exporting firms were found to have higher average values, indicating greater efficiency, while local firms displayed a negative Total Factor Productivity (TFP), suggesting lower efficiency in resource utilization compared to the average firm.

Regression analysis was then performed on TFP¹⁵ using the identified independent variables, with the results presented in Annex Table A5.2. The table reveals that only the coefficient of the age of the business is both positive and statistically significant. This finding suggests that as the age of the business increases, there is a notable positive impact on total factor productivity. Older businesses tend to be more efficient in combining resources to generate output. However, coefficients related to business categories, the proportion of individuals with high school education and above, research and development expenditure, and access to loans have the expected positive signs but lack statistical significance. The coefficient for training, although correctly signed, is statistically insignificant, suggesting that exporting firms without training programmes experience lower TFP levels.

5.3.4 Global value chains participation

Trade encourages the development of robust local supply chains. Businesses involved in trade often work closely with local suppliers and distributors, stimulating economic activity within the country. These supply chains help

in sourcing raw materials, components, and services more efficiently, ultimately leading to higher productivity by reducing production delays and costs. Through Global Value Chain (GVC) participation, countries can access foreign technology, expertise, and investment, which can drive innovation and technological advancement. As countries specialize in areas where they excel, they are motivated to adopt more efficient production methods and technologies, leading to enhanced overall labour productivity by enabling workers to produce more with the same or fewer resources.

Table 5.6 provides a computation of the Global Value Chain (GVC) participation index for various sub-sectors in Kenya, based on a survey conducted by the World Economic Forum in 2018. The overall mean GVC¹⁶ participation index for all sub-sectors is 18.68, with a standard deviation of 21.92, reflecting the variability in GVC participation across different industries. Specific sectors stand out with notably high mean GVC participation indices, suggesting active involvement in international trade through GVCs. These sectors include paper (36.90), electronics, plastics and rubber (33.11), recycling (32.50), transport machines (29.28), and chemicals (28.44).

Sectors with lower mean GVC participation indices, including construction, hotel and restaurants, leather, wholesale, and furniture indicate a relatively lower degree of integration into global value chains. This suggests a more localized or domestic focus for these industries, with limited exposure to international markets and fewer connections with global production networks. While these sectors may still contribute significantly to the domestic economy, their lower GVC participation underscores potential challenges in accessing global opportunities and leveraging external resources for growth and innovation.¹⁷ The industry sector had the highest GVC participation scores (mean =

¹⁴ Note: Business category = 0 if micro (0-9 employees), 1 if small (10 to 49 employees), if medium (50-99), and 3 if large (over 100). Loan = 1 if no loan was accessed, 2 if a loan was accessed.

¹⁵ TFP is a residual computed from the total sales, capital, and labour using the MSME Survey, 2016

¹⁶ The GVC participation index measures the extent to which a sector is integrated into global trade through both forward and backward linkages in the value chain.

¹⁷ Wanjala, K. and Abdulahi O. (2022), Firm level analysis of global value chain participation in Kenya. KIPPRA Discussion Paper No. 285. <https://repository.kippira.or.ke/bitstream/handle/123456789/4319/DP285.pdf?sequence=1&isAllowed=y>

26.22) while services had the lowest (13). The mean GVC in the agriculture sector was 22.81. The higher GVC in the industry sector indicates higher knowledge transfer and innovation, higher export opportunities, and access to a

variety of inputs and technologies. However, the low GVC scores in the services sector indicate that the country's service sector is less integrated into global production networks.

Table 5.6: GVC participation index by sub-sector

Sector	Subsector	Mean	Standard deviation (SD)
Agriculture	Food	27.3	22.91
	Wood	18.33	18.87
	Average	22.81	20.89
Industry	Paper	36.9	23.03
	Electronics (31-32)	33.11	31.44
	Plastics and rubber	32.61	22.49
	Recycling	32.5	28.39
	Transport machines (34-35)	29.28	21.1
	Chemicals	28.44	22.86
	Machinery and equipment (29-30)	26.66	26.2
	Fabricated metal products	26.33	25.8
	Information Technology	26.32	27.41
	Basic metals	23.75	22.87
	Textiles	23.55	21.46
	Garments	19.85	27.96
	Non-metallic minerals	17.27	20.99
	Leather	10.31	22.22
	Average	26.21	24.59
Services	Retail	17.78	19.71
	Publishing, printing, and recorded media	17.5	29.03
	Services of motor vehicles	16.09	19.46
	Transport section I: (60-64)	13.55	22.76
	Furniture	13.42	18.08
	Wholesale	13.28	20.6
	Construction section	6.85	12.62
	Hotel and restaurants	6.28	12.57
All sector	Average	13.09	19.35

Wanjala and Abdullahi (2022) explored the determinants of Global Value Chain (GVC) participation in Kenya using a Tobit model (Annex Table 5.5). The findings show that firm productivity significantly influences the engagement of firms in GVCs. This impact is particularly evident across various models, including the overall GVC index, the

backward linkage channel (indicating a higher dependence on foreign inputs), and the forward linkage (highlighting the reliance on local firms' products as inputs). The results suggest a strong correlation between firm productivity and GVC participation, indicating that higher GVC participation leads to increased firm productivity. To enhance GVC participation in

the local economy, it is essential to focus on improving overall productivity, fostering strong backward linkages through supplier network development and trade facilitation measures, and promoting forward linkages through standards, certifications, and export promotion initiatives.

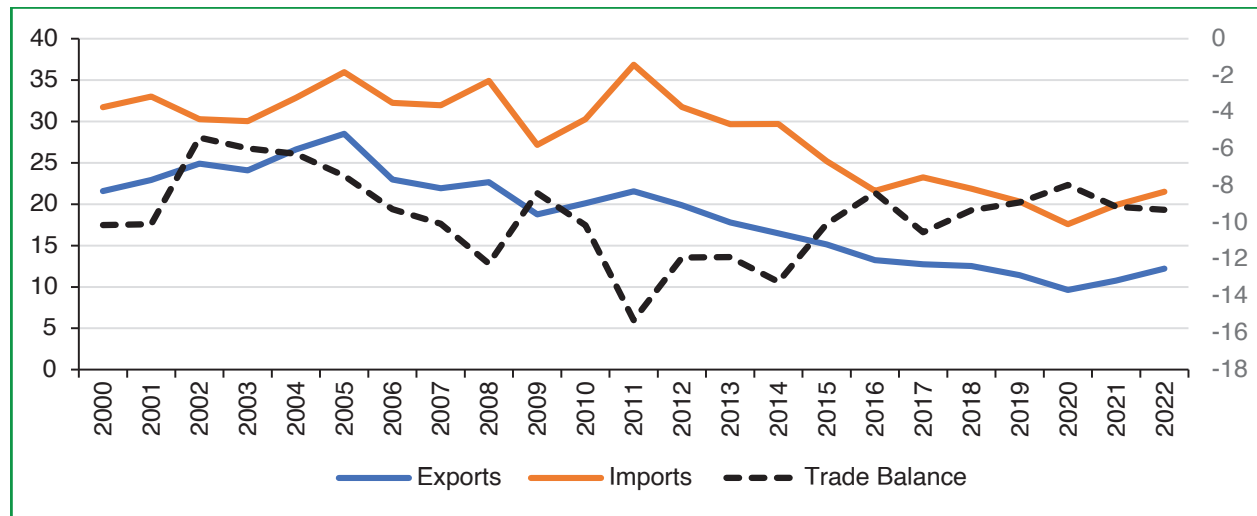
5.4 Role of International Trade in Boosting Productivity

5.4.1 Trends in Kenya exports and imports

Kenya exports and imports as a share of GDP have been on a general decline over the years

(Figure 5.7). The decline in the shares of the two series is in sync with the global decline in trade since 2010, mainly because of the global financial crisis of 2008-09, structural changes where many economies have become more service-oriented, global demographic changes, rise in protectionist trade policies especially between China and the USA, and commodity price fluctuations. However, the trade balance has been improving since 2011, which suggests a faster decline in imports compared to exports. This suggests that despite their decline, exports are becoming more productive and competitive.

Figure 5.7: Share of exports and imports to GDP, 2000-2022



Data source: ITC trade map, 2023

The East African Community (EAC) still controls the largest share of the country’s total exports, followed by the European Union (Table 5.7). The EAC Common Market Protocol has been instrumental in this progress, fostering a more integrated regional market through the harmonization of laws, reduction of non-tariff barriers (NTBs), and facilitation of the free movement of labour and capital. In 2022, EAC controlled over 28 per cent of the export market

share, followed by the EU at about 20.4 per cent, representing an increase of 45 per cent and 16 per cent, respectively. On average, Africa contributed to about 45 per cent of the market share, showing the importance of the market with the AfCFTA coming into play. Asia is also an important market for Kenyan exports, with export share to Asia increasing from 20 per cent to 25 per cent between 2010 and 2022, representing a growth of 4.29 per cent.

Table 5.7: Average growth rate and percentage share of Kenya exports, 2010-2022

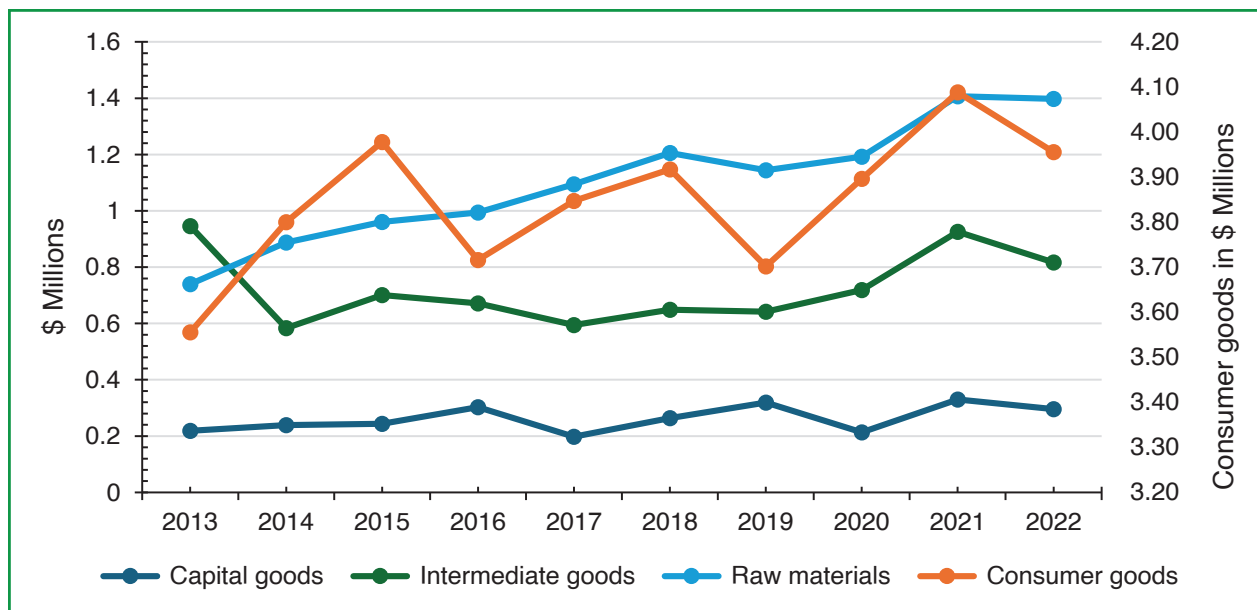
Market	Percentage share of Kenya exports				Average growth		
	2010	2014	2018	2022	2010-2014	2014-2018	2018-2022
EAC	27.87	31.02	23.52	28.00	31.56	-24.93	45.46
COMESA	16.59	6.19	6.80	6.64	- 55.89	8.79	19.17
RoA	17.90	23.60	14.62	19.21	55.80	-38.67	60.56
EU	23.92	22.35	21.44	20.46	10.45	-5.02	16.57
US	5.51	7.13	7.72	9.19	52.80	7.32	45.39
Asia	20.85	19.50	30.45	25.99	10.51	54.68	4.29

Source: Author's calculations using ITC Trade map data, 2023

Kenya exports by stages of production revealed distinct trends across various product groups. The export of capital goods displayed fluctuations over the years, starting at US\$ 0.218 billion (9.68% of the total) in 2013 and peaking at US\$ 0.30 billion (4.58% of the total) in 2022. Further, consumer goods demonstrated a consistent upward trajectory, increasing from US\$ 0.35 billion (15.72% of the total) in 2013 to US\$ 0.39 billion (61.17% of the total) in 2022.

Export of intermediate goods such as metal products, machinery, chemicals and plastics, textiles and yarns, and food and beverage ingredients exhibited some variability, starting at US\$ 0.95 billion in 2013 to a low of US\$ 0.59 billion in 2017 and to a high of US\$ 0.81 billion in 2022. Raw materials such as agricultural products (tea leaves, coffee beans, and horticultural products) and minerals (titanium ores and fluorspar soda ash), in contrast, had a generally increasing trend, with exports rising from US\$ 0.74 billion in 2013 to US\$ 1.39 billion in 2022.

Figure 5.8: Kenya exports by stages of production, 2013-2022

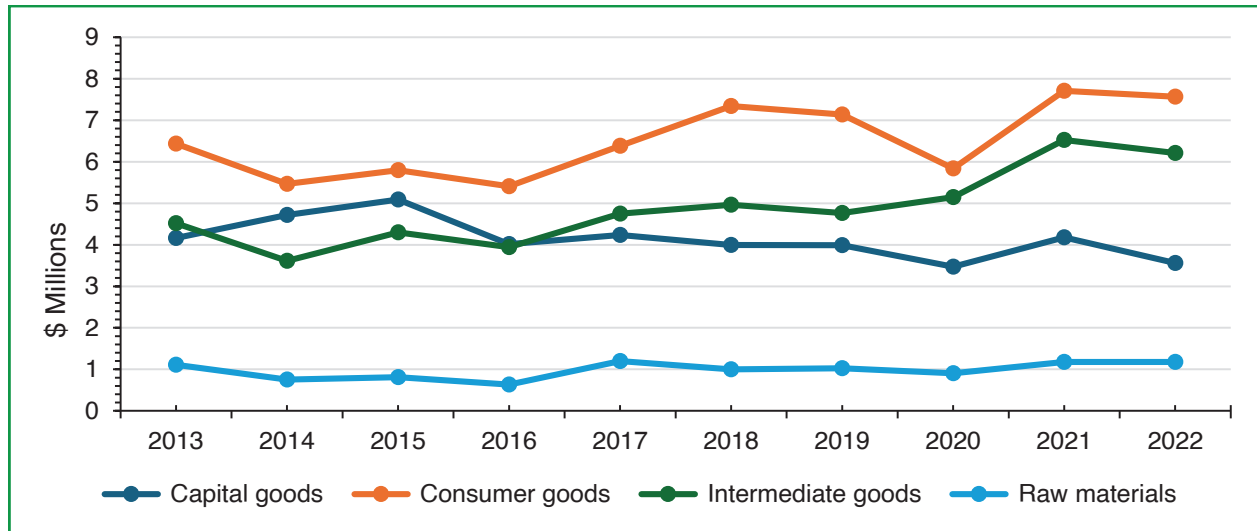


Data source: WITS (2023)

The rise in exports across all sectors implies rising overall productivity in the country. The increasing export trends of raw materials and consumer goods signify a rise in productivity and improved product quality in the primary and manufacturing sectors. However, the heavy reliance on exports of consumer goods compared to capital goods suggests lower technological advancements in the country's manufacturing goods sector. This is because these goods involve simpler production processes compared to capital goods. The uptick in the export of intermediate goods

since 2014 reflects deeper integration into global value chains, showing productivity improvements. The rising efficiency and quality improvements within the GVC imply a rise in overall productivity in the country. The stagnation in exports of capital goods indicates limited export competitiveness and productivity growth in the manufacturing sector. It is, therefore, necessary to enhance technology and productivity in the manufacturing of capital goods to enhance export performance and competitiveness.

Figure 5.9: Kenya imports by stages of production, 2013-2022



Data source: WITS (2023)

The import trends by stages of production exhibit a similar trajectory to that of exports, except for raw material imports being the lowest, averaging about US\$ 1.0 million from 2013 to 2022. The low importation of raw materials suggests that the country has ample supply of these resources, and therefore higher productivity in the primary sector. However, it also suggests low diversification and slow productivity growth in the manufacturing sector. From 2017 to 2019, import patterns remained relatively stable, showing minimal fluctuations. However, a notable increase in the imports of capital, consumer, and intermediate goods from 2020 shows growing technological and

production capabilities and a greater integration in the GVCs. This indicates a rising of the manufacturing sectors and the overall country's productivity. The increase in imports of capital and intermediate goods in the review period presents promising implications for enhancing overall productivity and fostering economic growth through improved technological inputs and production capabilities. The increasing trend in imports of consumer goods over the review period suggests a growing domestic demand, potentially indicating a shift towards reliance on imported goods and a decline in domestic production capacity. This shift could have adverse effects on the country's trade

balance and domestic productivity, as a higher dependency on imported consumer goods may lead to reduced local manufacturing activity and competitiveness. The high importation of consumer goods is in line with their high exportation, again indicating low productivity in the manufacturing sector.

Therefore, while increase in imports of capital and intermediate goods signify opportunities for overall productivity growth, careful monitoring and strategic planning are essential to mitigate any negative impacts on the productivity of the manufacturing sector stemming from the rising importation of consumer goods.

5.4.2 Export competitiveness

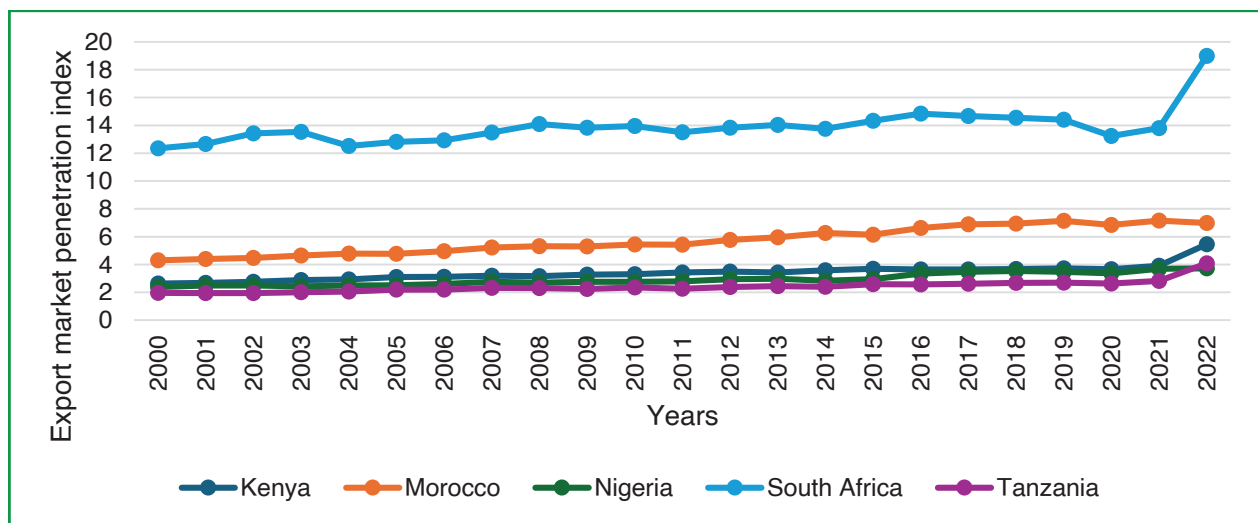
Kenya export market penetration trends

The country's export market penetration ¹⁸ has improved over the years, although it still lags some other African countries. The index increased by 52 per cent from 2.6 in 2000 to around 5.46 in 2022, reflecting the country's

progress in accessing foreign markets with its exports. This enhanced market penetration could have a positive impact on productivity by stimulating economic activity, fostering innovation, and generating employment opportunities. However, when compared to South Africa and Morocco, which have higher export market penetration indices of 18.99 and 6.98, respectively, Kenya's average of 3.4 indicates room for further growth in export competitiveness. This analysis highlights both the progress Kenya has made and areas where further strategic measures could be implemented to enhance its global export presence in the ever-evolving international trade landscape. Except for Morocco and South Africa, other countries such as Kenya, Nigeria, and Tanzania exhibit stagnating growth in the index, signalling a slower pace of productivity growth. To elevate productivity levels and bolster export competitiveness, these nations need to enhance their productive capacities as a priority, through investments in infrastructure, technology, skills development, and trade facilitation.

¹⁸ The Index of Export Market Penetration is a measure of the extent to which a country's exports penetrate foreign markets. It is calculated by dividing a country's share of world exports by its share of world GDP. A higher index indicates that a country's exports are more successful in penetrating foreign markets.

Figure 5.10: Index of export market penetration index for Kenyan exports, 2000-2021



Data source: WITS (2023)

The low export diversification index indicates that the country has limited access to foreign markets compared to countries such as Morocco and South Africa. While the high importation of capital and intermediate goods is anticipated to stimulate the manufacturing sector by fostering the development of GVCs, enhancing diversification, improving product quality, and ultimately increasing foreign market penetration, over-reliance on importing and exporting consumer goods can have adverse effects on the country's export base in terms of diversification and competitiveness. This reliance is likely to constrain the country's ability to expand into foreign markets effectively.

Market concentration trends

The export market structure exhibits a high level of diversification, as illustrated in Figure 5.11(a and b). HH¹⁹ indices for both export and import market concentration, scoring close to zero (0), indicate a diversified trade scenario. The export market concentration index for Kenya has undergone a notable transformation, decreasing from 0.08 in 2000 to 0.045 in 2023, representing a 43 per cent reduction in the HH index. This trend reflects Kenya's successful efforts in diversifying its export market over the years. This improvement is in line with the rising importation of capital and intermediate goods, which has enabled the country to raise its export diversity and increase penetration in the export markets. Therefore, Kenya's importation of capital and intermediate goods has had a positive impact on both the productivity of the manufacturing sector, and of the entire economy. The government's implementation of various initiatives, such as bilateral and regional trade agreements, has been instrumental in driving this positive transformation.

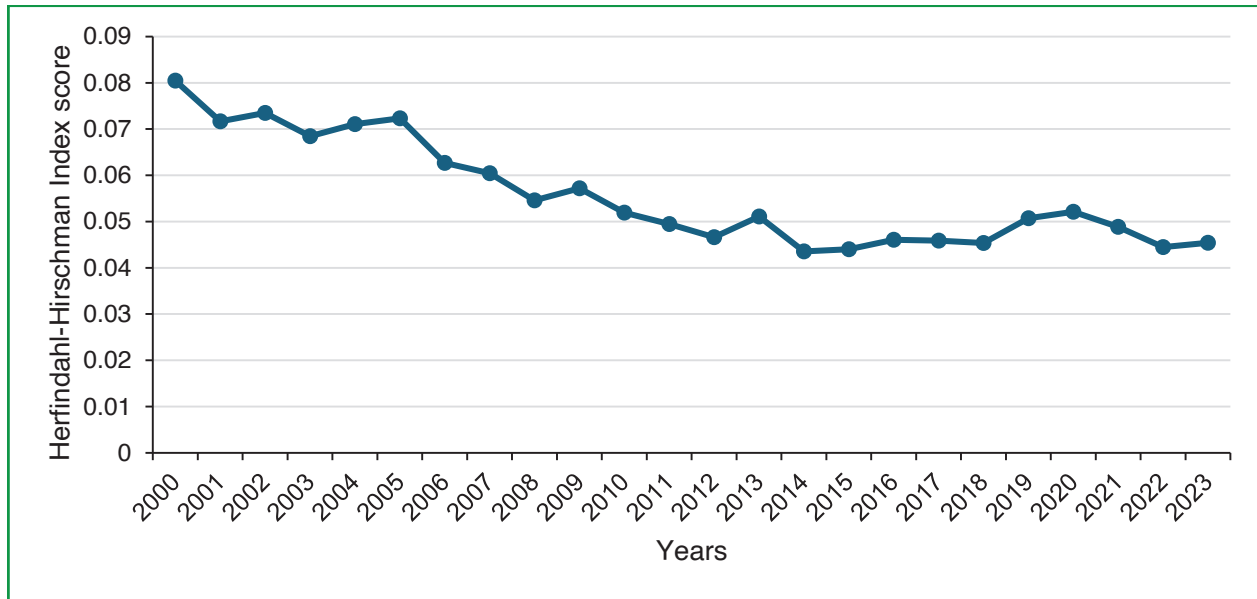
¹⁹ HH indices of export and import market concentration scores close to zero indicate that trade is diversified, that is, equally distributed, across markets and scores close to zero indicate concentration on a few markets.

In terms of the ranking of market diversification of various export commodities in 2022, the spread index²⁰ for markets was used to assess the distribution of Kenyan exports among partner States. Figure 5.11b illustrates the market diversification rank for various commodities out of 180 countries. Fresh food, leather products, information technology, and consumer electronics were the highest performing sectors in market diversification, ranking 28, 30, and 34, respectively. Conversely, clothing, and basic manufactures ranked the lowest in market diversification ranks. Furthermore, products under the Bottom-up Economics Transformation Agenda (BETA) have a low diversification index, as illustrated in Figure 5.11b. The data indicates that diversification is more robust in the primary sector (agriculture) and the services sector (ICT) compared to the manufacturing sector, except for consumer electronics manufacturing. This observation serves as additional evidence of a productivity gap within the manufacturing sector, highlighting areas for potential improvement and development.

Diversification in the export market is crucial for economic growth and global competitiveness. It reflects the country's ability to expand its export base and reduce reliance on a limited range of products and markets. The reduction in the export market concentration index indicates a positive shift towards a more diversified and competitive export landscape, which is essential for sustained economic growth and resilience in the face of global market dynamics. The declining market concentration index for exports, coupled with diversification across a wide range of products and increased market penetration, implies an improvement in productivity as the country leverages its strengths in various sectors to drive efficiency, innovation, and overall economic performance.

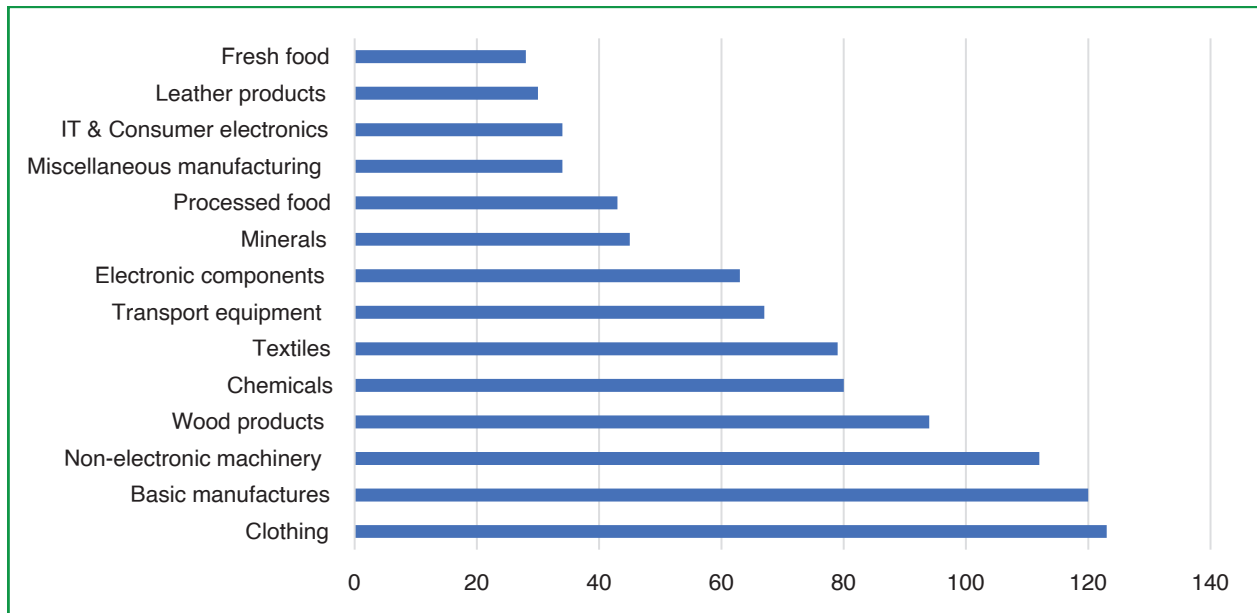
²⁰ The spread index for markets compares for each country, the share of its exports directed to different partner countries with the average export value.

Figure 5.11a : Market concentration index for Kenyan exports, 2000-2023



Data source: Author's calculations using ITC Trade map data 2023

Figure 5.11b: Market diversification for Kenyan exports in 2022 (No. of equivalent markets), 2023



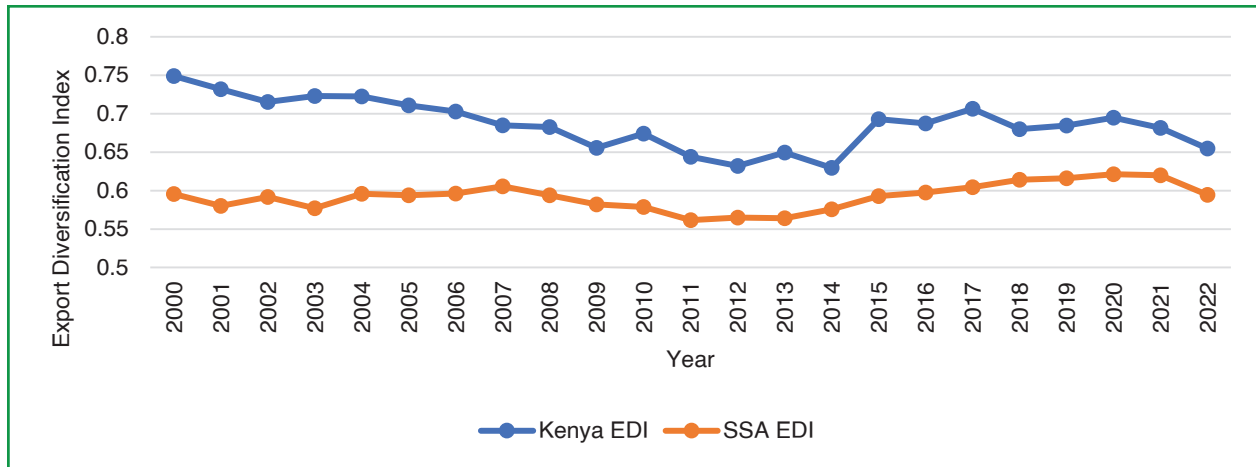
Data source: Author's calculations using ITC Trade map data 2023

Product diversification trends

Overall, Kenya’s diversification index has improved over time. Between 2000 and 2009, the diversification index improved from 0.75 to 0.66. The index then worsened to 0.67 in 2010 but improved to 0.63 by 2014. Notably, the index is higher (worse) than the Sub-Saharan Africa

average, but it is improving at a faster rate than the region’s average, especially after 2017, when the index was better than the region’s. This indicates higher rates of productivity and competitiveness growth compared to the bloc. Figure 5.12 shows the trends in diversification index in Kenya and Sub-Saharan Africa (SSA).

Figure 5.12: Kenya’s export diversification index (EDI), 2000-2022



Data source: UNCTAD (2023)

The main factors that contributed to the improvement of the index in the 2000s are government initiatives to promote economic diversification, for example, by encouraging the production and export of processed foods, textiles, and horticulture and increased access to regional and international markets due to increased globalization – for example, after the ratification of the AGOA – (Kiriti-Nganga, 2020). The worsening of the index between 2008 and 2011 (specifically in 2010) is because of the global financial crisis, which negatively affected global demand for products due to depressed investments, adverse weather conditions, and price fluctuations (especially oil). As the global demand recovered, so did the index. The unfavourable global market dynamics during the period 2014 to 2017 (for example, fluctuations in commodity prices) affected the

country’s diversification efforts. The same is reflected in the SSA average index, which also worsened in this period. Other factors that facilitated the improvement in this period were the strengthening of the trading partnerships by the government (for example, COMESA and EAC).

Finally, the higher ranking of Kenya’s EDI compared to the SSA average indicates that the country still needs to do more to increase diversification. Overall, improved diversification indices indicate higher productivity, which is essential for long-term economic growth and development. The improvement of the index from 0.75 to 0.65 between 2000 and 2022 indicates higher efficiency (better technology and skills), risk diversification, and rising specialization opportunities.

5.5 Key Messages and Policy Recommendations

5.5.1 Key messages

1. The wholesale and retail trade sector is dominated by MSMEs, most of them operating informally. This tends to limit their access to government support and procurement services such as AGPO, which provides a ready market. Only 0.34 per cent sell their products to the government, while a significant 87 per cent sell directly to individual consumers. MSMEs engaging with government procurement demonstrate higher productivity levels than those selling to individual consumers. This reflects the requirements they need to fulfill in making delivery under AGPO. However, challenges such as pending bills, bureaucratic processes, and limited access to financing still limit these engagements.
2. The contracting arrangements of MSMEs for procuring goods or securing orders vary significantly, with a notable reliance on informal or non-structured arrangements, particularly among small enterprises. While a substantial percentage of MSMEs engage in non-contractual agreements for inputs or orders, there is a significant presence of formal contractual arrangements within the MSME sector, especially among micro and small enterprises. Firms with contract arrangements for both inputs and final goods and services have higher labour productivity compared to firms with no formal contracts. This is because such arrangements lead to better cost management and predictability, optimization of the supply chain, freeing up resources to focus on other firm's activities, and enhancing quality and consistency.
3. Kenya's market infrastructure is weak. Warehousing and cold storage facilities are limited, and transport infrastructure is poor, particularly in rural areas that heavily depend on agricultural activities.
4. Supermarkets play a crucial role in the wholesale and retail sector, but recent closures of supermarkets and branches among major chains have impacted the sector's contribution to productivity. Government reforms, including the introduction of the Retail Trade Code of Practice (RTCP) and a prompt government procurements payment policy, aim to regulate the relationships between retailers and suppliers, prevent buyer power abuse, and promote fair trade practices. These reforms have been key in addressing emerging issues such as delayed payments and financial stability, contributing to a more transparent and sustainable retail market environment. In addition, controlling rising counterfeit goods that pose a challenge to the productivity growth of the MSMEs calls for the enforcement of regulatory measures both at national and county levels.
5. Implementation of trade facilitation measures such as the Single Customs Territory (SCT) leads to a significant reduction in the time and cost involved in import and export processes. This reduction directly correlates with increased trade activities, as streamlined customs procedures and efficient logistics enable businesses to conduct transactions more swiftly and cost-effectively. Reduced transit times translate to quicker delivery of goods, improved supply chain management, lower transportation costs, and ultimately, increased productivity for businesses. This efficiency allows companies to operate more smoothly, meet customer

demands promptly, reduce inventory holding costs, and potentially explore new market opportunities due to enhanced trade facilitation. Moreover, ongoing trade agreements such as AGOA and the AfCFTA have enhanced Kenya's export trade, offering avenues for economic growth through increased exports and imports with the potential benefits of driving trade when both tariff and NTMs are eliminated, rather than focusing solely on tariff liberalization.

6. The export structure is characterized by a positive trend in export market diversification and market penetration, with significant reductions in the export market concentration index over the years. This indicates the country's successful efforts in expanding its export base and reducing reliance on a limited range of products and markets. Despite challenges such as global economic downturns and fluctuations in commodity prices, the country has made strides in diversifying its export markets through government initiatives and strengthened trading partnerships. However, there is still room for improvement, as evidenced by the country's lower diversification compared to some other African nations.

5.5.2 Policy recommendations

1. Enhance and modernize market infrastructure to foster a dynamic and supportive business environment. This includes addressing market issues, prioritizing the completion of tier one (1) markets through sufficient budgetary allocation, establishing adequate warehouses for aggregation and storage, constructing sufficient cold storage facilities, and addressing the logistical constraints by improving rural roads transport infrastructure to enhance market accessibility for small farmers. In addition, it is essential to strengthen market linkages for MSMEs by addressing regulatory barriers, enhancing market information systems, promoting e-commerce and digital trade, and improving market access.
2. Encourage MSMEs to formalize their contracting arrangements for procuring goods or securing orders by providing capacity building, legal assistance, standardized contract templates, and fostering industry collaboration. The shift towards structured contracts establishes expectations and leads to smoother transactions, ultimately boosting labour productivity and operational efficiency within the MSME sector. Furthermore, it is essential to devise strategies to promote the formalization of MSEs by streamlining the registration process, conducting awareness campaigns on the significance of formalization, and offering incentives to encourage formalization.
3. Empower MSMEs in the wholesale and retail trade to expand into export trade to boost their productivity. To enhance the quality, sustainability, and competitiveness of MSME products, it is essential to provide training in entrepreneurship culture and value addition, support the certification of MSME products, assist in registering Industrial Property Rights (IPRs) for MSMEs, and facilitate their access to local, regional, and international markets through market development initiatives such as funding their participation in regional and continental trade fairs. Furthermore, it is crucial to foster technological adoption among MSMEs by providing support for the development of e-commerce platforms, digital payment systems, and other technological solutions.
4. Fast-track the implementation of Kenya's National AfCFTA Implementation Strategy (2022-2027) to boost intra-continental trade and leverage on targeted product and service exports through the AfCFTA Guided Trade Initiative (GTI). The government

could allocate sufficient resources towards implementing the strategy through the National Implementation Committee (AfCFTA-NIC) and raise awareness within the business community about the potential benefits of the AfCFTA.

5. Enhance the ongoing trade facilitation measures, such as the implementation of the Single Customs Territory to further reduce the cost of doing trade in the region. To enhance current trade facilitation measures, the Northern Corridor States could streamline customs procedures for imports, exports, and transit of goods. This involves reducing documentation requirements, expediting cargo release times, and implementing mutual recognition

of authorized operator schemes to promote smoother trade transactions within the region.

6. Diversify the exports and markets by shifting towards high technology sectors to mitigate the risks associated with global price shocks, particularly in low value-added agricultural commodities. This can be achieved by identifying emerging markets with growth potential and establishing trade relationships through negotiation to enhance market access. The challenges that hinder diversification could be identified and addressed, such as infrastructure limitations and regulatory barriers, to create a conducive environment for diversifying exports.

ENHANCING AGRICULTURE SECTOR PRODUCTIVITY THROUGH A TRANSFORMATIVE AGENDA

In the last two decades, the agriculture sector growth and its contribution to GDP averaged 2.3 per cent and 22.4 per cent, respectively. The production of food and cash crops and their yields have declined due to low investment and the growing effects of climate change. Labour productivity, crop yields, and efficiency of input use have been declining over time. Furthermore, government spending on agriculture has been below the Malabo commitment of 10 per cent. To transform the agriculture sector and ensure increased productivity, timely procurement and distribution of seeds and fertilizer and monitoring access and use by farmers is key. Furthermore, allocating adequate spending on agriculture from the national budget and encouraging counties to allocate resources for the sector will be key in ensuring the achievement of the Malabo commitment for the agriculture sector. Implementation of agro-processing and value chain projects envisioned in MTP IV, such as storage and cooling plants, will be crucial in providing the required infrastructure to reduce wastage and increase productivity. Enhanced uptake of livestock and crop insurance schemes are key in protecting farmers from the vagaries of weather. Further, investment in human capital by ensuring Agriculture subject is compulsory in secondary schools will be key in ensuring skills development from an early age. Moreover, there is a need to facilitate training and monitor the supply of various professionals in the agriculture sector, such as extension officers, plant and crop breeders, and other scientists to ensure adequate well-trained labour for the sector. This will ensure farmers access extension services and adopt modern technology and innovations to increase productivity.

6.1 Introduction

The agriculture sector plays a very crucial role in the Kenyan economy. The sector provides employment to over 40 per cent of the total population and more than 70 per cent of the rural population (Central Bank of Kenya - CBK, 2023). In the last two decades, the sector growth and its contribution to GDP averaged 2.3 per cent and 22.4 per cent, respectively. The sector is not only a key driver of the economy, but also serves as a means of livelihood for millions of Kenyans by providing income to more than 80 per cent of the population. Beyond its direct contribution, the

sector drives the manufacturing industry, with approximately 40 per cent of the manufacturing coming from agro-processing activities that are linked to agriculture. The productivity of the sector is, therefore, crucial in ensuring job creation and food security.

However, the share of the sector to GDP has been declining over time from 26.6 per cent in 2000 to 17.0 per cent in 2022 (Figure 6.1). The GDP growth rate tends to follow the agriculture sector growth with periods of high GDP growth accompanied by high sector growth except for the period 2002, 2008/09, 2016/17, 2020, and 2021/22. The period 2003 to 2007 coincided

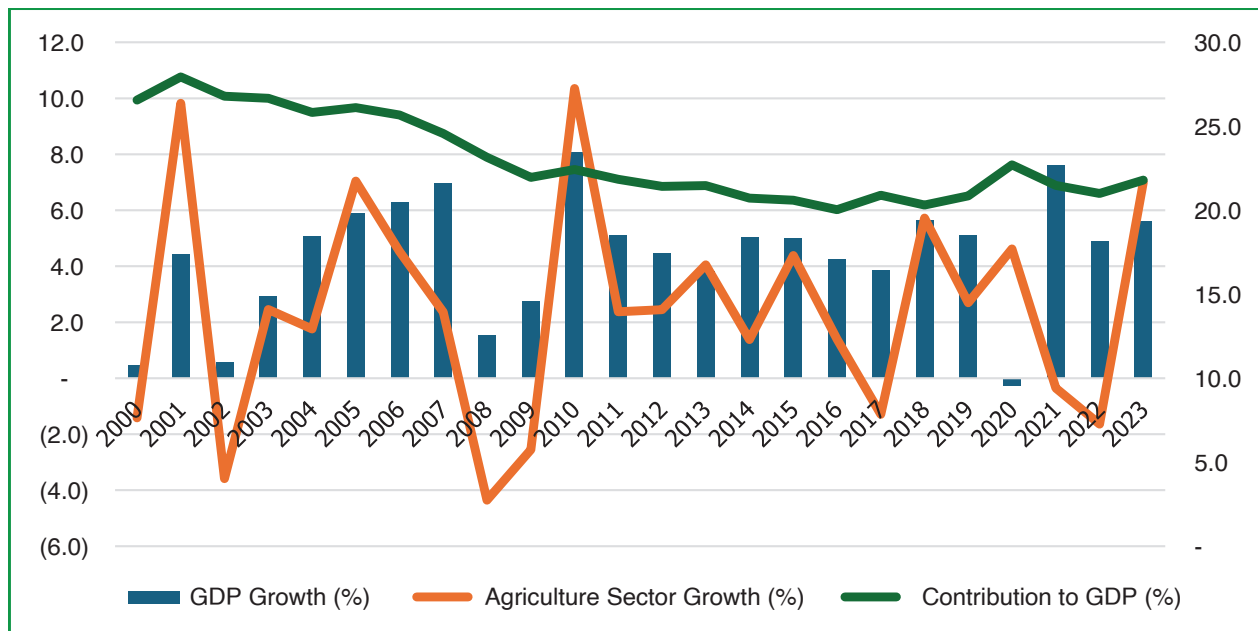
with the implementation of the Economic Recovery Strategy for Wealth and Employment Creation when GDP growth improved from 0.6 per cent in 2002 to 7.0 per cent in 2007. However, the agricultural sector growth did not follow the same trajectory due to the drought conditions in 2003/2004 and 2007/2008.

Furthermore, the Kenya Vision 2030 identifies agriculture as one of the key sectors to drive the economy to the projected 10 per cent annual economic growth and the key driver towards the country’s attainment of 100 per cent food and nutrition security for the population. However, the review of the sector performance shows that the sector growth dipped in the 2013/14, 2017/18, and 2021/22 periods when the country experienced episodes of severe droughts.

Since the enactment of the Constitution in 2010 and the onset of devolution, the agriculture

sector has undergone several key reforms aimed at improving efficiency and productivity. The reforms include a review of legal frameworks to better regulate agricultural practices, ensure food safety, promote sustainable use of resources, and policy shift from policies that incentivize overproduction towards those that encourage sustainable and environmentally friendly farming practices, such as integration of technology in agriculture, including precision farming, climate-smart agriculture, and biotechnology, all geared towards increasing productivity in the sector. There has also been a focus on reforming agricultural research and extension services, such as the development of the Kenya Agricultural Sector Extension Policy (KASEP) to provide farmers with the latest knowledge, techniques, and other agronomic information.

Figure 6.1: Agricultural growth, contribution to GDP, and GDP growth (2000-2023)



Data source: KNBS (Various), Economic Survey

Since the year 2000, the government, through successive policies and strategies, has focused on transforming and modernizing the agriculture sector. However, the sector’s performance in

the past 20 years has been below potential, characterized by declining yields for major crops; limited access to inputs; limited market access and low value addition for most agricultural

exports. These together with inadequate rural infrastructure, climate change effects, and with limited adaptation and mitigation measures have affected the productivity of the sector. Nevertheless, the measures outlined in the MTP IV, capturing the aspiration of the BETA plan for the agriculture sector, should be able to deal with the challenges that have persisted over the years, if fully implemented.

The government, through the implementation of the MTP IV, aims to transform the agriculture sector by increasing productivity and developing key value chains that have high returns. These value chains, which are key elements of the BETA plan, include livestock (leather and leather products), dairy, tea, rice, edible oils, and textile and apparel. Important to note is that all earlier strategies had focused on addressing similar challenges facing the agricultural sector, such as conflicting legal, legislative, and institutional frameworks; limited access to farm inputs and financial services; inadequate research and extension; and limited access to markets for agricultural produce.

6.2 Drivers of Agricultural Productivity

Agricultural productivity is dependent on various factors that include supportive mechanisms and government policy. It also depends on access to market opportunities and extension services and access to intermediate inputs. In addition, logistics and infrastructure support, such as storage facilities and road networks that support market access and reduce wastage, and human capital development such as education of farmers, which is essential to equip farmers with the knowledge and skills required to adopt modern technologies and agricultural practices. Government spending

on the agriculture sector is crucial in ensuring increased allocation of funding to the sector to implement various programmes and projects aimed at increasing productivity. This section examines the drivers of agricultural productivity within the Kenyan context and evaluates policy currently supporting each of the drivers, and the gaps that exist.

a) Policy, legal, and institutional frameworks

Agricultural productivity is significantly impacted by support mechanisms and government policies. The agriculture sector's productivity and growth in Kenya has been driven by successive government policies. The Economic Recovery Strategy (ERS) for Wealth and Employment Creation (2003-2007) targeted to revive the agriculture sector and increase productivity in terms of export earnings, employment creation, food security, and household farm incomes. The Strategy for the Revitalization of Agriculture (2004-2009) was prepared to implement issues identified by ERS in the sector. Subsequently, more detailed strategies and plans were developed to address challenges in the sector, including the five-year Medium Term Plan (MTP) of Vision 2030 and the Agricultural Sector Development Strategy (2010 to 2020). The most recent policy framework is the Agriculture Sector Transformation and Growth Strategy (2019-2029), which aims to implement the measures outlined for the agriculture sector in the Kenya Vision 2030. Table 6.1 presents an analysis of the key national and sector policies focused on agriculture, identifying areas that link each of the drivers to productivity and any existing gaps.

Table 6.1: National and sectoral policies linked to agricultural productivity

Areas of focus linked to productivity	Issues addressed by policy framework	Gaps in the policy framework and means of addressing them
Inputs supply (fertilizer, seeds and pesticides)	<p><i>i. Strategy for the Revitalization of Agriculture (SRA) and Agricultural Sector Development Strategy (ASDS) – 2010 to 2020</i></p> <p>Price and market liberalization for inputs to improve access to quality inputs and financial services</p>	<ul style="list-style-type: none"> Inadequate awareness of the existence of the plan by industry players and the farmers about the existence of government support mechanisms to access inputs is one of the impediments to implementing the SRA and ASDS Farmer sensitization and sharing of information ensures farmers are aware of the plan and can access government support as and when required
	<p><i>ii. Medium-Term Plan (MTP I, II and III)</i></p> <p>Provision of fertilizer subsidies and input supply to farmers</p>	<ul style="list-style-type: none"> Proper interpretation and conversion of stated objectives in the policy into actions is crucial for the success of policy and plan implementation Implementation of policy objectives through well prepared plans will ensure the translation of objectives to results by working with farmers in the implementation
	<p><i>iii. Agriculture Sector Transformation and Growth Strategy 2019-2029</i></p> <ul style="list-style-type: none"> Provision of subsidies to 1.4 million high-need farming households (e-voucher) Provide farmers with better access to affordable inputs such as fertilizer 	<ul style="list-style-type: none"> The criteria for identification of needy farming households are not clear and need to be specified to ensure those in need are selected Access should be linked to the knowledge on the use of inputs such as fertilizer application to enable farmers to get better returns Timely procurement of the seeds and fertilizer and monitoring their distribution and access by the farmers has been an issue. This needs to be addressed to ensure farmers get timely access and use the fertilizers and other inputs to assure them of high yields
	<p><i>iv. Medium-Term Plan IV/Bottom-Up Economic Transformation Agenda plan</i></p> <ul style="list-style-type: none"> Establishment of feedlots and feed production zones Provision of subsidies and farm input to farmers 	<ul style="list-style-type: none"> While the plan focuses on the establishment of feed production zones and water management, areas focused for implementation of these initiatives are the ASALs, which traditionally are water-stressed. This may impede the success of the initiatives. Provision of water, not necessarily, rainwater such as the use of water harvesting technologies will ensure water availability for growing animal feeds in the water-stressed areas. High cost of farm inputs has in the past hindered farmers in achieving their production targets since subsidized fertilizer from the government is rationed to a specific amount per farmer

Areas of focus linked to productivity	Issues addressed by policy framework	Gaps in the policy framework and means of addressing them
Human capital development (skills development, link between training and industry requirements)	<p><i>i. Medium-Term Plan (MTP I, II and III)</i></p> <ul style="list-style-type: none"> Enhanced labour productivity through access to information and training Increased employability of the youths 	<ul style="list-style-type: none"> Review of MTP II and III shows that achieved labour productivity for the country and the sector is below the targeted. Weak linkage between industry and training institutions leads to a skills mismatch in the labour market. This needs to be addressed The government changed the curriculum in early 2000 for the agricultural course to be an elective subject in secondary school. This shift has impacted the number of students taking agriculture as a course in secondary school. Lack of skills specifically related to various aspects of agriculture is one of the impediments to youth engagement in the agriculture sector. Revert to have agriculture as a compulsory subject will ensure early career interaction with agriculture and increase the number of trainees taking agricultural courses thereby increasing the professionals in various courses that support agriculture.
	<p><i>ii. Agriculture Sector Transformation and Growth Strategy</i></p> <ul style="list-style-type: none"> Knowledge and skills building programmes focused on technical and management skills Support SMEs and farmer associations with business expansion, management training 	<ul style="list-style-type: none"> The challenge lies in attracting the youth in agriculture being the majority without employment Training alone is not enough; reforming farmer associations is necessary to reduce operational costs and ensure the sustainability of the training programmes after the government exits
	<p><i>iii. Medium Term Plan IV/Bottom-Up Economic Transformation Agenda plan</i></p> <ul style="list-style-type: none"> Automation skills development (digital labs) Strengthening linkage between industry and training institutions Internship and industrial attachment opportunities to acclimatize the trainees on the skills required for the industry 	<ul style="list-style-type: none"> In the past, there has been a presidential digital programme, which has transformed those who have gone through the programme. However, equity in access to these opportunities has been an issue, especially for those in rural areas The mechanisms for linkages and the sustainability of the engagement ensure to avoid stop-and-go initiatives that have occurred in the past due to funding While internship and industrial attachments are crucial in practical skills development, the available institutions to provide these opportunities are limited, since there is an element of cost, especially for internship. Providing incentives for institutions offering internships and attachments in terms of tax relief will encourage them to increase the opportunities, especially for new labour

Areas of focus linked to productivity	Issues addressed by policy framework	Gaps in the policy framework and means of addressing them
Extension services	<p><i>i. Strategy for the Revitalization of Agriculture (SRA) and Agricultural Sector Development Strategy (ASDS)</i></p> <p>Promote access to extension services, inputs, and agricultural credit</p>	<ul style="list-style-type: none"> • Access to extension services by farmers hindered the achievement of the initiative stated in SRA and ASDS strategies due to inadequate professionals to provide the services. To date, and with the decline in funding for the sector and reducing extension service professionals, the challenge persists for meaningful extension services to reach the farmer. This gap needs to be filled to ensure farmers access quality extension services
	<p><i>ii. Agriculture Sector Transformation and Growth Strategy</i></p> <p>Integrate mandatory extension services by involving the private sector in the provision of the services</p>	<ul style="list-style-type: none"> • Extension services are like public goods that are provided by the government. Affordability is an issue when the services are provided by the private sector. • Government lead provision of extension services will ensure farmers receive support in growing their crops and increase the level of agronomical knowledge for farmers.
	<p><i>iii. Medium-Term Plan IV/Bottom-Up Economic Transformation Agenda plan</i></p> <p>Train 3,000 extension agents, mainly the youth to offer digital extension services</p>	<ul style="list-style-type: none"> • Attracting youth to engage in providing extension services digitally may be challenging unless the venture is made attractive to give better returns for the youth and ensure the youth pick it as an entrepreneurial venture.
Post-harvest loss and wastage management	<p><i>i. Agriculture Sector Transformation and Growth Strategy</i></p> <p>Development of processing and post-harvest aggregation centres</p>	<ul style="list-style-type: none"> • Increased cost of inputs such as herbicides, pesticides, and storage facilities has been a major impediment to productivity and management of post-harvest losses
	<p><i>ii. Medium-Term Plan IV/Bottom-Up Economic Transformation Agenda plan</i></p> <ul style="list-style-type: none"> • Reduce post-harvest losses experienced by smallholder farmers from the current 30 per cent to 10 per cent by refurbishing and modernizing six (6) warehouses • Reduce fish post-harvest losses 	<ul style="list-style-type: none"> • The success of reducing post-harvest losses as envisaged in MTP IV will depend on the actualization of the post-harvest storage facilities

Areas of focus linked to productivity	Issues addressed by policy framework	Gaps in the policy framework and means of addressing them
Transport and logistics infrastructure	<p><i>i. Strategy for the Revitalization of Agriculture (SRA) and Agricultural Sector Development Strategy (ASDS)</i></p> <ul style="list-style-type: none"> Provision of rural roads to facilitate movement of agricultural produce to the market Reduce dependence on rain-fed agriculture 	<ul style="list-style-type: none"> Inadequate rural roads due to limited funding for rural infrastructure reduce market access and increase post-harvest losses, especially for perishable produce such as horticulture. Adequate allocation of funding to the agriculture sector equivalent to 10 per cent of government total expenditure will work to transform the agriculture sector to achieve objectives This will help the country to invest in irrigation to increase productivity amidst the increasing impacts of climate change
	<p><i>ii. Agriculture Sector Transformation and Growth Strategy</i></p> <ul style="list-style-type: none"> Development infrastructure (dams) Government to provide power and road infrastructure. 	
	<p><i>iii. Medium-Term Plan IV/Bottom-Up Economic Transformation Agenda plan</i></p> <p>Mobilizing transport service providers into cooperatives</p>	
Access to markets	<p><i>i. Agriculture Sector Transformation and Growth Strategy</i></p> <p>Provide access to markets for livestock and crops</p>	<ul style="list-style-type: none"> Despite proposals to create mechanisms to help farmers access markets, these have remained a mirage since implementation is yet to be actualized. Where initiatives have been initiated, sustainability has become a matter of concern. Farmers are left to struggle with issues of brokers and middlemen to access markets, albeit at a huge cost and poor returns for their produce
	<p><i>ii. Medium-Term Plan 4/Bottom-Up Economic Transformation Agenda plan</i></p> <ul style="list-style-type: none"> Enhance market access through the establishment of aggregation centres and incubation centres for specialty teas diversification Linking farmers with producers through contract farming Completion and accreditation of national dairy laboratory 	
Disaster risk management	<p><i>i. Agriculture Sector Transformation and Growth Strategy</i></p> <p>Establish a coordination mechanism to prepare for all disasters</p>	<ul style="list-style-type: none"> Climate change has been a factor in reducing productivity. Yet in the developed world, crop and livestock insurance is crucial in cushioning the farmers due to the impacts of climate change Crop and livestock insurance has been implemented in the past but has not been successful due to the risk involved in designing the policies. Since it is offered by the private sector, if they find it unprofitable, they may not engage in it
	<p><i>ii. Medium-Term Plan IV/Bottom-Up Economic Transformation Agenda plan</i></p> <ul style="list-style-type: none"> Establish the national disaster authority and centres of excellence for DRM and DRM funds Mainstream DRM in all sectors to reduce the effects of hazards early warning systems 	

Areas of focus linked to productivity	Issues addressed by policy framework	Gaps in the policy framework and means of addressing them
<p>Research and innovation</p>	<p><i>i. Agriculture Sector Transformation and Growth Strategy</i></p> <ul style="list-style-type: none"> • Strength research and innovation and launch priority digital and data use cases to drive better decision • Create an enabling environment for research and innovation 	<ul style="list-style-type: none"> • Investment in agricultural research has been low to enable the development of drought, pest, and disease resistance technologies and seeds • Scaling up funding will help the sector meet the needs of the growing population in terms of food security
	<p><i>ii. Medium Term Plan IV/Bottom-Up Economic Transformation Agenda</i></p> <ul style="list-style-type: none"> • Crop research facilities improved • Livestock research facilities improved • Construction of tea research and development factory 	
<p>Agriculture financing</p>	<p><i>i. Medium-Term Plan (MTP I, II and III)</i> Additional land brought under irrigation</p>	<ul style="list-style-type: none"> • Increase in invasive species in arable land and the effects of prolonged drought hinder the achievement of expanding the area under agriculture. Innovative ways to tap into water harvesting by building dams will be crucial to increasing the water available for irrigation. • Besides, the introduction of technologies to limit the expansion of invasive species will enable the usage of arable land. • Financing by the private sector is based on the returns they obtain for the money invested in projects. Since roads are public goods, which the farmers will not be willing to pay for, the development could be taken in the form of loans by the government to support the farmers. • The NFSP programme faces challenges related to distribution delays, regional disparities, and accountability concerns as well as quality issues. • Farmers complain about long distances to collection points as well as long queues. • Regional disparity also affects the effectiveness of the programme in meeting the diverse needs of farmers across various parts of the country due to different planting and harvesting times. • Despite improvements in the registration and distribution process, there are concerns about corruption and lack of accountability. • Ensuring transparency and accountability in the distribution of subsidized fertilizers is crucial to prevent leakages and ensure that the intended beneficiaries receive support
	<p><i>ii. Agriculture Sector Transformation and Growth Strategy</i></p> <ul style="list-style-type: none"> • PPP financing infrastructure such as roads 	
	<p><i>iii. Medium Term Plan IV/Bottom-Up Economic Transformation Agenda plan</i></p> <ul style="list-style-type: none"> • Development of national agriculture financing policy • Reduce dependence on imports • Farmers organized and linked to financial institutions 	
	<p><i>iv. Sessional Paper No. 10 of 2012 on Kenya Vision 2030</i></p> <ul style="list-style-type: none"> • The policy guides the implementation of the National Fertilizer Subsidy Programme • The programme aims to make fertilizer more accessible and affordable by addressing supply chain challenges • This is done by reducing the cost of fertilizer, enhancing the timely distribution of fertilizers through the National Cereals and Produce Board (NCPB) and farmer cooperatives, providing farmers with knowledge and guidance on the effective use of fertilizers, and encouraging the adoption of improved inputs and practices to move away from traditional methods that limit productivity 	

Areas of focus linked to productivity	Issues addressed by policy framework	Gaps in the policy framework and means of addressing them
Agro-processing and value addition	i. Strategy for the Revitalization of Agriculture (SRA) and Agricultural Sector Development Strategy (ASDS) <ul style="list-style-type: none"> • Set up six (6) agro-processing hubs across Kenya for local and export markets • Increase the contribution of agro-processing to GDP by Ksh 130 billion over the period 2019 to 2024 	<ul style="list-style-type: none"> • A good plan and leadership to implement the plan is important. The Economic Recovery Strategy for Wealth and Employment Creation was implemented to the letter and the country achieved a growth rate of 7.0 per cent in 2007 from negative growth in 2002 • The implementation of the value chain and all the projects will require strong leadership besides the huge financial commitment
	ii. Medium Term Plan IV/Bottom-Up Economic Transformation Agenda plan Development of national agriculture financing policy	

b) Land use planning and irrigation

Land use planning is a critical component of sustainable agriculture. It involves the strategic allocation of land for various uses, balancing economic, social, and environmental considerations. In agriculture, land use planning ensures responsible use of natural resources, particularly soil and water, which are essential for crop production. Sustainable land use aims to maintain or enhance soil fertility and quality, ensuring long-term viability and productivity. There are several challenges to land use that impact its sustainability and productivity including land degradation. The increasing population pressure exacerbates the demand for land, leading to intensified use and sometimes unsustainable practices. In addition, poverty plays a key role, limiting the ability to implement and maintain sustainable land management practices. Furthermore, climate change poses a significant threat, altering weather patterns and exacerbating land degradation. These challenges are further compounded by institutional and legal hurdles, such as fragmented legal frameworks, ignorance, and the potential for abuse and misuse of land rights. Addressing these issues to achieve productivity requires a multifaceted approach that includes policy reform, education, and the promotion of sustainable practices.

The Kenya Vision 2030 outlines a comprehensive plan to support both land use and irrigation in the country. This includes developing a national land use master plan, which includes the development of national, regional, and local area land use plans through an integrated and participatory process to streamline land use. The proposed master plan is expected to support the efficient utilization of all forms of land and the establishment of economic zones in the Northern region, according to their potential. The plan also includes planning for irrigation and drainage infrastructure, with programmes that aim to put under irrigation 404,800 hectares. The National Spatial Plan 2015 to 2045 was developed in 2016 and includes elements of land use planning for all purposes.

The government is also reviewing Sessional Paper No. 3 of 2009 on National Land Policy to align it with the Constitution and other provisions of the new dispensation in the BETA. This is because the policy has not achieved its objectives due to bottlenecks arising from the overlapping of roles between the Ministry of Lands, and the National Land Commission and the role of county government on land matters that was omitted in the policy. The BETA is designed to address land use and irrigation challenges through strategies to improve

land use. It focuses on bringing on board an additional 170,000 acres under irrigation annually, to increase land under food crops and horticultural production thereby increasing agricultural output. That said, the area under production is much lower than the 170,000 acres of additional areas targeted by MTP IV and the BETA. Furthermore, an increase in land under irrigation will increase land under production and productivity.

c) Intermediate inputs use, access, and costs

Intermediate inputs are the resources used in the production process that are not primary factors of production. These include fertilizers, pesticides, seeds, and other agrochemicals. The use of these inputs plays a crucial role in improving agricultural productivity. However, the use of fertilizers is often constrained by high fertilizer prices and limited access to fertilizer, especially government subsidized fertilizer for smallholder farmers. While the government has provided fertilizer subsidies since 2000, the intensification of subsidized fertilizer supply by the government increased in 2022 when the government introduced the National Fertilizer Subsidy Programme (NFSP), which was rolled out in 2022, after a prolonged drought. This initiative was aimed at expanding food production to mitigate soaring food prices.

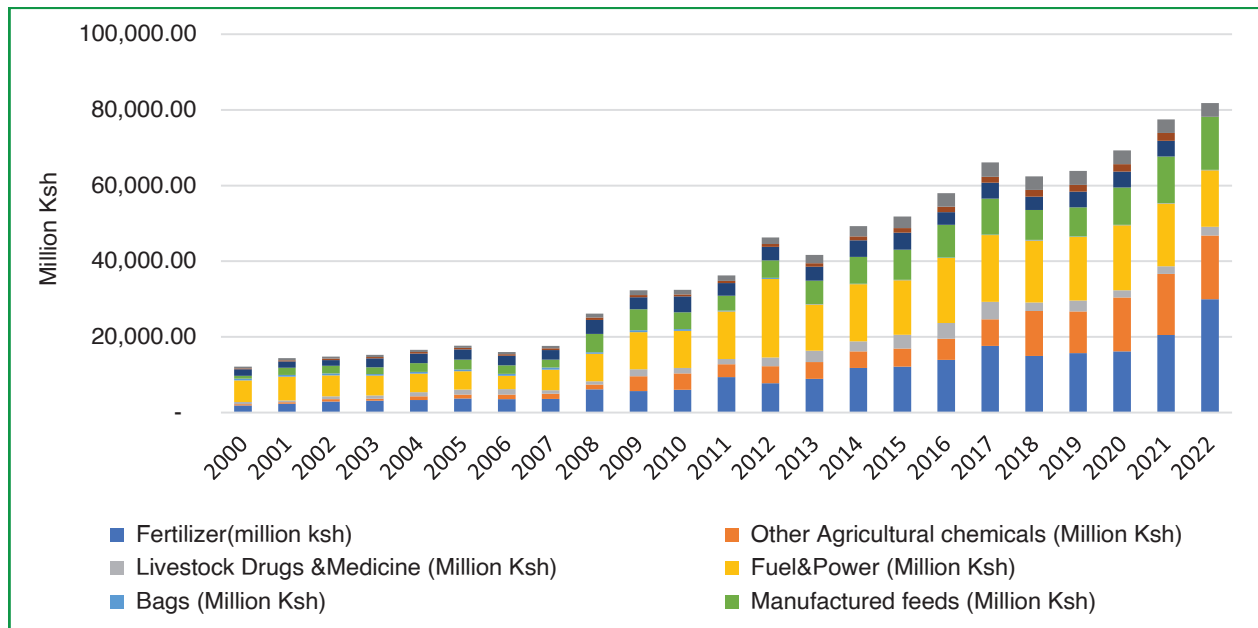
The programme offered subsidized fertilizer at half the price of commercial fertilizer to farmers. About 3.5 million of 50 kg bags of subsidized fertilizer were distributed in 41 out of the 47 counties from the inception of the NFSP up to July 2023. To access the government subsidized fertilizers, farmers must register

digitally through the provincial administration (Assistant Chief's offices countrywide). For farmers to access the fertilizer, they use the short code message *707# through their phones to know the number of bags of fertilizer they are entitled to. However, farmers are not able to access the desired amount and the types they desire for their farming. There is also limited knowledge on fertilizer application by farmers, which affects the output and productivity if not properly applied.

The use of intermediate inputs, among other factors, is directly linked to increased productivity. For example, the higher the input use such as fertilizer the higher the increase in productivity, but the relationship is not always linear or positive, as it depends on various factors, such as the type of fertilizer, quantity and quality, timing, and the combination of inputs used. The biophysical and socio-economic conditions of the farming system also play a role. Thus, training farmers is crucial to ensure proper use of fertilizer and create awareness of the soil type of their farms and whether the fertilizer they receive is suited for planting.

Figure 6.2 presents the value of intermediate inputs used from 2000 to 2022. The value of imported fertilizer has increased over the years, with a decline in the years the country experienced drought, such as in 2014/15, 2018, and 2021/2022. The increase in output of maize, the main crop where fertilizer is used, has been fluctuating over time. The value of other inputs used, such as seeds, agricultural chemicals, fuel, and power also increased, which may be an indication of mechanization in the agriculture sector.

Figure 6.2: Intermediate input used from 2000 to 2022 (Ksh million)



Source: KNBS (Various), Economic Survey

Overall, there is increased use of intermediate inputs as reflected by the value of various inputs. Despite this, Kenya has not experienced significant increases in the production of major crops such as maize. The government focus through MTP IV is to provide subsidized inputs such as seedlings, fertilizer, and agrochemicals across the prioritized value chains to one million farmers to gradually realize food security and commercialize production. Furthermore, the ASTGS aims to provide affordable inputs and equipment including for irrigation, processing, and post-harvest aggregation to one (1) million farmers, pastoralists, and fisherfolk, and shifting nationwide subsidies focus to register 1.4 million high-needs farming households to empower them to access a range of inputs from multiple providers through e-vouchers. Both the ASTGS and the BETA plan are aligned to address the issues arising from intermediate input access.

d) Human capital development in agriculture

Human capital development is a critical element of the agriculture sector in Kenya. It involves investing in skills and knowledge for smallholder farmers, which can lead to increased knowledge in the use of inputs and adoption of technology, thereby increasing productivity, income, and overall economic growth. Farmers often lack access to timely and accurate market information, which can hinder their ability to make informed decisions about what to grow and when to sell. Investments in developing the human capital of smallholder producers would empower them with various useful skills to enable them to expand their farming, and therefore output and incomes. The BETA outlines initiatives to support human capital development in the agricultural sector through capacity building on various aspects,

such as in leather designing, finishing and fashion of leather, dairy farming, and climate-smart agriculture.

A pool of trained professionals is very crucial to ensure they are adequately prepared to perform their tasks efficiently. Table 6.2 presents the agricultural professionals and the tasks performed. The majority of labour in the agriculture sector based on the task performed is

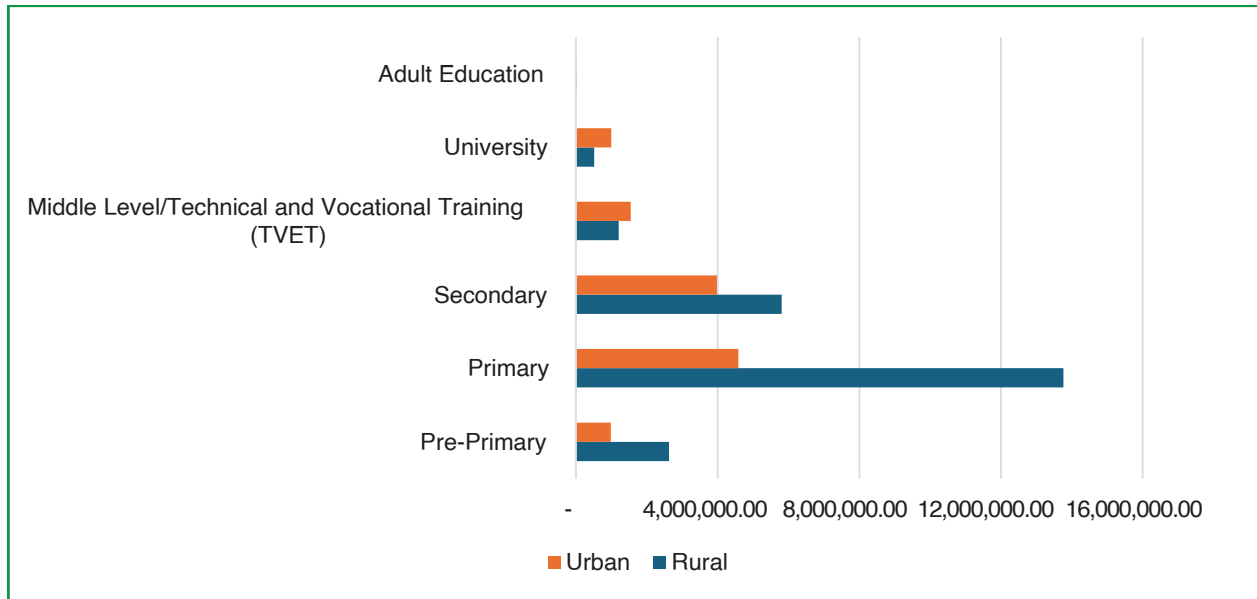
drawn from those who have completed primary and secondary education. The majority of those who have attained primary education as their highest level of education reside in rural areas. This category of people is crucial in supplying labour for the agriculture sector, although most of them migrate to urban centres in search of job opportunities. Figure 6.3 presents levels of education reached per region from the 2019 population and housing census.

Table 6.2: Agricultural professionals and tasks performed

Agricultural professionals	Tasks performed
Farmworkers and labourers	Manual tasks related to crop cultivation, planting, harvesting, and maintenance
Agricultural equipment operators	Operate machinery such as tractors, combines, and irrigation systems
Animal breeders	Improving livestock genetics
Livestock workers	Care for animals on farms, including feeding, milking, and managing herds
Graders and sorters	Assess the quality of agricultural products, and classify fruits, vegetables, and other produce based on size, colour, and defects
Agricultural inspectors	Ensure compliance with regulations related to food safety, quality, and environmental standards
Supervisors and managers	Oversee farm operations, workers, and production processes; manage resources, plan schedules, and make strategic decisions
Hired farm managers	Handle day-to-day operations, including budgeting, staffing, and crop management
Agricultural scientists and researchers	Conduct research to improve crop yields, soil health, and pest management; develop new technologies and sustainable practices
Agribusiness professionals	Marketing, sales, and distribution of agricultural products; manage supply chains, logistics, and market access

Source: Authors' Compilation

Figure 6.3: Highest level of education reached by region, 2010

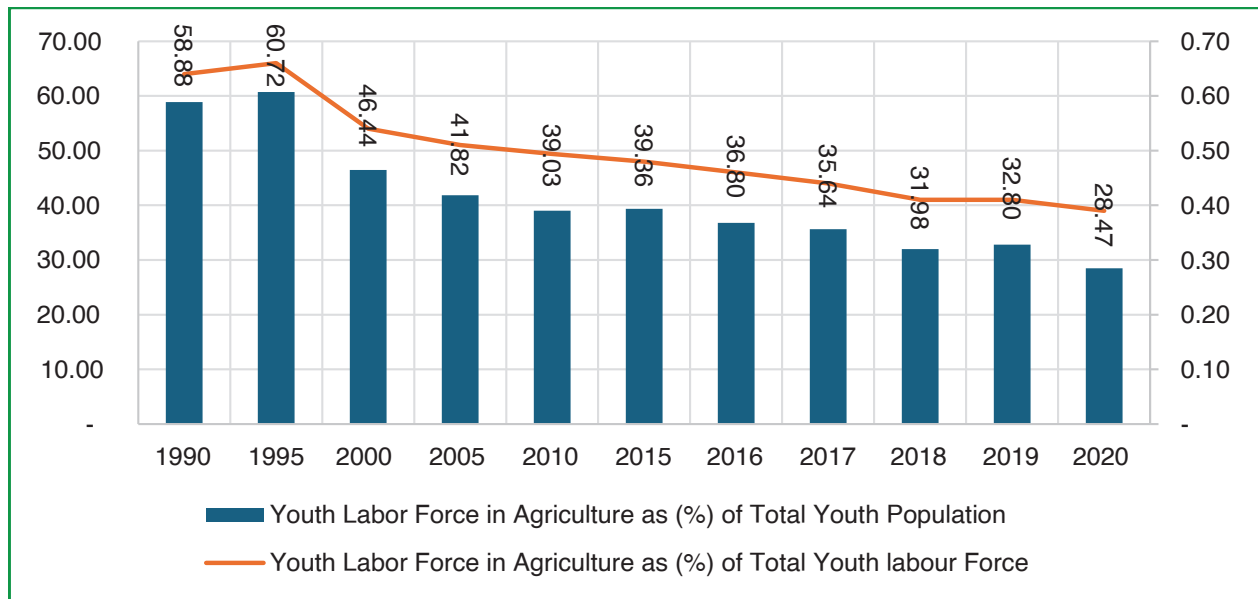


Data Source: KNBS (2019), Housing and Population Census

Youthful labour in agriculture is vital for two reasons; first, young workers bring energy, innovation, and a fresh perspective to the agriculture sector, which is essential for driving progress and adapting to changing market demands. They are more likely to adopt new technologies and sustainable farming practices, which can lead to increased productivity. Second, engaging young people in agriculture can help address the global challenges of unemployment and food insecurity. Thus, by providing opportunities for the youth in agriculture, a country can harness

their potential to contribute to economic growth and the overall resilience of food systems. Evidence shows that the participation of the youth in agriculture has been declining over time. Figure 6.4 presents the trends in youth labour employment since 1990. Youth labour in agriculture as a per cent of total youth declined from 58.88 per cent in 1990 to 28.47 per cent in 2020, a more than 50 per cent decrease. The same is true for the youth labour force in agriculture as a percentage of the total youth labour force.

Figure 6.4: Youth labour in agriculture (1990-2020)



Data Source: KNBS (2020), ILOSTAT (2020), Kenya Labour Force Participation Report, 2018

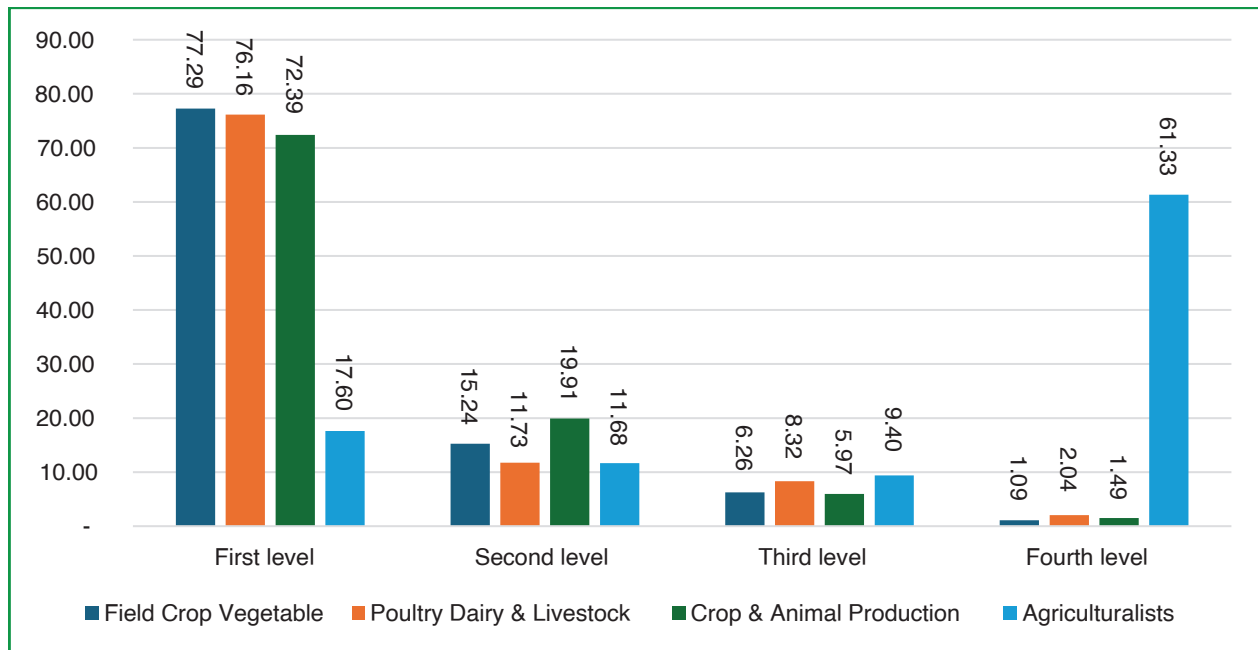
Furthermore, the total labour employment as a percentage of the national employment, has been falling over time from about 46 per cent in 2000 to 33 per cent in 2021. The decline in labour employment in the sector could be attributed to the decline in agricultural contribution to GDP, declining sector growth as well as labour shift to other sectors of the economy such as the service sector.

The development of relevant and quality skills is globally acknowledged as fundamental for enhanced economic growth and productivity (ILO and OECD 2018; ILO 2008). Quality skills, especially in agriculture, are necessary for enhancing labour productivity. This means that skills development must focus on the adequacy, relevance, quality, and adaptability of the workforce. Figure 6.5 presents the results for skills requirements in the agriculture sector. The majority of the workforce within the field crop, vegetable, and horticultural farm workers sub-group are operating with the 1st skill

level, representing 77.29 per cent of the total workforce. This underscores the prevalence of individuals with primary education qualifications engaged in field and horticultural work. The poultry, dairy, and livestock producers sub-group come second at 76.16 per cent at the 1st skill level and 11.73 per cent at the 2nd skill level. The crop and animal producers sub-group scores third with 72.39 per cent of the workforce operating with 1st skill level, emphasizing the need for basic agricultural knowledge.

The Agriculturalists sub-group has a distinct skill distribution, with 61.33 per cent of professionals at the 4th skill level, reflecting the demand for high-level expertise in certain agricultural professions due to the advanced nature of their roles. Agriculturalists and related professionals conduct research and improve or develop concepts, theories, and operational methods; apply scientific knowledge relating to crop husbandry.

Figure 6.5: Skills level for the agriculture sector, 2021



Data Source: Construction from Kenya Continuous Household Survey data, 2021

e) Market access and facilities

Market access, which includes access to quality inputs, information on farming practices, and the market for agricultural produce is one of the major issues for farmers in Kenya. Agricultural marketing is identified as a key priority area for the successful modernization of the agriculture sector (ASTGS, 2019). Furthermore, access to markets has been highlighted as one of the main obstacles limiting the productivity of the agricultural industry as efficient markets promote faster distribution of food from areas with excess supply to areas with a deficit.

The Kenya Agricultural Marketing Strategy (AMS) 2023-2032 highlights leveraging on digital technologies to enhance market access for small-scale farmers. It outlines a comprehensive approach to integrating mobile applications, precision farming technologies, and e-commerce platforms into the agricultural landscape. The key areas related to market access to agricultural produce and products in Kenya include market infrastructure, agricultural

produce and product standards, value-addition of agricultural produce, marketing channels, transport infrastructure and logistics, agricultural market intelligence, technology and innovation, marketing capacity, and access to domestic and export markets.

The MTP IV captures the areas of market access support for farmers as identified in the BETA plan. The support includes infrastructure for crops and livestock such as the modernization of milk, meat, and honey processing plants, the establishment of food processing hubs to increase value addition, and the development of a digital superhighway to leverage technology for access to agronomic and market information for agricultural produce. Even though market access is a significant challenge for many smallholder farmers, the right mix of policy support as proposed by the government and investment and innovation can create more inclusive and profitable agricultural markets for the farmers in Kenya. This is necessary to create impetus for implementing policies aimed at supporting market access for the farmers.

f) Infrastructure – Rural roads and processing and storage facilities

Infrastructures such as storage facilities and rural roads play a very crucial role in fostering agricultural productivity. Roads enhance accessibility to agricultural areas, connecting farmers to markets, input suppliers, and processing facilities. It also fosters supply chain efficiency by enabling timely delivery of agricultural inputs (such as seeds, fertilizers, and machinery) to farms. The existence of storage and cooling facilities for horticultural

produce ensures losses and wastage are minimized. Inadequate storage facilities and poor infrastructure have been identified as the major sources of food loss and wastage for small-scale farmers. Furthermore, the development of road infrastructures, especially in rural areas remains a challenge. For example, the total additional length of the roads constructed between 2020 and 2022 per county for the high agricultural potential counties is presented in Table 6.3. Meru, Nandi, Murang’a, and Laikipia counties did not report any additional roads in 2021.

Table 6.3: Length of roads constructed (2020-2022)

County	Total Length at start (KM)	2020 Additional (KM)	2021 Additional (KM)	2022 Additional (KM)
Meru	349.50	286.20		66.90
Tharaka Nithi	110.70	42.80	61.00	9.10
Embu	121.20	88.80	0.10	31.50
Nyandarua	95.00	33.90	71.70	95.50
Nyeri	513.20	412.40	274.90	359.60
Kirinyaga	267.70	161.30	198.10	79.10
Murang’a	362.80	229.60		142.90
Nandi	137.20			93.40
Laikipia	197.40	156.10		68.60
Kericho	179.20	132.20	112.00	0.40
Kakamega	188.60	128.70	31.40	93.50
Kisii	138.00	80.60	197.40	92.40

Data Source: KNBS (2023), Economic Survey

Under the BETA plan, the government proposes to support infrastructure development through various initiatives such as the completion of all roads under construction and the construction of an additional 6,000 km as well as upgrading and maintaining rural access roads. Furthermore, the government proposes to establish storage facilities and aggregation centres by organizing farmers into cooperatives. These initiatives are likely to increase access to market and storage facilities, hence reducing losses and wastage thereby increasing productivity.

g) Value chain development and value addition

The value chain and value addition in agriculture are pivotal for enhancing the efficiency and effectiveness of food production systems. By integrating activities from production to consumption, the agricultural value chain ensures that each step adds value to the product, thereby increasing its market worth and consumer appeal. Value addition particularly plays a crucial role in reducing post harvest

losses and creating jobs along the chain. It also allows for product differentiation, which can lead to increased revenues for farmers and a more robust agricultural economy. The government has initiated several projects aimed at increasing value addition for the farmers. The National Agricultural Value Chain Development Project (NAVCDP), which is funded by the World Bank aims to increase value addition for 500,000 small-scale farmers through value chains in various priority programmes. These include dairy, poultry, fruits (banana, mango, and avocado), vegetables (tomato and potato), coffee, cotton, cashew nut, apiculture, and pyrethrum.

NAVCDP builds on the foundation of other projects such as the Kenya Agricultural Value Chain Enterprises (KAVES), a SIDA funded project that was implemented in 23 arid and semi-arid counties in 2013-2018. Despite the

implementation of these projects, agricultural value chain development in Kenya faces several challenges that need to be overcome to ensure the success of the proposed initiatives. These include low agricultural productivity; high transaction costs; poor storage facilities; weak market linkages and innovation gaps. The implementation of the proposed initiatives on value addition in the BETA plan will undoubtedly help ameliorate the challenges of low-value addition experienced by farmers.

The BETA plan has prioritized commodities focusing on three strategic areas; increasing production of commodities to alleviate food security; export promotion through value addition to increase export earnings and stabilize prices and import substitutions by promoting local production of imported commodities to reduce import bills (Table 6.4).

Table 6.4: BETA priority commodities

BETA strategic focus	BETA priority commodities
Food security	Maize, Irish potato, pulses, banana, beef, fish, dairy, indigenous poultry, sweet potato, mutton, chevon and pork
Export promotion	Tea, coffee, vegetables (garden peas, African bird eye chillies), fruits (avocado, mango, passion fruit, pineapple), nuts (macadamia, cashew nuts, coconut), pyrethrum, bixa, and miraa
Import substitution	Sorghum, wheat, sugarcane, rice, cotton, oilseeds (canola, soybean, sunflower, sesame, groundnut/ peanut) and honey

Source: Author compilation from MTP IV

6.3 Agriculture Productivity

The concept of productivity growth is closely linked to technical progress. One of the major sources of growth for aggregate output and agricultural output is productivity growth (Solow, 1957). Hayami and Ruttan (1985) indicate that the agricultural output can grow through an increase in the use of resources of land, labour, capital, and intermediate inputs and/ or as a result of advances in the technology of production through which greater output is achieved by a constant or declining resource base. This section presents an analysis of

agricultural productivity in relationship to labour, intermediate input use, land under cultivation (crop yields), and government spending in the agriculture sector.

a) Agriculture labour productivity

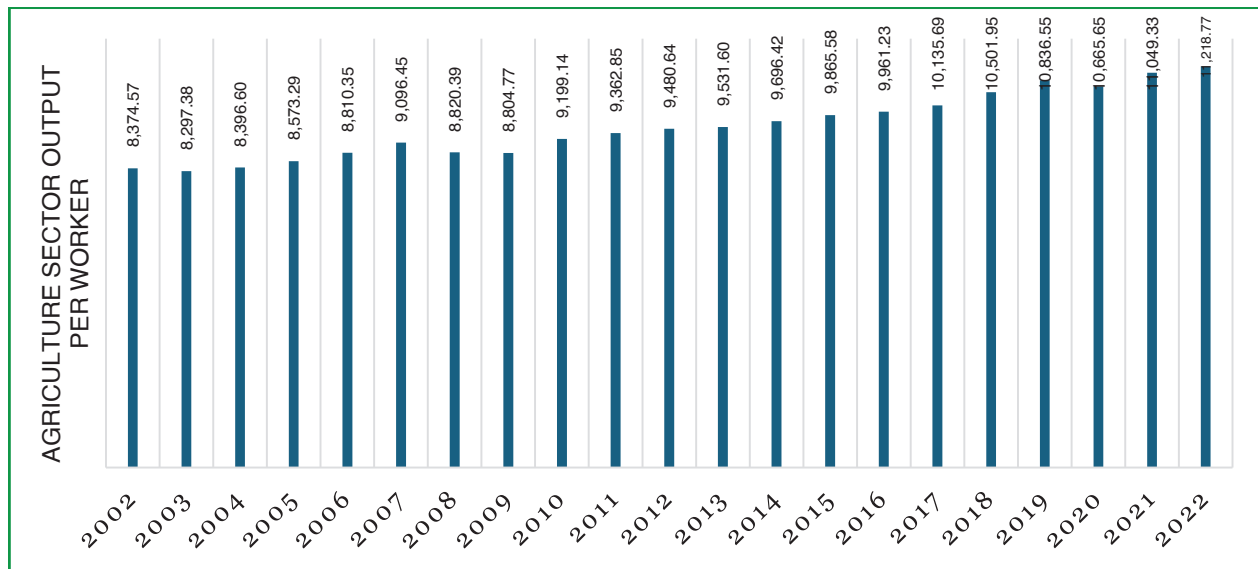
Agricultural labour productivity is critical for Kenya’s economy, given the sector’s contribution to GDP and support to other sectors of the economy. Focusing on increasing the efficiency and output of agricultural labour is a key strategy for sustainable development and prosperity. MTP IV aims to improve labour

efficiency and productivity by establishing a productivity and competitiveness award programme and increasing the employability of the youth.

increase of about 34 per cent. The increase in output per work in the sector could be attributed to the quality of labour attracted in the sector. Due to the unemployment rate, even graduates are willing to accept low-paying jobs in agriculture, to earn an income. That said, the sector has also been undergoing mechanization, and as output increases then output per work increases.

Figure 6.6 presents agriculture sector productivity per work from 2002 to 2022. The output per work increased from Ksh 8,374.57 in 2002 to Ksh 11,218.77 in 2022, which is an

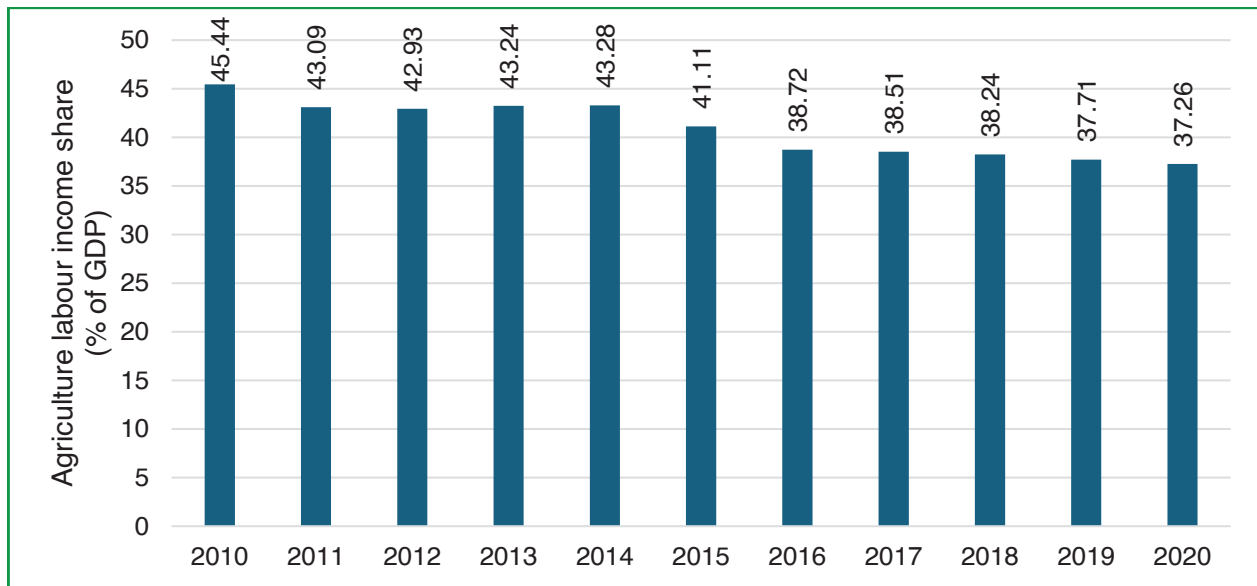
Figure 6.6: Output per work in the agriculture sector, 2002-2022



Data Source: KNBS (Various), Economic Survey

While productivity per worker has been increasing, the labour income share of agriculture as a percentage of GDP has been declining from an average of 45.44 per cent in

2010 to 37.26 per cent in 2020 (Figure 6.7). The reason could be due to declining employment in the sector.

Figure 6.7: Agriculture labour income share (% of GDP), 2010 to 2020


Data Source: KNBS (Various) Economic Survey

b) Agricultural productivity by land use (crop yields)

This section looks at agricultural productivity based on crop yields, which is calculated as a ratio of total production in tonnes divided by the area under production in Ha. Two broad categories of crops are examined: food crops and industrial (cash) crops. The food crops include cereals, legumes, and tubers. The cash crops include coffee, tea, sisal, and pyrethrum. Horticulture is evaluated as a cash crop since the production is mainly grown for export.

(i) Food crops production

Cereals production and yields

Cereal production plays a crucial role in the agricultural sector, significantly contributing to food security, economic development, and employment. It is a primary source of sustenance and income for many Kenyan farmers, with the food crops sub-sector accounting for approximately 33 per cent of the total agricultural GDP (AFA, 2022). The importance of cereals in Kenya is underscored

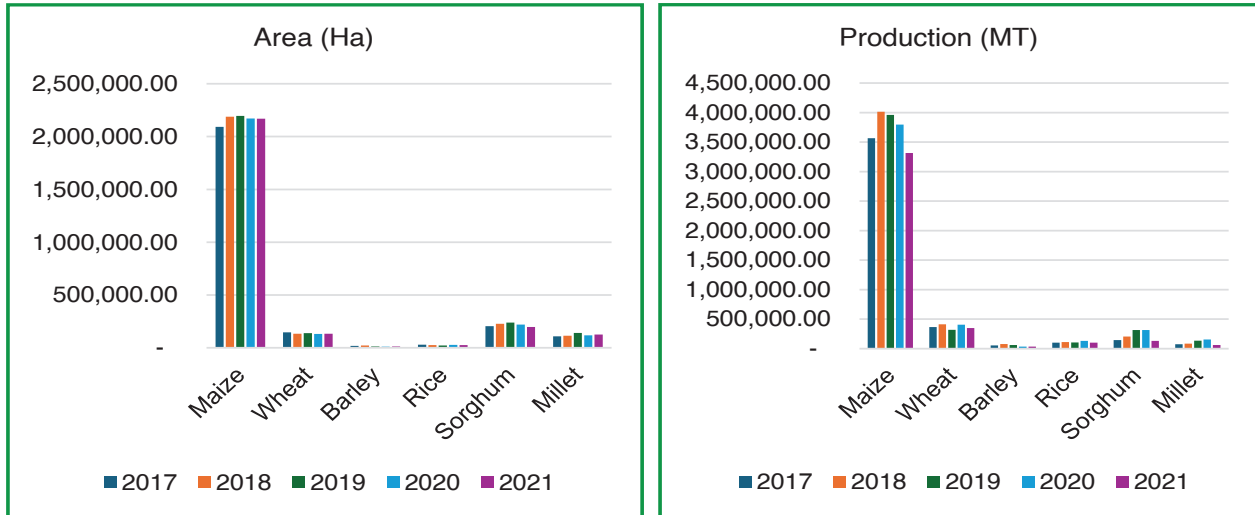
by the efforts to enhance the productivity and profitability of key cereal commodities such as maize, sorghum, and millet. Moreover, the expansion of cereal production and yield is vital for addressing food security, especially considering the region's low yield growth rate and high number of food-insecure persons (Nyiauwung et al., 2020). Increasing cereal yields and production is essential for achieving national food security and supporting smallholder income generation as outlined in MTP IV.

Figure 6.8a presents the trends in changes in production and area under cereals production from 2017 to 2021. The area under cereals production (maize, wheat, barley, rice, sorghum, and millet) has not substantially increased in the last five years. For example, the area under maize production in 2017 was 2.092 million Ha as compared to 2.169 million Ha in 2021, an increase of an average of about 25 Ha of land per year. The area under wheat production declined from 146,804 Ha in 2017 to 134,070 Ha in 2021. The trend is the same for other cereals during the period.

That said, the production of maize decreased from 3.565 million MT in 2017 to 3.314 million MT in 2021, a decrease of about 250,343 MT. This led to a decrease in the maize yield from 1.70 MT/Ha in 2017 to 1.53MT/Ha in 2021. There was also a decrease in yield for rice, barley, sorghum, and millet at 13 per cent, 21

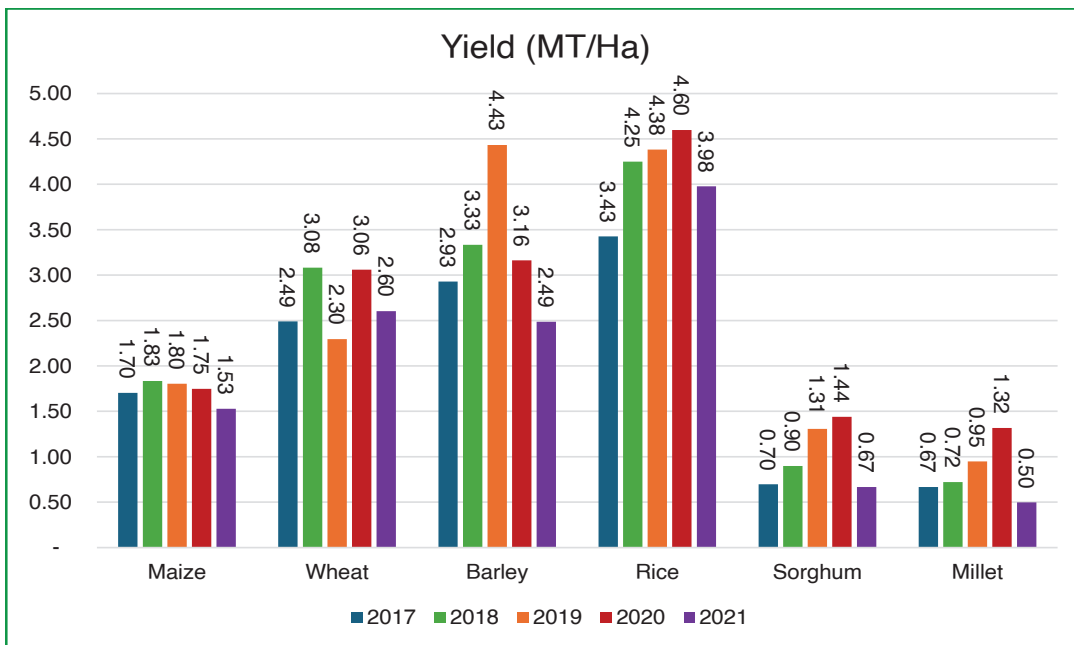
per cent, 53 per cent, and 62 per cent from 2017 to 2021, respectively (Figure 6.8b). This is despite Vision 2030 and the ASTGS strategy emphasizing the need to increase the area under irrigation by 150,000 acres to increase output.

Figure 6.8a: Area under production and output levels for cereals (2017-2021)



Data Source: AFA (2022) Yearbook

Figure 6.8b: Cereals yield (MT/Ha) for 2017-2021



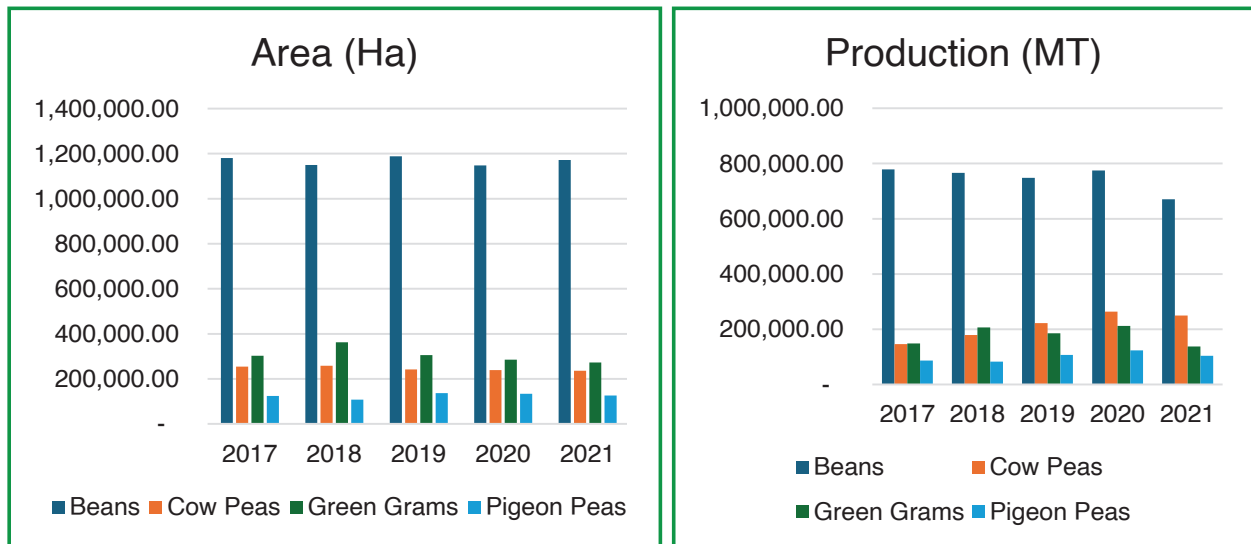
Data Source: AFA (2022), Yearbook

Legumes production and yields

Legumes play a crucial role in ensuring both food security and nutrition. Beans, lentils, chickpeas, and peas are rich in protein, fibre, vitamins, and minerals and provide essential nutrients necessary for human health. Their unique ability to fix nitrogen into the soil through a symbiotic relationship enriches the soil, benefiting other crops in rotation and thereby contributing to sustainable agriculture by reducing the need for synthetic fertilizers. Their deep root systems improve soil structure, prevent erosion, and enhance soil health. They are a staple in many traditional diets in Kenya, providing a reliable source of nutrition. As climate change impacts agriculture, legumes offer resilience for many smallholder farmers. The BETA plan has prioritized legumes such as beans, cowpeas, and green grams as one of the commodities targeted for value addition through agro-processing and to support food security.

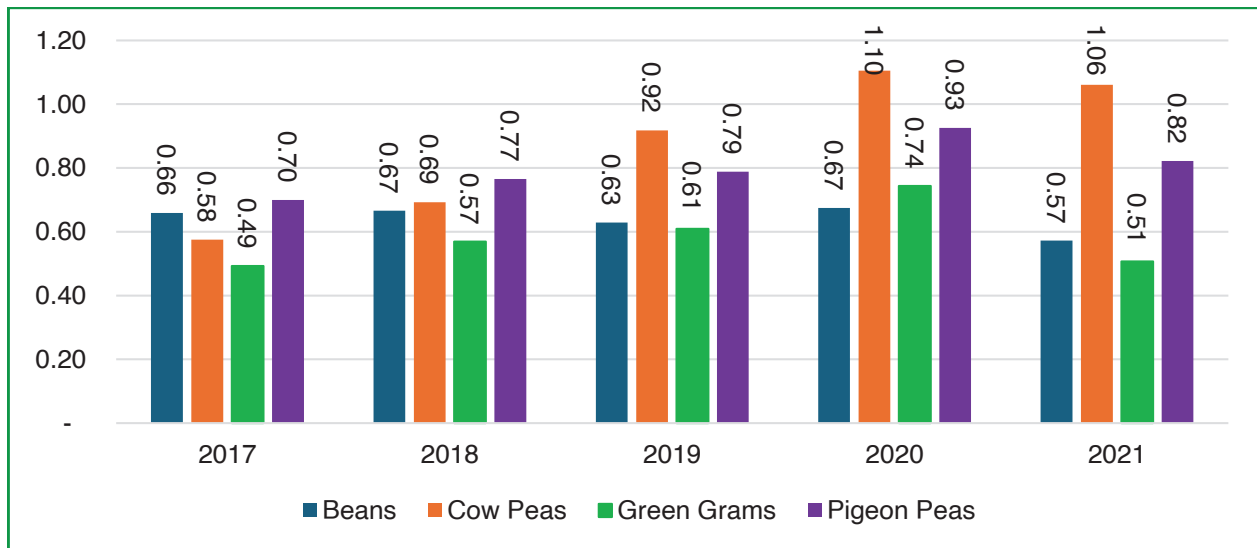
A review of the output, the area under production, as well as the yields for legumes from 2017 to 2021, are presented in figure 6.9a. The area under production for all legumes has not substantially changed. The area under beans production, for example, decreased from 1.181 million Ha in 2017 to 1.172 million Ha in 2021 with production decreasing from 778,336 MT in 2017 to 670,735 MT in 2021, a decrease of about 13.8 percent. The yield for beans also decreased from 0.66 MT/Ha in 2017 to 0.49 MT/Ha in 2021, while for the green grams increased from 0.49 MT/Ha in 2017 to 0.51 MT/Ha in 2021. Only the yields for cowpeas and pigeon peas increased over the period (Figure 6.9b); this could be attributed to farmers' response to climate change and the national and county government 'campaign' for the farmers to plant the 'orphaned crops' such as cowpeas and pigeon peas that are early maturing and drought resistant. This is despite the area under production of these crops remaining almost the same during the period.

Figure 6.9a: Area under production and output levels for legumes (2017-2021)



Data source: AFA (2022), Yearbook

Figure 6.9b: Legumes yield (MT/Ha) for 2017-2021



Data Source: AFA (2022), Yearbook

Tuber production and yields

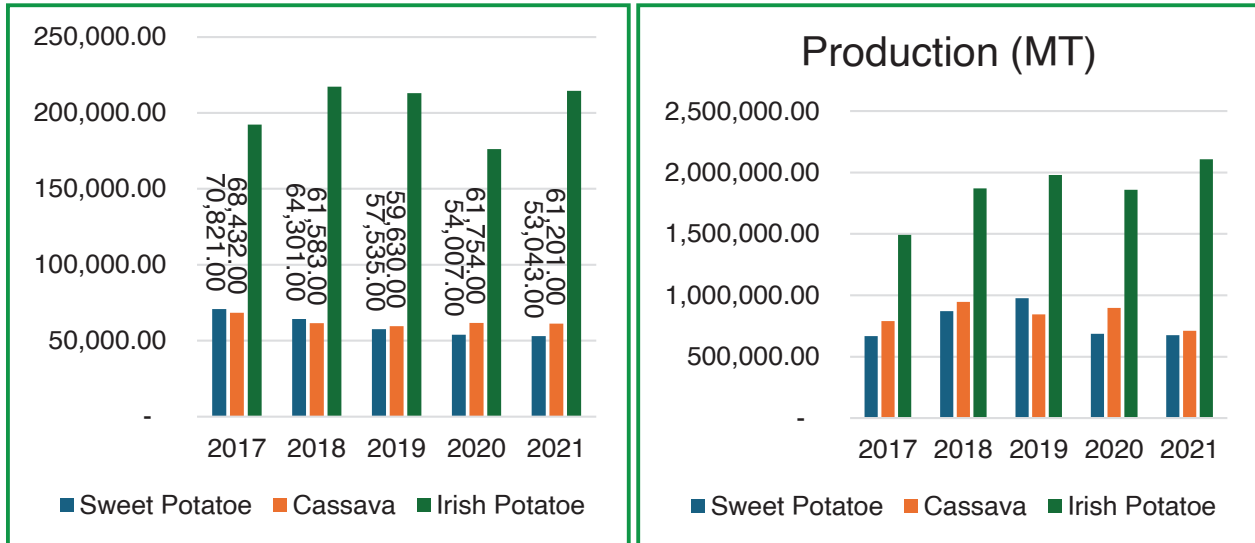
Tuber crops, such as potatoes, are of immense importance to the agriculture sector and economy. They are the second most important food crop after maize, cultivated primarily by smallholder farmers. Tuber production not only contributes significantly to food security but also generates employment for millions of people along the value chain. Despite challenges such as soil fertility loss and inadequate certified seeds, strategic interventions by the government on tuber aims to revitalize the sector, highlighting the role tubers play in ensuring sustainable livelihoods and economic development. The focus on improving tuber productivity is crucial as it has the potential to close the yield gap, enhance income for farmers, and support Kenya’s goal of achieving food self-sufficiency. Furthermore, the government through MTP IV – which implements the BETA plan – has identified tubers (sweet potatoes and Irish potatoes) as priority commodities for value addition through agro-processing to increase productivity.

A review of the tuber crop production area and yields from 2017 to 2022 is presented in Figures 6.10a and 6.10b. Despite the effort by the government to promote production of tubers, the area under cultivation declined. For example, the area under production of sweet potatoes declined from 70,812 Ha in 2017 to 53,043 Ha in 2022. However, production increased from 667,274 MT to 674,348 MT. The production of Irish potatoes for the period increased from 1.49 million MT in 2017 to 2.11 million MT in 2022, an increase of about 42 per cent. There was a gradual decline of yields for sweet potatoes and cassava over the period with the yield for Irish potatoes showing a gradual increase from 7.6 MT/Ha in 2017 to 9.8 MT/Ha in 2022. The increase in the yield of Irish potatoes could be attributed to the implementation of the National Root and Tuber Crops Development Strategy, which lapsed in 2022 but focused on the promotion of indigenous tubers such as cassava and sweet potatoes. The productivity seems to be driven by the acreage used for the production of cassava and Irish potatoes. It is also possible

that climate change and lack of rain could reduce the productivity of tubers production, for example, in the case of 2017 and 2021, when

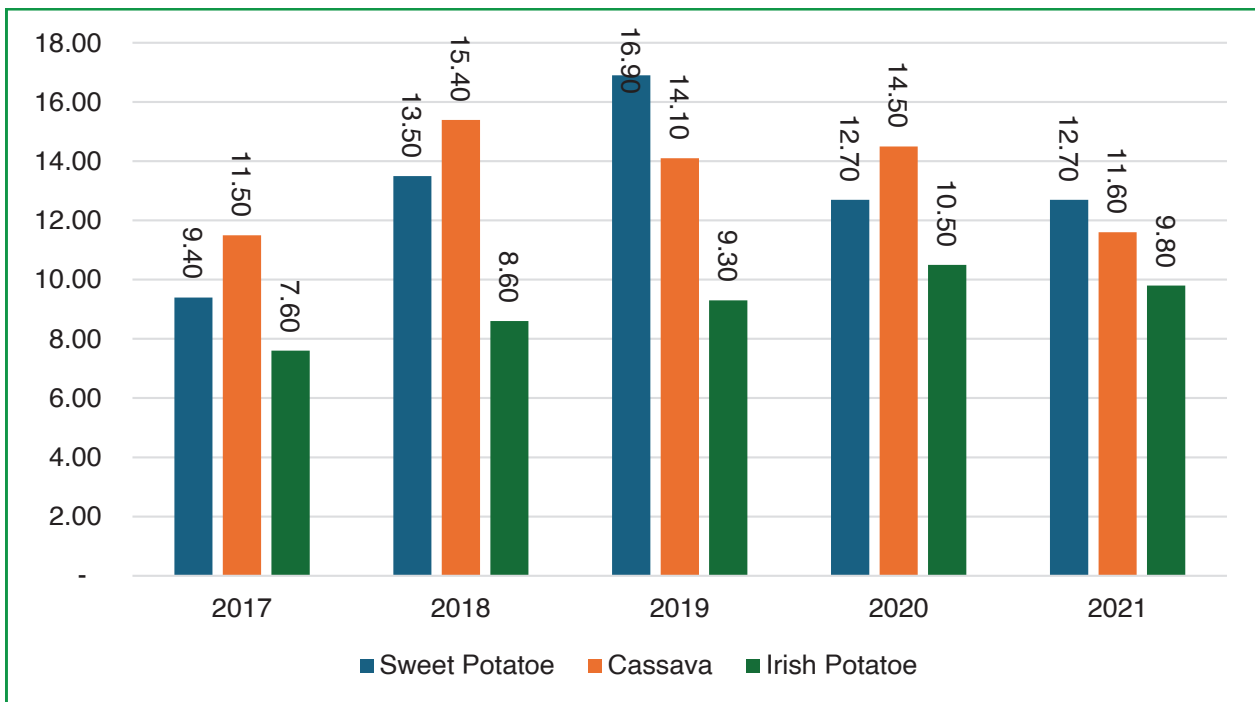
the country experienced severe drought that affected agricultural production.

Figure 6.10a: Tuber's production, and area under cultivation (2017-2021)



Data Source: AFA (2022) Yearbook

Figure 6.10b: Tuber crop yield (MT/Ha) for 2017-2021



Data Source: AFA (2022) Yearbook

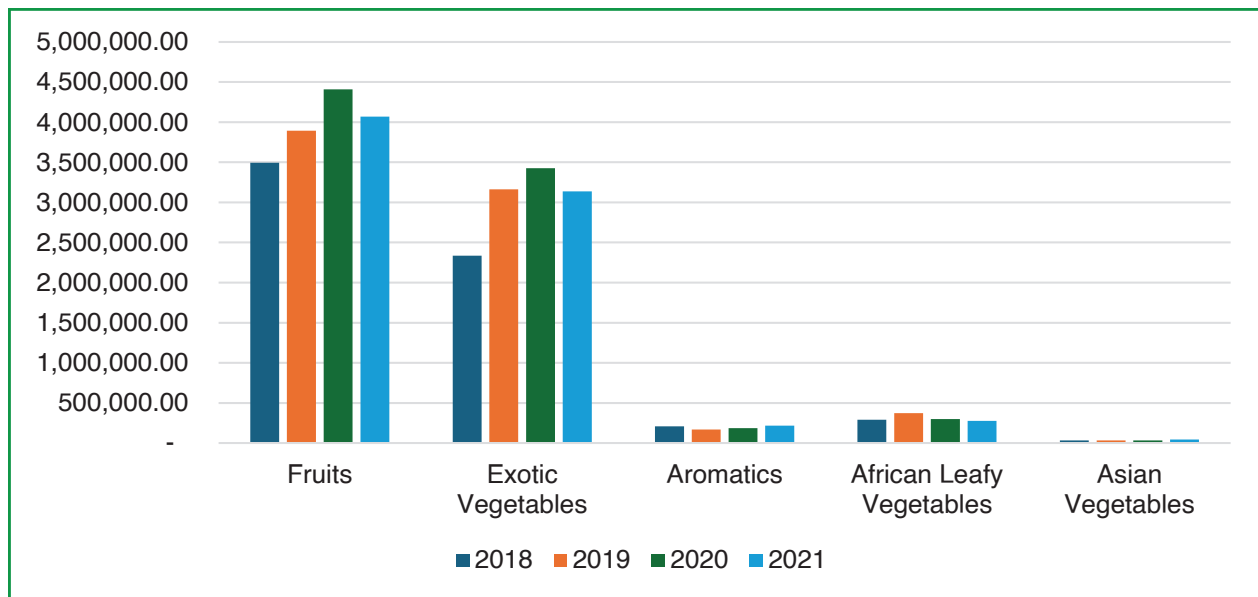
Horticultural crops

Horticulture is the country’s third largest foreign exchange earner. It is a significant contributor to the GDP and a vital source of employment, providing jobs to around 350,000 people directly and supporting the livelihoods of over six million individuals (FPEK, 2020). Moreover, horticulture is essential for the food security and nutritional needs of Kenya’s growing population, while also contributing to small-farm development and the green growth of the economy. The sector’s importance is further highlighted by its potential to adopt low-carbon, resource-efficient practices, which can mitigate the effects of short-lived climate pollutants on agricultural productivity and the environment (Muthama, N., 2021).

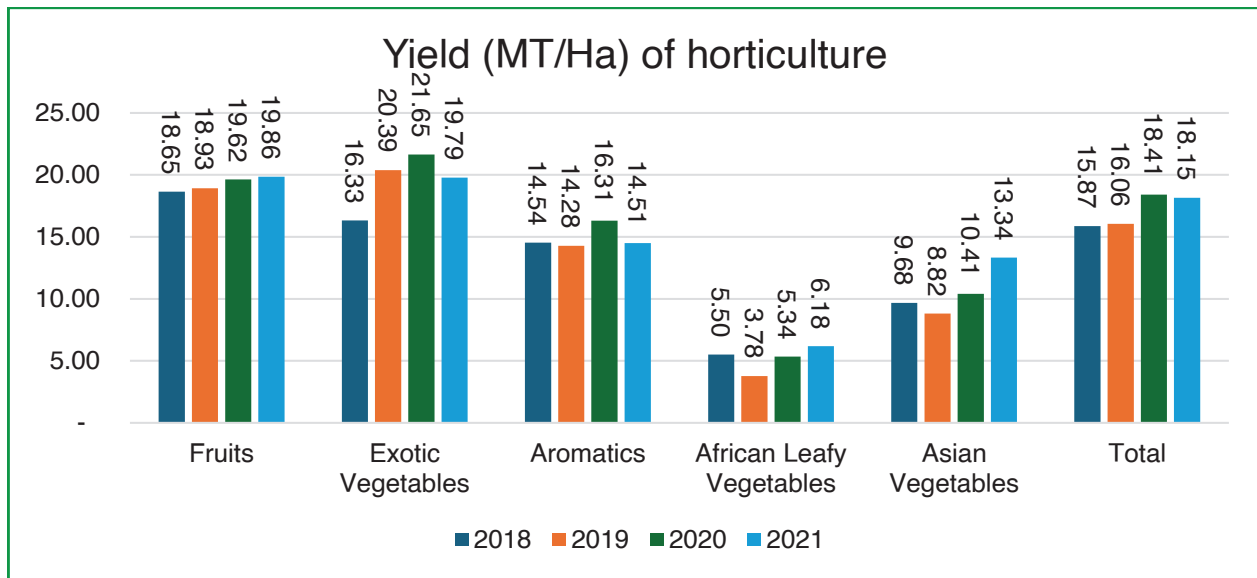
Horticultural production is anchored under the AFA Act (Act No. 13 of 2013) and Crops

Act (Act No. 16 of 2013) and the sub-sector includes fruit crops, vegetable crops, and ornamental plants. A review of the horticultural production shows that the production of various crops has fluctuated over time with the value of horticulture exports decreasing from Ksh 157.7 billion in 2021 to Ksh 146.1 billion in 2022 (KNBS, 2023). The decline can be attributed to the challenges facing the sector, for example, unpredictable weather conditions, high costs of farm inputs, use of obsolete technology, and stringent international standards. The production and yield of the main horticultural crops such as fruits and exotic vegetables had a gradual increase between 2018 to 2021, while that of aromatics, African leafy vegetables fluctuated over the same period (Figures 6.11a and 6.11b). Furthermore, the yields of all the fruits and vegetables show a gradual increase for the period.

Figure 6.11a: Horticultural production and yields (2017-2021)



Data source: AFA (2022) Yearbook

Figure 6.11b: Horticultural area under production (2017-2021)


Data Source: AFA (2022) Yearbook

While the productivity of horticultural produce was below the target in MTP III, in MTP IV, horticultural production has been prioritized for development focusing on increasing the productivity of commodities such as vegetables (garden peas, African bird eye chillies) and fruits (avocado, mangoes, passion fruit, and pineapple) as a measure to promote export earnings. The focus is to increase production and value addition by increasing land under irrigated crops and providing markets for horticultural and fruit produce. To reduce wastage and loss, the plan entails the construction of fruit and vegetable processing plants and the establishment of collection centres to facilitate the processing, cooling, and storage of potatoes, tomatoes, fruits, and vegetables.

Nuts and oil crops

The nuts and oil crop sub-sector is important as a source of processed edible oil, animal feed, and industrial oil. Kenya imports 95 per cent of its total edible oil requirements (AFA, 2022). This is attributed to low production despite the country's immense potential. That said,

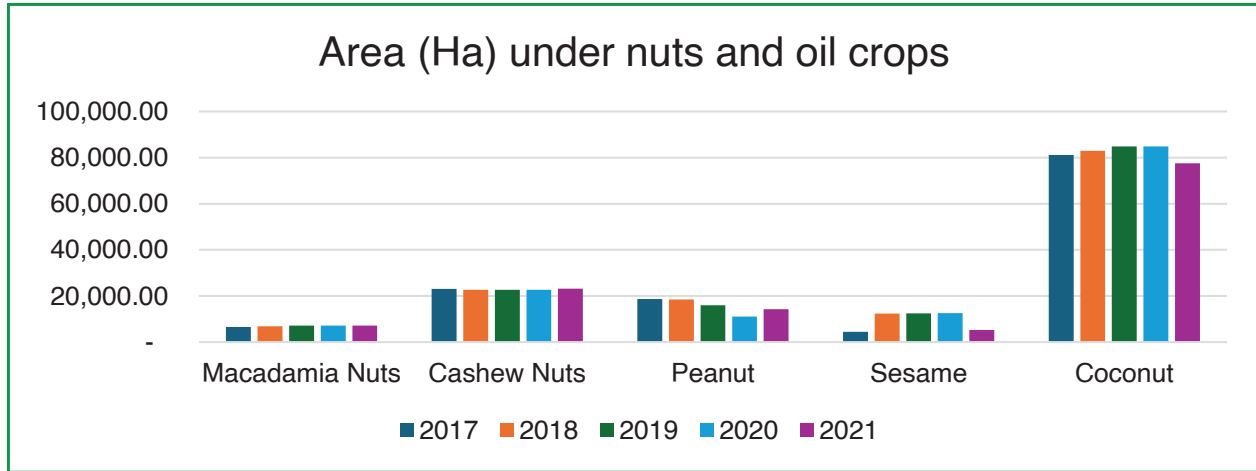
many oil seeds such as sunflower, simsim, soya beans, rapeseed, coconut, castor, and groundnuts can be grown and processed locally. In 2023/2024, the government, through the State Department for Crop Development, planned to support farmers planting edible oil crops in the coastal regions of Mombasa, Tana River, Kilifi, Kwale, and Taita Taveta counties. This will be implemented by allocation of Ksh 134 million under the national edible oil crops promotion project; Ksh 62 million under the coconut industry revitalization project; and Ksh 592 million under the food security and crop diversification project by providing canola, sunflower, soya, and coconut seeds; and providing loans to farmers in the targeted region. This initiative aims to increase the area under the production of nuts and oil crops, and thereby increase production.

Figures 6.12a, 6.12b, and 6.12c present the trends in the acreage, production, and yields for the oil and nuts crops for the period 2017 to 2022. The area under production of macadamia and cashew nuts remained the same over the period (2017-2022) while that under peanut, sesame, and coconut declined (Figure 6.12a).

Furthermore, the production (Figure 6.12b) of the oil and the nuts crop mirrors the area under cultivation, which is also true for the yield of all the nuts and oil crops. The implication of this is that the yield for these crops is driven by the expansion of the area under the production of nuts and oil crops. It is worth noting that among

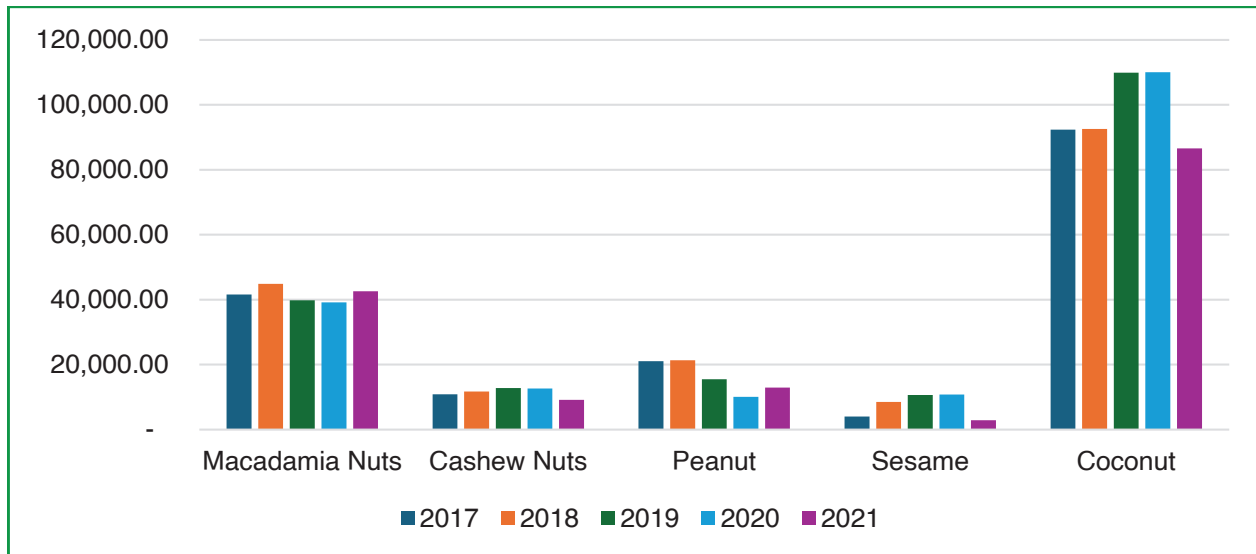
all the oil crops targeted for value addition, coconut yield was the highest followed by macadamia (Figure 6.14c). This is despite the area under macadamia production being smaller, meaning that yields per Ha of land were high compared with other oil and nuts crops.

Figure 6.12a: Nuts and oil crops area under cultivation (2017-2021)



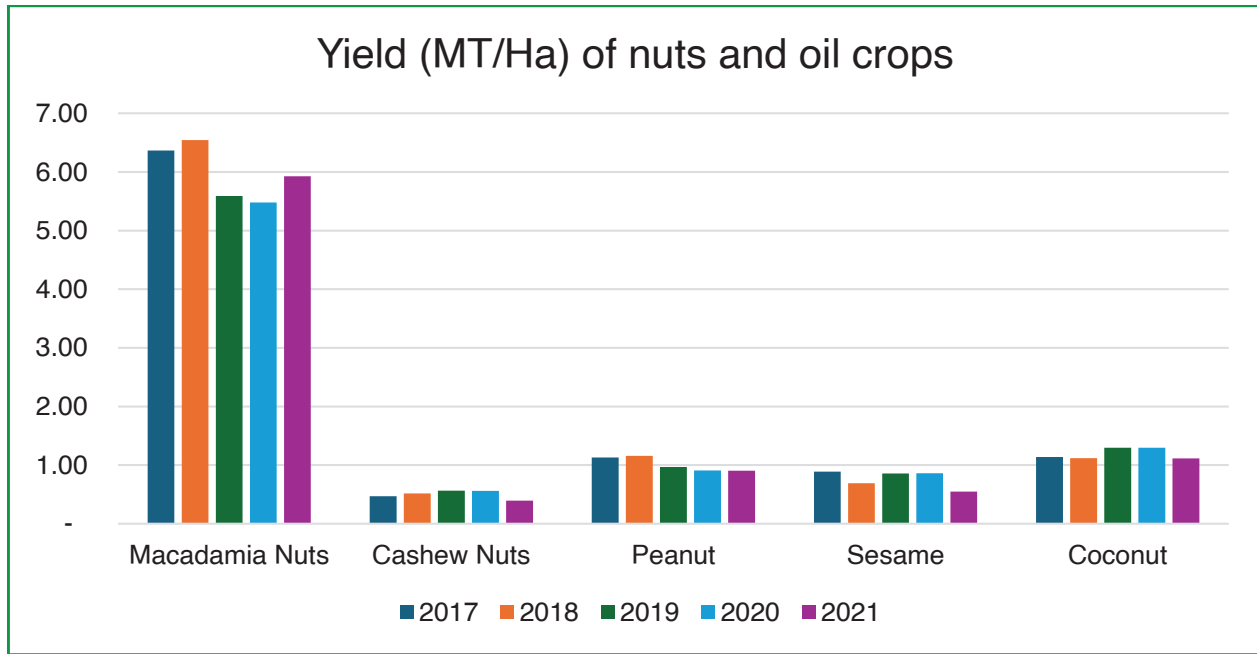
Data Source: AFA (2022) Yearbook

Figure 6.12b: Nuts and oil crops production (2017-2021)



Data Source: AFA (2022), Yearbook

Figure 6.12c: Nuts and oil crops yields (2017-2021)



Data Source: AFA (2022), Yearbook

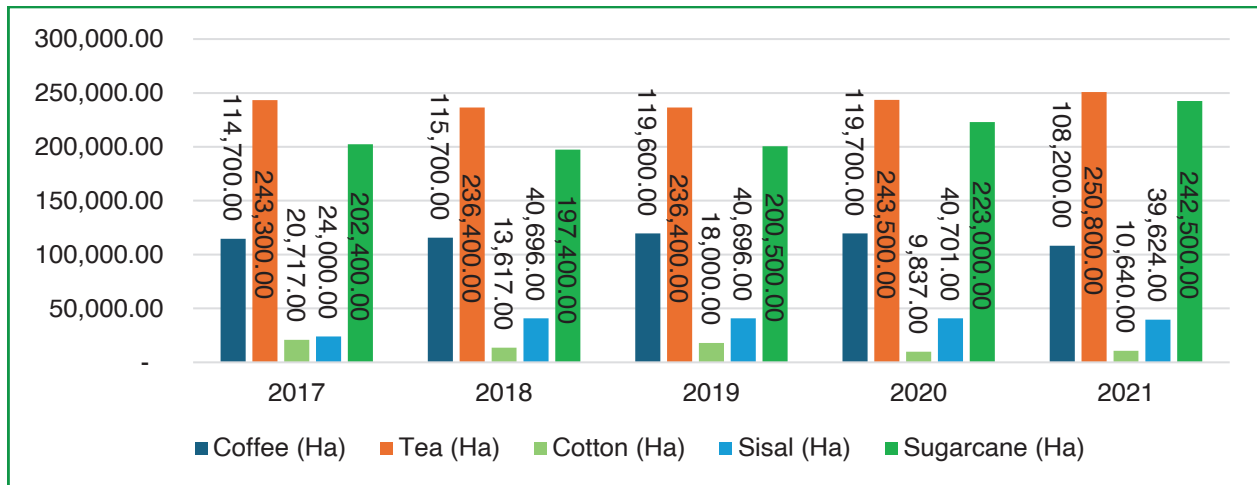
(ii) Cash crops production

Coffee, tea, cotton, sisal and sugarcane production

Cash crop production serves as a significant source of income for farmers and contributes to the country’s GDP. The most important cash crop in Kenya is tea, which is a major export and a key contributor to economic growth. Cash

crops also enhance food security by providing a reliable income stream, which can be used to purchase food and invest in agricultural improvements. In Kenya, cash crops such as tea and coffee not only support the livelihoods of many smallholder farmers but also help in saving foreign exchange expenditures through import substitution. This section examines the area under production, output, and yields for coffee, tea, cotton, sisal, and sugarcane.

Figure 6.13a: Coffee, tea, cotton, sisal, and sugarcane area under production (Ha), 2017-2021

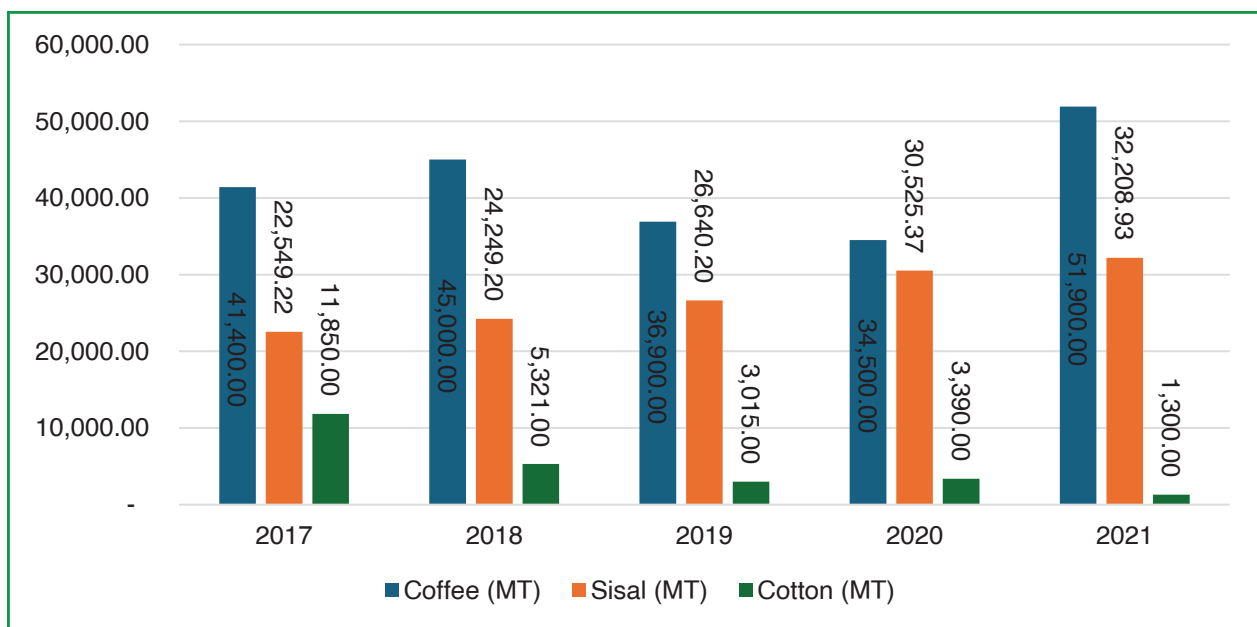


Data Source: AFA (2022) Yearbook

In 2022-2023, coffee worth US\$127.8 million was sold through the Nairobi Coffee Exchange (KNBS, 2023). However, despite the importance of coffee’s contribution to GDP, production has been declining since 2000. Recent reforms undertaken in the sector seem to bear fruits

as the production of coffee increased from 41,400 tonnes in 2017 to 51,900 tonnes in 2021 (Figure 6.13b), a more than 10 per cent increase despite the area under production declining from 114,700 Ha in 2017 to 108,200 Ha in 2021 (Figure 6.13a).

Figure 6.13b: Coffee, cotton and sisal production (MT), 2017-2021

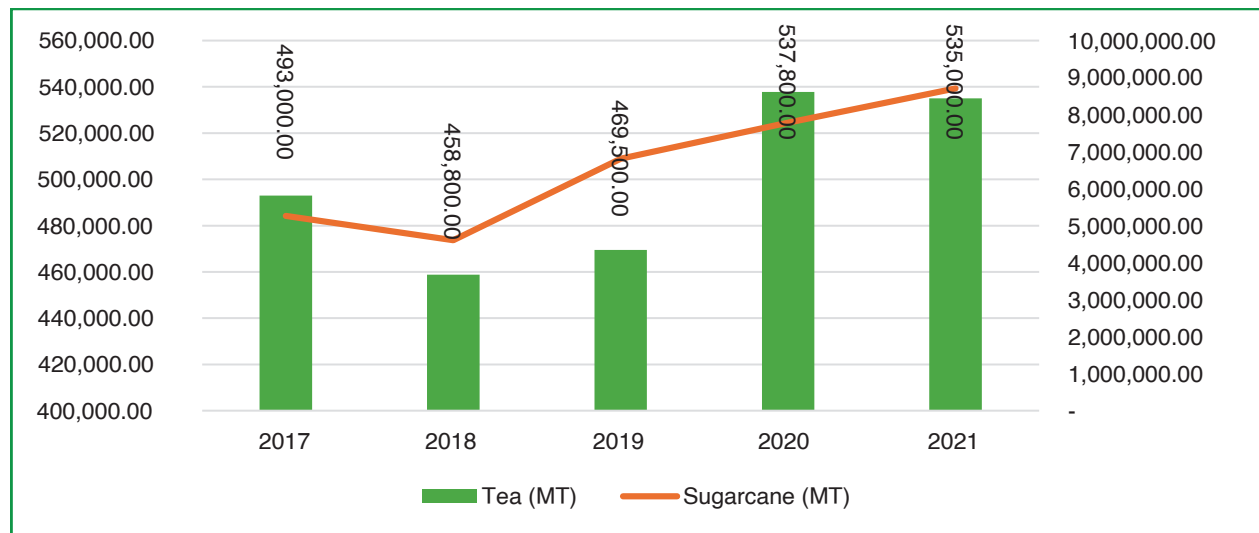


Data Source: AFA (2022) Yearbook

Tea is among the leading foreign exchange earners for the country, contributing about 23 per cent of total foreign exchange earnings and 2.0 per cent of the agricultural GDP. Annually, the country produces over 450,000 metric tonnes of tea, which earns the country over Ksh 120 billion in export earnings, and Ksh 22.0 billion on local sales (KNBS, 2022). Tea production has been increasing since 2017 with production increasing from 493,000

metric tonnes in 2017 to 533,000 metric tonnes in 2022 (Figure 6.13c). The growth could be attributed to the good climate conditions for tea growing, ongoing investments in tea production infrastructure, improved agricultural practices, increased global demand for premium tea, and efficient marketing strategies. The measures and initiatives outlined in MPT IV focused on tea value addition will boost the sector and increase productivity.

Figure 6.13c: Tea and sugarcane production (MT), 2017-2021

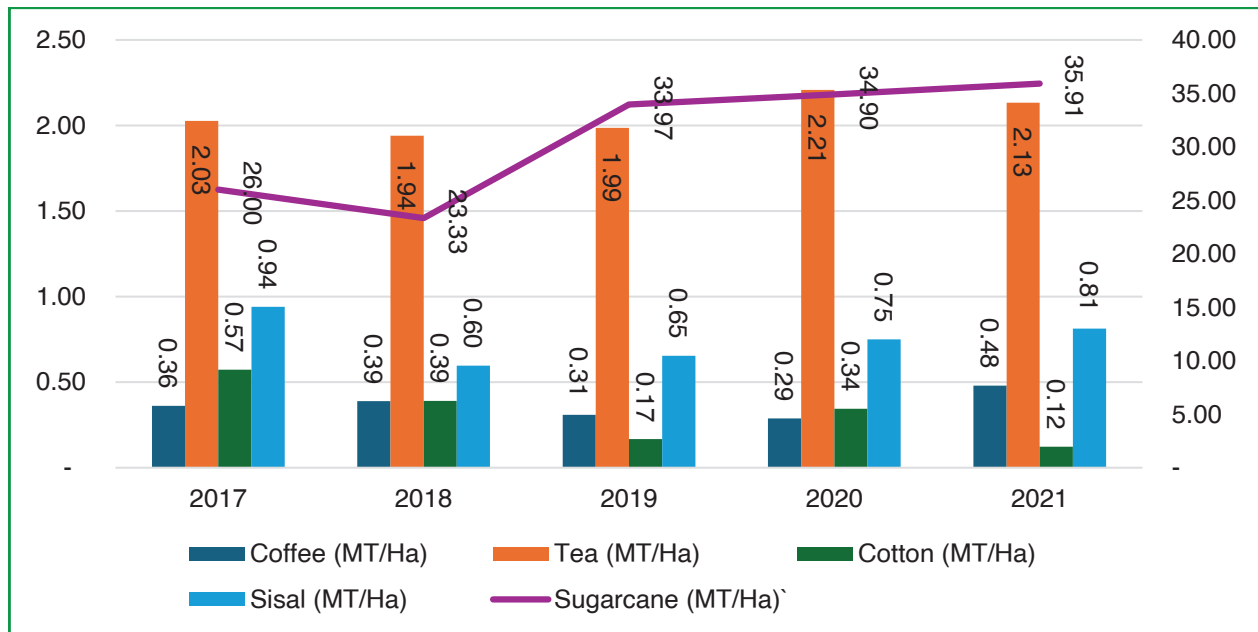


Data source: KNBS (Various), Economic Survey

The yield for the cash crops is presented in Figure 6.13d. The yield, per Ha of coffee and cotton, shows a steady decline while the yield for sisal shows an upward trend. This can be explained by the adoption and use of eco-friendly bags since the ban on the use of plastic

bags in 2017. The yields for tea fluctuated from 2.03 MT/Ha in 2017 to 2.13 MT/Ha in 2021. The yield for sugarcane shows a steady increase over the period, moving from 26 MT/Ha in 2017 to 35.91 MT/Ha in 2021.

Figure 6.13d: Coffee, tea, cotton, sisal, and sugarcane yield (MT/Ha), 2017-2021

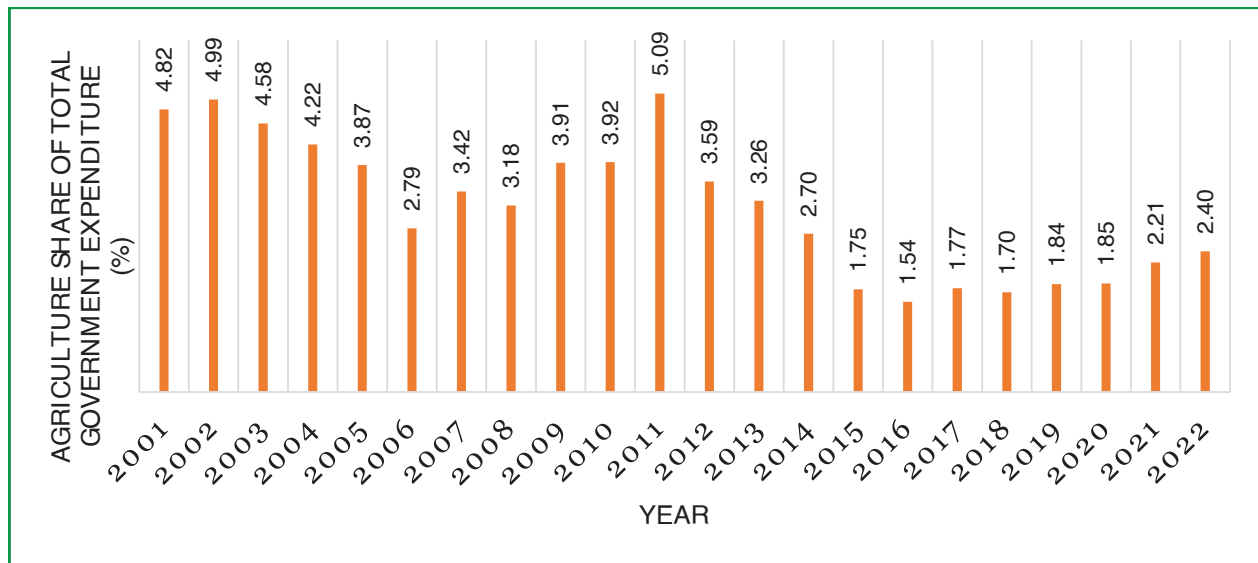


Data Source: AFA (2022), Yearbook

(c) Government spending in agriculture

Kenya is a signatory to the Malabo Declaration on accelerated agricultural growth and transformation. The Malabo Declaration obligates African countries to enhance investment finance, both public and private, to the agriculture sector by allocating at least 10 per cent of public expenditure to agriculture,

and to ensure efficiency and effectiveness in its use. As presented in Figure 6.14, Kenya is far from meeting the Malabo obligation. It was only in 2011 that the country allocated about 5.0 per cent of the national budget to the agriculture sector. Since then, the allocation has been on a decline with the allocation at 2.4 per cent in 2022.

Figure 6.14: Agriculture expenditure share of total government expenditure, 2001-2022


Data source: FAOSTAT

Since agriculture is a devolved function, county governments have a role to play in allocating adequate resources to the agriculture sector while taking measures to climate-proof the sector. The government, through the BETA plan, is focusing on a value chain approach for the sectors with crops and commodities with a high impact on the economy. This initiative is likely to increase spending going to the sector at the national level and in the counties. This will be important in ensuring sufficient resource allocation to meet regional obligations.

6.4 Simulations of policies using CGE

The analysis of the impact of the implementation of the programmes outlined in the BETA plan for the agricultural sector shows that the government can achieve more in terms of economic growth and agricultural productivity. To do this evaluation, the IFPRI RIAPA model was used. The model used the 2021 Kenya Social Accounting Matrix for Kenya in construction. Two scenarios were defined namely, the baseline (Business-as-usual- BAU) scenario and the accelerated growth scenario. In defining the BAU scenarios, the baseline scenario was created to serve as the ‘business-

as-usual’ benchmark against which alternative development scenarios are evaluated. The baseline is intended to depict the most plausible development trajectory of the economy under the existing set of policies and the assumption that growth and socioeconomic trends will continue along their historical paths. The baseline was calibrated to the GDP forecasts generated by KIPPRA KTMM projections. The model was calibrated to track the same level of growth for the period 2022-2027. The business-as-usual scenario assumes a constant sectoral share throughout the simulation period.

The objective of the simulation exercise is to assess the impact of an increase in sectoral and specific commodity growths given the implementation of BETA growth assumptions on agriculture. Upon evaluating the BETA plan initiatives, and sectoral growth from 2010 to 2019, detailed sectoral and commodity average growth assumptions were calculated and plugged into the model for impact results against the baseline scenario results. The key priority sub-sectors highlighted in the BETA plan include maize; dairy; cattle; tea value addition; expanding and revamping export cash crops such as coffee, cashew nuts,

avocado, macadamia nuts, and pyrethrum; and revamping of leather, cotton, pharmaceutical, and textile and clothing industries.

6.4.1 Crops sub-sector

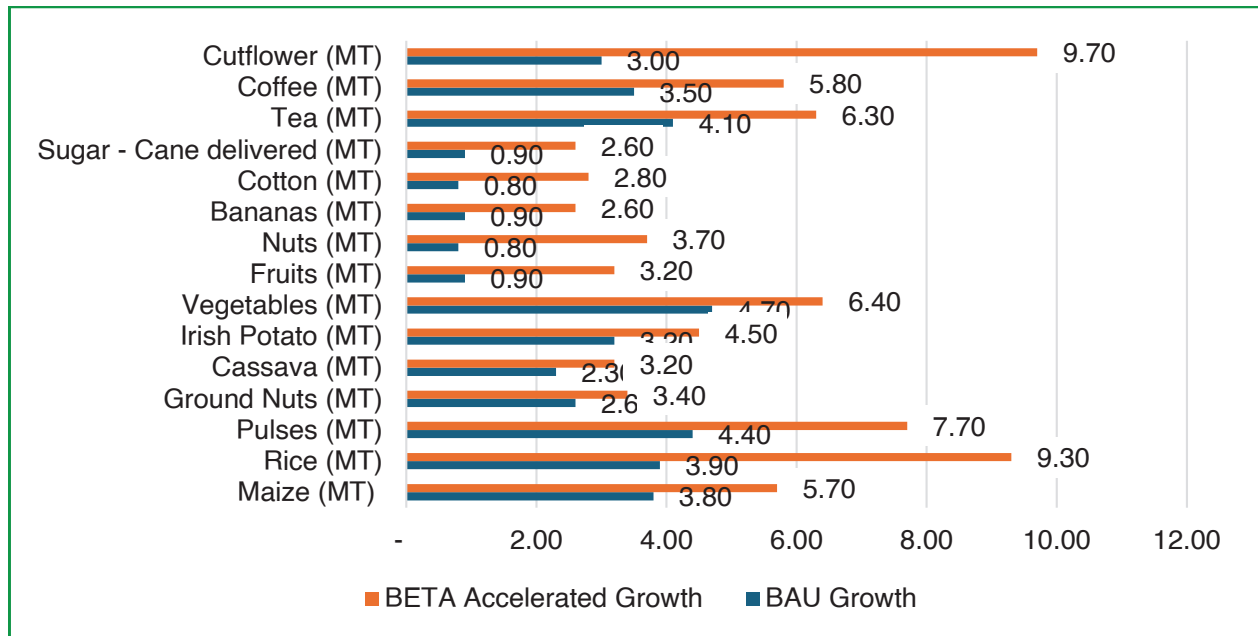
Figure 6.15 presents the simulation results for the period 2022 to 2027 for all the crops evaluated. The higher growth acceleration for rice, maize, cut flowers, tea, coffee, vegetables, nuts, and cotton is consistent with the intentions of the government to increase food production and improve Kenya’s foreign exchange balance. The production of rice has better prospects if the BETA plan is implemented fully. Rice, being one of the priority crops under the BETA plan, can be increased by 6.0 per cent per year if the initiatives are implemented fully and assuming no exogenous factors affect the sector.

To translate this growth expansion into impacts on output and productivity, the production levels

for various commodities for 2021 were used to calculate how much the implementation of the BETA initiatives will increase production as opposed to the BAU growth. Table 6.5 presents the results of the impact of implementing BETA initiatives for the crops sub-sector. Implementation of the initiatives will increase production for various crops by between 0.8 per cent for groundnuts and 6.7 per cent per year for cut flowers.

The production of rice, nuts, cotton, tea, and coffee, which are the main priority value chain crops will be accelerated by 5.4 per cent, 2.9 per cent, 2.0 per cent, 2.2 per cent, and 2.3 per cent respectively per year above the BAU growth rates. This underscores the need to ensure the proposed initiatives are fully implemented to enable growth of the sector as anticipated by the BETA plan.

Figure 6.15: Average annual growth rates for crops sub-sector under BAU and accelerated growth scenarios, 2023-2027



Source: Authors Compilation, From RIAPA Model

Table 6.5: Implication of implementing the BETA programmes on crops

Commodity	Total production (MT) –2021	Business as usual (BAU) growth/year	BETA accelerated growth/year	Accelerated production (MT)/year	Percentage change/year
Maize (MT)	3,314,430.00	3,440,378.34	3,503,352.51	62,974.17	1.90
Rice (MT)	186,000.00	193,254.00	203,298.00	10,044.00	5.40
Pulses (MT)	1,162,859.00	1,214,024.80	1,252,399.14	38,374.35	3.30
Ground nuts (MT)	12,897.00	13,232.32	13,335.50	103.18	0.80
Cassava (MT)	711,890.00	728,263.47	734,670.48	6,407.01	0.90
Irish potato (MT)	2,197,824.00	2,268,154.37	2,296,726.08	28,571.71	1.30
Vegetables (MT)**	78,100.00	81,770.70	83,098.40	1,327.70	1.70
Fruits (MT)**	117,300.00	118,355.70	121,053.60	2,697.90	2.30
Nuts (MT)	127,380.00	128,399.04	132,093.06	3,694.02	2.90
Bananas (MT)	1,984,279.00	2,002,137.51	2,035,870.25	33,732.74	1.70
Cotton (MT)	1,300.00	1,310.40	1,336.40	26.00	2.00
Sugarcane - (MT)	7,800,000.00	7,870,200.00	8,002,800.00	132,600.00	1.70
Tea (MT)	537,800.00	559,849.80	571,681.40	11,831.60	2.20
Coffee (MT)	34,512.00	35,719.92	36,513.70	793.78	2.30
Cut flower (MT)**	210,100.00	216,403.00	230,479.70	14,076.70	6.70

**Exported

Source: AFA and KNBS (2021), Calculation from RIAPA outputs

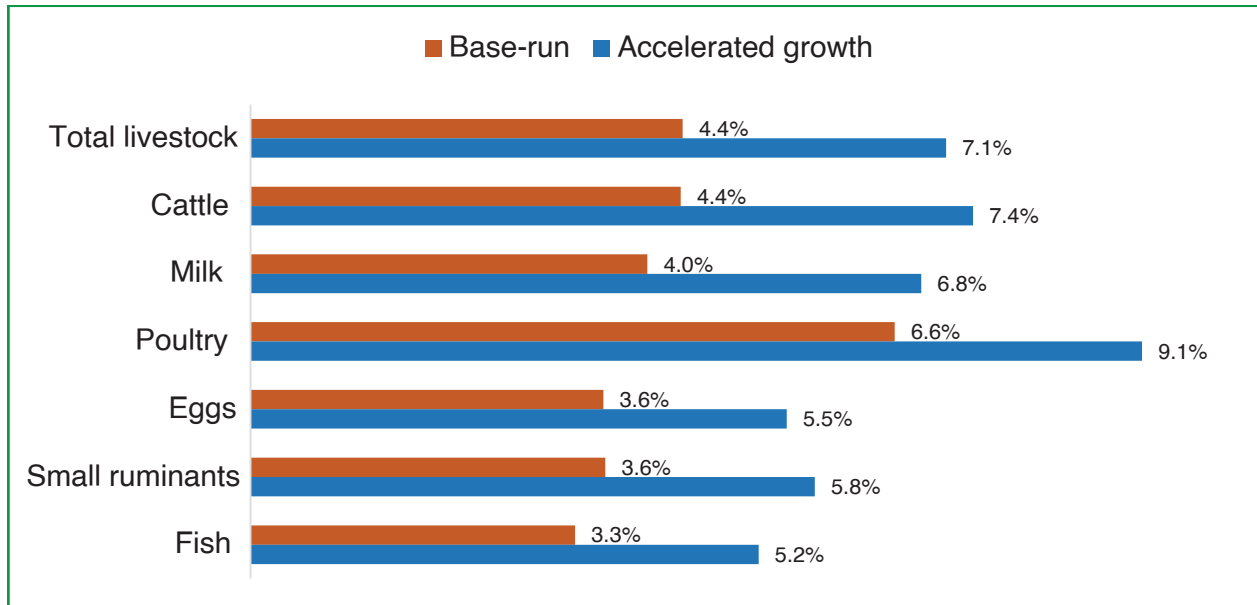
6.4.2 Livestock sub-sectors

The livestock sub-sector in Kenya is a cornerstone of the country's economy and food security. It supports the livelihoods of millions of Kenyans especially in ASAL areas, contributing approximately 12 per cent to the GDP and 42 per cent to the agriculture sector. Moreover, it plays a crucial role in climate change adaptation and mitigation, with a focus on climate-smart agriculture to enhance productivity while reducing greenhouse gas emissions (ILRI, 2021). The sector not only provides essential nutrition through dairy, beef, and small ruminant products but also earns significant foreign exchange through exports. This multifaceted importance of the sector underscores the need

for sustainable development and investment in the livestock sub-sector to bolster Kenya's economic growth and resilience.

Figure 6.16 presents the simulation results for the livestock sub-sector. The average annual growth for the livestock sub-sector under the BETA plan will grow by more than 2.7 per cent than under the business-as-usual scenario. The implementation of the BETA plan is expected to result in an acceleration of livestock growth to 7.1 per cent per year as compared to an average annual growth of 4.4 percent without the government's plan. Higher growth acceleration is shown in sub-sectors such as poultry (9.1% versus 6.6%), milk (6.8% versus 4.0%), and cattle (7.4% versus 4.4%).

Figure 6.16: Average annual growth for livestock sub-sector (2023-2027)



Source: Authors compilation, from RIAPA Model

Furthermore, to evaluate the impact of accelerated growth under BETA, production values for 2020 for various livestock commodities were used to calculate how much the sector will contribute to the economy (Table 6.6). Poultry, cattle, and milk production can greatly be improved if the BETA plan initiatives

under livestock are fully implemented. For example, the country can increase milk production by 113,347 million litres per year by implementing the BETA plan activities focusing on milk production, more than 2.8 per cent above the BAU scenario.

Table 6.6: Implication of implementing the BETA programmes on livestock and livestock products

Commodity	Production (QTY) - 2020	Business as usual (BAU) growth/year	BETA accelerated growth/year	Accelerated production (MT)/year	Percentage change
Milk (M Lt)	4,048,116.59	4,210,041.25	4,323,388.52	113,347.26	2.80
Eggs (M Tray)	296,652.24	307,331.72	312,968.11	5,636.39	1.90
Poultry (No.)	57,161,777.35	60,934,454.65	62,363,499.08	1,429,044.43	2.50
Leather (No.)	9,661.55	10,308.87	10,743.64	434.77	4.50
Cattle (No.)	21,653,595.41	22,606,353.61	23,255,961.47	649,607.86	3.00
Fish (MT)	163,600.00	168,998.80	172,107.20	3,108.40	1.90

Source: AFA and KNBS, calculation from RIAPA outputs

Similarly, the production of eggs, poultry cattle, and fish could be increased by 1.9, 2.5, 3.0, and 1.9 per cent per year, respectively, under the BETA plan. For instance, the proposal to establish feedlots and feed production zones, and livestock disease management and insurance under the BETA plan can be a game changer in transforming the sub-sector for productivity.

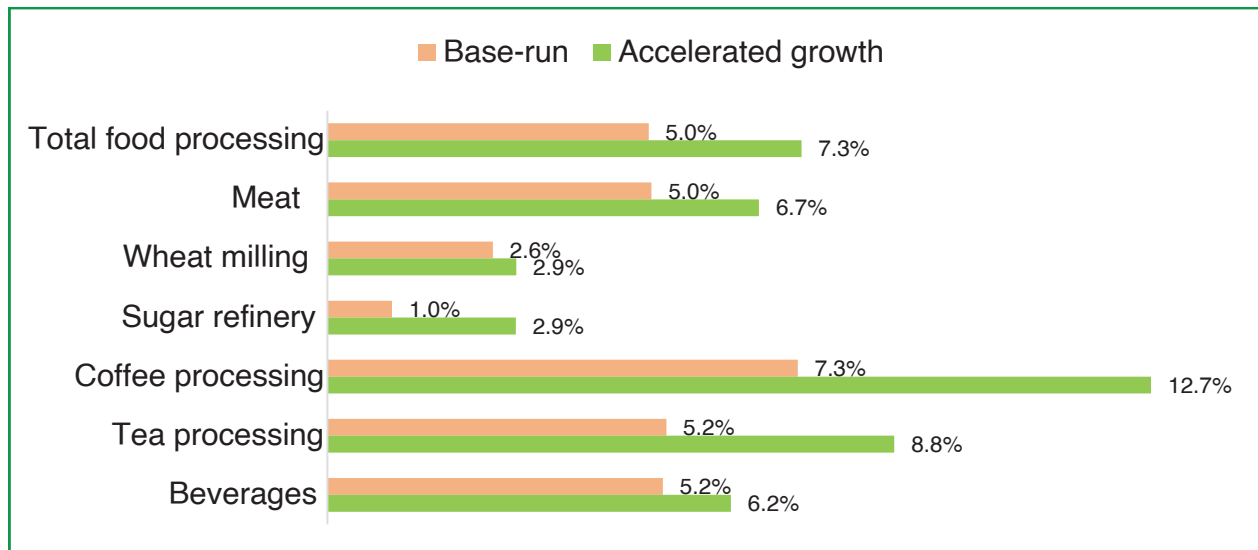
6.4.3 Value addition (food processing and other manufacturing)

Value addition in agriculture is critical for Kenya’s economy, as it transforms raw agricultural products into higher-value goods, thereby increasing farmers’ income and creating job opportunities. Value addition can help reduce postharvest losses, which are estimated to be between 20-50 per cent (FAO, 2021). By processing, packaging, or enhancing

agricultural products, farmers can extend the shelf life of their produce, access new markets, and improve product quality. This shift from selling raw commodities to value-added products can lead to increased profitability, sustainability, and resilience against market fluctuations. Moreover, value addition aligns with the government’s BETA plan to expand food production and create jobs, especially for the youth through agro-processing.

Figure 6.17 presents simulation results for the targeted products for processing. Total food processing average annual growth per year for the period 2023-2027 is expected to be 7.3 per cent under the BETA plan compared to 5.0 per cent under the business-as-usual scenario. Coffee processing, wheat milling, meat and meat products, sugar refining, and tea processing demonstrate higher growth acceleration under the BETA plan.

Figure 6.17: Average annual growth for food processing (2023-2027)



Source: Authors compilation from RIAPA Model

Table 6.7: Implication of implementing the BETA programmes on food processing

Commodity	Production (MT) - 2021	Business as usual (BAU) growth/year	BETA accelerated growth/year	Accelerated production (MT)/year	Percentage change
Meat (MT)	559,727.00	587,713.35	597,228.71	9,515.36	1.70
Tea processing	537,800.00	565,765.60	585,126.40	19,360.80	3.60
Coffee processing	34,500.00	37,018.50	38,881.50	1,863.00	5.40
Wheat milling	1,440,000.00	1,477,440.00	1,481,760.00	4,320.00	0.30
Sugar refining	7,100,000.00	7,171,000.00	7,305,900.00	134,900.00	1.90

Source: AFA and KNBS, calculation from RIAPA outputs

The impacts of the accelerated growth rates for food processing for various commodities are presented in Table 6.7. The BETA initiative such as the establishment of processing hubs and blending and branding of tea is likely to increase production by 3.6 per cent per year. Similarly, coffee and sugarcane productivity will grow by 5.4 per cent and 1.9 per cent per year respectively.

6.5 Key Messages and Recommendations

6.5.1 Key messages

- Successive governments have implemented various policies and strategies to transform the agriculture sector and increase productivity. The issues straining the sector and preventing the achievement of agricultural productivity growth have always been the same, as outlined in various policy documents. These issues are limited access to inputs, challenges of infrastructure and market access, agro-processing and value addition, and uncoordinated institutional and policy reforms. While there has been substantial achievement in some of these issues, no single policy document has been able to eliminate these bottlenecks.
- The agriculture sector's contribution to GDP has been declining over time, driven majorly by the effects of climate change due to reliance on rain-fed agriculture, overlaps in the implementation of policies, and institutional overlap hindering the achievement of desired results.
- Spending on agriculture as a percentage of total government spending has been below the 10 per cent proposed by the Malabo Declaration. Allocation of adequate funding to the agriculture sector is key in enabling investment in the supportive rural infrastructure such as storage facilities to reduce post harvest losses and wastage, timely input supply and distribution, and development of markets and value addition to increase outputs and productivity. The National Agricultural Value Chain Development (NAVCD) Project being undertaken and the initiatives in MTP IV, if fully implemented, will be able to transform the sector to increase productivity and ensure its full contribution to the economy.
- Labour productivity, the share of labour income, and the share of youth labour engaged in agriculture has been declining. This is majorly driven by slow sector growth, the shift of labour to other sectors of the economy, and disinterest by the youth to engage in agriculture. The transformation of agriculture is key to increasing productivity.
- The area under production for most food and cash crops has been declining,

driven by the economic transformation of agricultural land for infrastructure, slow expansion of areas under irrigation, and abandonment of production of some crops such as oil crops, cotton, among others.

6. Analysis of the implementation of various measures spelt out in the BETA, such as the provision of fertilizer, and investment in crop and livestock value chain shows that implementation of the measures will raise agricultural output and yields for various targeted crops. Furthermore, focus on value chain development will help increase value addition and output for the targeted crops such as oil crops, coffee, and tea.

6.5.2 Policy recommendations


To enhance agriculture productivity, the government needs to focus on the key drivers outlined below.

1. Timely and accessible intermediate inputs: Ensure timely procurement of seeds and fertilizer, monitor the distribution and access by farmers, and ensure the use and application by the farmers as per the requirements. There is a need to sensitize farmers on various elements of fertilizer use, such as the time of application, application rates, and the appropriate production process. Specifically, the commitment of various allocations for crop promotion, seed, and input supply, and farmer training needs to be actualized in coordination with the counties.
2. Achieve the Malabo commitment to government spending on agriculture: Generate and allocate adequate spending on agriculture from the national budget on agricultural-specific activities.

A deliberate action by the counties to allocate resources for the sector will be key in ensuring the achievement of the Malabo commitment for agriculture sector funding and ensuring agricultural transformation.

3. Reduce post harvest loss and wastage: Implement various agro-processing and value chain projects in MTP IV such as storage and cooling plants will be crucial in providing the required infrastructure for storage to increase outputs, reduce wastage, and increase productivity.
4. Uptake of livestock and crop insurance: Develop and implement crop and livestock insurance schemes to protect farmers from the vagaries of weather and ensure they can recover from failed rains.
5. Invest in human capital development: Revision of the curriculum to ensure Agriculture is made a compulsory subject in secondary schools. Furthermore, there is a need to facilitate training and monitor the supply and the requirement of various professionals in the agriculture sector, such as extension officers, plant and crop breeders, and other scientists to ensure adequate well-trained labour for the sector. This will help serve the farmers by facilitating farmer access to extension services and adoption of modern technology and innovations to increase farm productivity.
6. Support value chain development: Implement fully the proposed value chains for the prioritized crops in MTP IV to help farmers add value to their products and increase their incomes and productivity for the targeted crops. This is important for the country to help reduce the amount of food import bills incurred in the country.

DEVELOPING SKILLS FOR PRODUCTIVE AND FUTURE READY WORKFORCE



Kenya has invested substantially in skills development through the expansion of the education and training sector, the development of apprenticeship and internship programmes, and workplace training programmes. However, skills development is faced with inequality in access to training opportunities, low quality education outcomes, and low transition to tertiary education. In addition, low enrolment rates in priority areas related to the BETA pillars indicate a disconnect between skills development and national skills needs. The apprenticeship programmes offered in the informal sector suffer from structural limitations and inadequate standards. Workplace training faces financial costs borne by organizations. There is, therefore, a pressing need to reimagine and realign skills development to meet the national priorities and evolving skills demands. This includes mobilizing adequate funding through public-private partnerships for targeted scholarships, loans, and bursaries to students to pursue priority programmes; establishing the National Skills and Funding Council to oversee funding initiatives for supporting skills development; retooling workers in the labour market towards national priority areas, and through conditional exchange programmes; and allocating resources to enhance centres of excellence in areas such as dairy training, leather development, agricultural colleges, and medical colleges. Additionally, there is a need to effectively enforce the existing education policies to ensure no repetition, universal basic education, and 100 per cent transition. Equitable funding formulas for free primary and free day secondary education need to be enforced, and grassroot campaigns undertaken to encourage enrolment and retention of learners at all levels of education and training. Further, there is a need to strengthen the implementation of the Recognition of Prior Learning Policy by creating awareness of RPL and providing tax incentives for training. The government could foster industry-academia partnerships to address skills shortages and mismatches. Adequate financial resources need to be allocated to support the implementation of curriculum reforms in terms of human resources, enabling legal and institutional framework and infrastructure consistent with relevant courses.

7.1 Introduction

The development of relevant and quality skills is fundamental for enhanced productivity and economic growth (ILO and OECD, 2018; ILO, 2008; CEDEFOP, 2007). Countries with higher skill levels record higher worker productivity and faster and more resilient economic growth.

For a country to prosper, it requires adequate and appropriately skilled workers. Therefore, skills development must focus on adequacy, relevance, quality, and adaptability of the workforce. Governments need to invest in skills development, including expanding the education and training sector, establishing apprenticeship and internship programmes, implementing workplace training initiatives

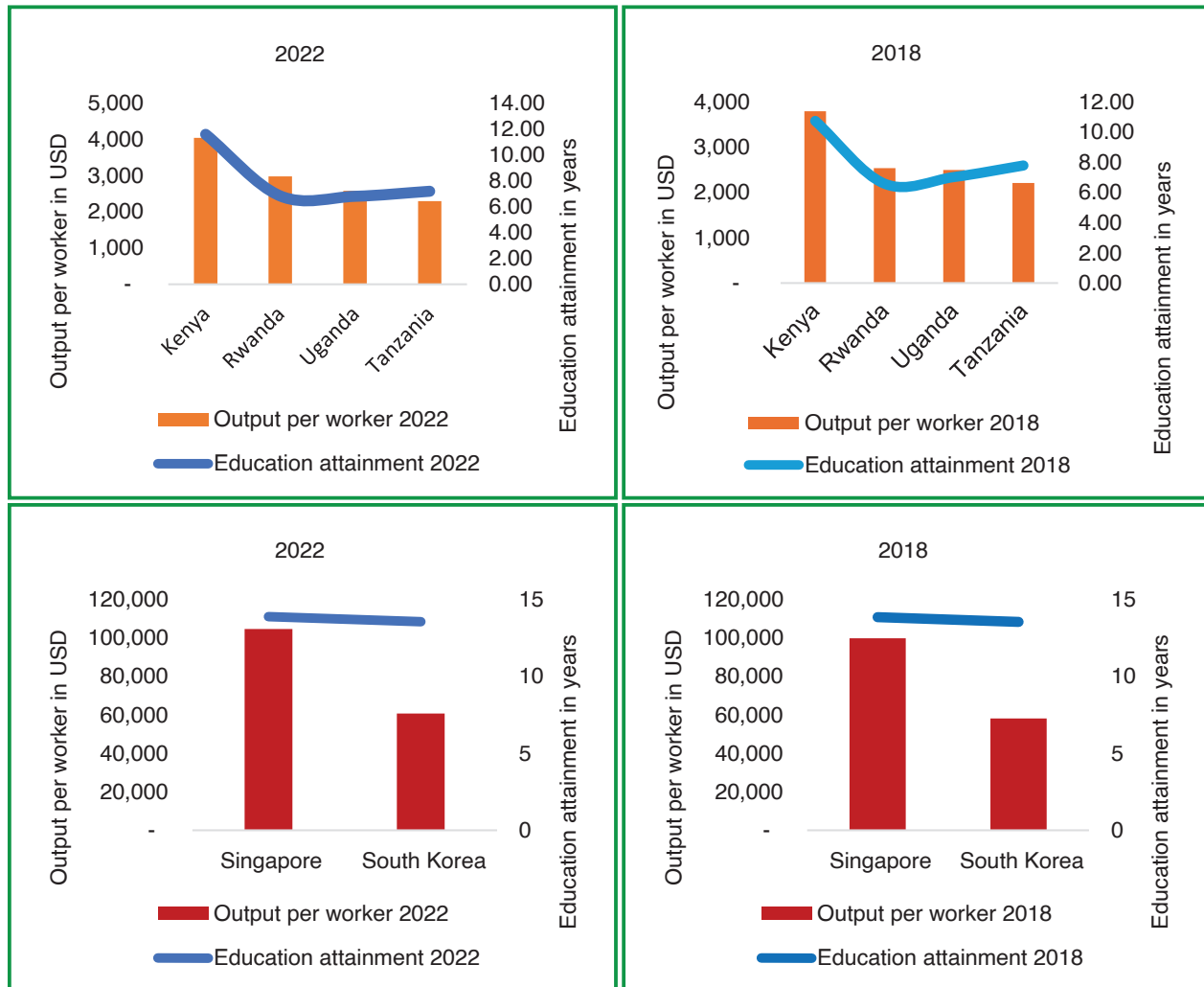
and lifelong learning to meet the demands of the economy, and keeping pace with changing skills needs. The key factors that influence skills development include technological changes, globalization, climate change, and demographic dynamics. These dynamics are reshaping labour markets, thus creating a need for developing adaptable and forward-looking skills.

Skills development is at the core of the national development agenda and is underpinned by the Kenya Vision 2030, which identifies skills development as a key foundation. In addition, the Bottom-up Economic Transformation Agenda (BETA) identifies skills development as a key input in the implementation of its five pillars: Agricultural transformation and inclusive growth; Transforming the MSMEs economy; Housing and settlement; Healthcare; and Digital superhighway and creative economy. These pillars highlight the essential skills needed across the diverse sectors to achieve the development objectives with economic transformation. In this regard, the government aims to establish a National Skills and Funding Council that amalgamates the Higher Education Loans Board (HELB), Kenya Universities and Colleges Central Placement Service (KUCCPS), Technical and Vocational Education and Training (TVET), and University Funding Board. The National Skills and Funding Council will be key in overseeing funding initiatives to support the four avenues of skills development in the country.

The country is faced with low labour productivity despite being ranked highest among the East African countries. The low productivity is attributed to inadequate technical skills (TIFA, 2017), weak work attitudes and ethics, inadequate adoption of technology, and skills

mismatch (Government of Kenya, 2022). Skills availability and access to training opportunities relevant to labour market needs are important factors for enabling productivity. There is a positive correlation between education attainment and productivity as shown in Figure 7.1. Kenya's investment in education and training has seen education attainment rise in years of schooling from 10.7 years in 2018 to 11.6 years in 2022, which has contributed to sustaining high output per worker, increasing from US\$ 3,778 to US\$ 4,059 in 2022. Singapore and South Korea have both invested significantly in education and training, resulting in high levels of education attainment for their populations. However, the productivity disparity between the two countries can be attributed to various factors, including differences in economic structure, industrial composition, innovation ecosystems, and labour market dynamics.

Kenya can enhance the implementation of BETA by learning from the successful strategies of aspirator and comparator countries to address its challenges of low labour productivity. Key lessons include adopting precision agriculture and sustainable practices and integrating large-scale farming techniques with smallholder inclusivity. Supporting MSMEs through finance and innovation hubs like Germany and India, implementing efficient public housing models, upgrading informal settlements and inclusive policies to ensure equitable development like Singapore and South Africa. Strengthening primary healthcare and digital health initiatives inspired by Cuba and Rwanda and lastly, investing in high-speed Internet infrastructure to support tech startups, and promote digital literacy to drive the digital economy like South Korea.

Figure 7.1: Output per worker and education attainment in 2018 and 2022


Data source: ILO Stats and World Bank (2018; 2022)

Note: Skills level is proxied by education attainment. Higher education levels suggest a more skilled workforce.

7.2 Status of Skills Development

Skills development is mainly achieved through education and training, apprenticeship and internship programmes, workplace training and learning, and lifelong learning programmes.

7.1.1 Education and training

In the Kenya, education is provided through formal and informal schooling. The evolution of

the educational curriculum mirrors the country's efforts to address the evolving needs of its people and the challenges of a rapidly changing world. From 1964 to 1985, the country adopted the 7-4-2-3 system, which comprised seven years of primary education, four years of lower secondary, two years of upper secondary, and three years of university education. In 1985, Kenya implemented the 8-4-4 system, which comprised eight years of primary education, four years of secondary education, and four

years of university education. In 2017, the country initiated another major reform by introducing the Competency-Based Curriculum (CBC), replacing the 8-4-4 system. The 2-6-3-3-3 system schooling system includes pre-primary school (2 years), primary school (6 years), junior school (3 years), senior school (3 years), and Technical and Vocational Education and Training (TVET), and University education (3 years). The pre-primary, primary, and secondary schooling level lay the foundation by providing fundamental literacy, numeracy, and cognitive skills essential for further learning and employment.

Access and participation at all levels of education are fundamental components of building an adequate skilled workforce for productivity. The government education and training initiatives include the implementation

of Free Primary Education (FPE) in 2003, Free Day Secondary Education (FDSE) in 2008, subsidized tertiary education, the 100 per cent transition policy in 2018, infrastructure development, establishment of low-cost boarding schools in ASALs in the 1970s, provision of sanitary towels in 2011, curriculum reforms in 2017, prior learning recognition, and rebranding efforts of technical and vocational education and training to ensure that no one is left behind. These initiatives have led to an increase in enrolment at all levels of education and training as presented in Table 7.1. The consistent increase in enrolment trends across all levels of education and training institutions signifies a favourable path towards the development of adequate skills, which in turn is poised to positively impact productivity levels in diverse sectors of the economy.

Table 7.1: Enrolment trends in education institutions (2018-2023) in numbers

Level of training	2018	2019	2020	2021	2022	2023
Pre-primary	3,390,545	2,738,587	2,832,897	2,845,265	2,868,000	2,885,636
Primary	10,542,500	10,072,040	10,170,065	10,285,063	10,364,153	10,241,000
Secondary	2,942,705	3,260,007	3,520,433	3,691,915	3,858,079	4,109,500
TVET institutions	359,852	430,598	451,205	503,798	562,499	642,726
Universities	519,462	509,468	546,699	562,066	562,925	579,380
Total enrolment	17,755,064	17,010,700	17,521,299	17,888,107	18,215,656	18,458,242

Data source: KNBS (2022; 2023; 2024), Economic Survey

The enrolments and retention for Special Needs Education (SNE) learners and marginalized groups in primary and secondary education have continued to increase due to government interventions through the disbursement of FPE and FDSE capitation, tuition top-up, and boarding subsidy grants, which increased the number of trainees enrolled in TVET and SNE institutions. The SNE institutions include Machakos Technical Training Institute (TTI) for the Blind; Karen TTI for the Deaf; Sikri TTI for the Deaf and Blind; and Nyangoma TTI for the Deaf. Enrolment in these institutions increased from 2,414 in 2019 to 3,805 in 2022.

Despite the gains made in access to education, the number of out-of-school children was still high at 21.9 per cent and 45.9 per cent for primary and secondary school levels, respectively, in 2020. For ASAL counties, this was at 28.1 per cent and 52.7 per cent for primary and secondary education levels, respectively, compared to the non-ASALs at 12.9 per cent and 34.9 per cent (see Annex Table A7.1). For instance, at the primary education level, the net enrolment rate (NER) was 78.1 per cent in 2020 (see Annex Table A7.2), indicating that 22 per cent of the expected learners are not in school and, therefore, a sizeable number

of learners are still missing in the formal skills development. At the secondary education level, the NER of 53.2 per cent implies that half of the school-going learners who are supposed to be in secondary education are missing this level of education.

On average, more than 40 per cent of learners who begin Grade one (1) do not progress to Form four (4), indicating a substantial dropout rate as evidenced by data presented in Table 7.2. Of the 2012-2023 cohort, learners joined Grade one (1) in 2012 and were expected to complete Form four (4) in 2023, assuming the no repetition policy and 100 per cent transition policy apply. However, only 58 per cent of this cohort completed Form four (4), implying wastage in education and training. This could be attributed to the increased rate of teenage pregnancies, high absenteeism of learners in day secondary education, and the motorcycle business being considered as an alternative to education.

Poverty also plays a critical role, as some families cannot afford the fees required for secondary education. Additionally, the distance to schools in rural areas often makes it challenging for students to attend school regularly. Gender disparities further exacerbate the problem, with girls more likely to drop out due to early marriages or cultural beliefs that favour boys' education. Poor academic performance can lead to disengagement and discouragement, prompting students to leave school. Lastly, the quality of education in some schools is lacking due to inadequate resources, unqualified teachers, and insufficient physical infrastructure, which collectively discourage students and contribute to higher dropout rates. Consequently, low completion rates pose a barrier to accessing higher education opportunities and hinder skills development.

Table 7.2: Tracing cohort completion from grade one to Form four, 2009-2023

Cohort from grade one to form four	Grade one enrolment	Number completed grade eight	Number completed form four	Completion rate at grade eight (%)	Completion rate at form four(%)
Completion for 2009 to 2020	1,381,100	952,021	743,253	69%	54%
Completion for 2010 to 2021	1,468,500	1,003,446	822,501	68%	56%
Completion for 2011 to 2022	1,503,900	1,060,710	876,674	71%	58%
Completion for 2012 to 2023	1,542,800	1,088,989	899,453	71%	58%

Data source: Authors' compilation using data from KNBS (Various), Economic Survey

There is a low transition rate from primary to secondary education and from secondary to tertiary education, despite the government policy advocating for 100 per cent transition. With only 78.6 per cent of students transitioning from primary to secondary education in 2022, a substantial portion (22%) of the population remains underserved by formal education systems (MOE, 2023; National Education Sector Strategic Plan, 2023-2027). This

gap in educational attainment inhibits the development of essential skills needed for the workforce. Moreover, the low transition rate from secondary to tertiary education, at 32 per cent in 2022, further exacerbates the issue by limiting access to higher education and specialized skills development opportunities. As a result, the workforce may lack the necessary qualifications and competencies demanded by the labour market, thus impacting productivity.

At basic education, which includes pre-primary, primary, and secondary school levels, the Gender Parity Index (GPI) varies across counties (Annex Table A7.3). GPI was low in the ASALs, with males having an edge over females. The overall GPI at pre-primary was 0.97 in 2020, which was within the acceptable range of between 0.97 and 1.03, implying that there was gender parity in access to pre-primary education in 2020. There were 15 counties that had not met the desirable parity at the pre-primary education level, while 22 counties had achieved gender parity in access to pre-primary education. Isiolo County had gender disparity in favour of girls with a GPI of 1.05, while Mandera, Wajir, Garissa, Tana River, Samburu and Lamu had GPI of 0.66, 0.80, 0.81, 0.90, 0.90 and 0.93, respectively, implying gender disparities in favour of boys.

At the primary level, GPI in ASAL counties of Mandera, Garissa, Wajir, and Turkana was lower, implying that there was gender disparity in favour of boys while Isiolo, although being an ASAL county, had a gender disparity of 1.08 in favour of girls. GPI at the secondary school level, as of 2020, shows that 16 counties had achieved gender parity at the secondary education level. Further, there was gender disparity in favour of girls in 18 counties, including Vihiga (1.2), Elgeyo Marakwet (1.12), Machakos (1.11), Meru (1.11), and Kisumu (1.1). Gender parity was yet to be achieved in 13 counties, where the disparity was in favour of

boys, including, among others, Mandera (0.54), Wajir (0.58), Turkana (0.62), Garissa (0.68), and Samburu (0.74). The GPI in access to TVET was at 0.86 against a desired GPI of 1.0, with males having an edge over females. This is primarily due to gender bias and stereotypes, and regional disparities in the distribution and equipping of TVET institutions. The GPI at the university level is 0.68, with male students having an edge over female students.

At the tertiary level, the combined enrolment for both TVET and university accounted for a 15 per cent gross enrolment rate compared to the global average of 36 per cent in 2022. These low enrolments could imply a potential gap in the acquisition of higher skill levels critical for various industries and sectors, suggesting a shortage of skilled professionals such as engineering, technology, healthcare, and other specialized areas. From Table 7.3, data shows that over half (55%) of learners are enrolled in education, services, business, and arts and humanities-related courses compared to 24 per cent in professions of agriculture, ICT, health and engineering, manufacturing and construction, which comprise of national priority areas under BETA. Further, the BETA sectors such as health, agriculture, ICT, manufacturing, and construction that demand skills have very low enrolment rates of between 5.0 per cent and 7.0 per cent of the total enrolments (Table 7.3).

Table 7.3: Enrolment in universities by field of education and training in 2022

Cluster	Doctorate	Masters	Postgraduate	Bachelors	Total	Share of total
Agriculture, forestry, fisheries and veterinary	1,549	1,313	112	25,697	28,671	5.33%
Health and welfare	1,270	4,819	48	30,531	36,668	6.81%
Engineering, manufacturing and construction	344	1,014	0	27,911	29,269	5.44%
Information and communication technology	261	2,682	0	31,488	34,431	6.40%
Arts and humanities	1,390	4,382	36	30,211	36,019	6.69%
Business and administration	7,603	24,889	170	90,930	123,592	22.96%

Law	24	724	2	6,478	7,228	1.34%
Education	2,510	9,985	887	107,404	120,786	22.44%
Services	275	508	97	9,531	10,411	1.93%
Natural science, mathematics and statistics	2,527	4,619	42	42,416	49,604	9.21%
Social science, journalism and information	2,688	6,752	22	52,193	61,655	11.45%

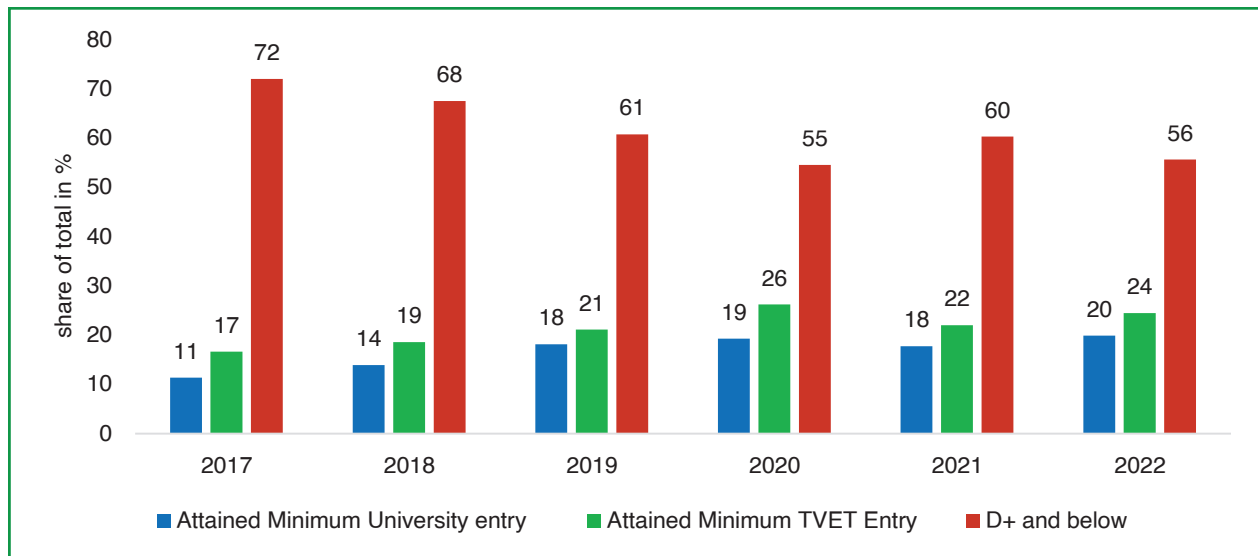
Data source: Commission for University Education (CUE) 2022

Note: Learners pursuing diploma have been excluded. University programmes are classified into ten (10) clusters adapted from the International Standard Classification of Education (ISCED)

Performance in national examinations, which is a key measure of quality, is low. In 2022, out of those who sat for the Kenya Certificate of Secondary Education, only 20 per cent attained the minimum university entry qualification (C+ and above), implying that majority of the youth were not qualified to join university. The number of candidates scoring a mean grade of C and C-

which is the minimum for qualifying for diploma entry at TVET, was 24 per cent in 2022. The percentage of candidates scoring between D+ and below who qualify for certificate level and artisan courses at vocational technical training centres was 56 per cent in 2022.

Figure 7.2: KCSE mean grade, 2017-2022



Data source: KNBS (Various), Economic Survey

Further, the quality and relevance of education, training, and research is affected by inadequate human resources. The staffing gap in basic public learning institutions still prevails because of the 100 per cent transition and implementation of Competency-Based

Curriculum (CBC). In TVET, the trainer gap is 6,729 trainers while at universities, staffing is below optimal in specialized fields such as engineering, medicine, and law. The education sector introduced the Teacher Professional Development (TPD) programme to enhance

professionalism in the teaching service for delivery of CBC, but there has been resistance partly because of the cost implication to the teacher to pay for the course, and additional commitment required in terms of time.

The education sector has fully embraced the rollout of the CBC at the basic education level, and Competence-Based Education and Training (CBET) curriculum at the tertiary level since 2017. These are the main policy tools to respond to skill needs and emerging skills gaps. These new curricula are expected to address skills mismatch between training institutions and the job market. Through hands-on, experiential learning approaches, students are empowered to develop real-world skills that directly translate to their chosen fields. Moreover, the flexibility offered by these curricula allows learners to pursue learning pathways tailored to their career aspirations. However, to ensure the success of CBC and CBET implementation, a huge investment is required in terms of infrastructure, human resources, provision and development of learning materials, capacity building, advocacy, and awareness creation. There is a need to increase advocacy, awareness, and stakeholder engagement for the smooth implementation of curriculum and assessment reforms. While there are policy provisions under FPE and the Basic Education Act (2012) to provide free and compulsory pre-primary education for all learners at the basic education level, the policy is yet to be enforced at pre-primary education, as education at this level is funded by parents and households. Additionally, there is a need for the FPE funding formula to be revised to ensure it addresses the equity aspect, especially for poor populations.

7.2.2 Apprenticeship and internship programmes

Apprenticeship and internship programmes serve as vital pathways for skills development, offering individuals practical training opportunities to enhance their employability and career prospects. These programmes focus on cultivating a diverse set of technical and soft

skills essential for success in the workplace. Skills developed through apprenticeship and internship include technical skills specific to industry and soft skills such as communication, teamwork, and problem-solving. These programmes enable participants to acquire practical skills and expertise directly applicable to their chosen field, preparing them for entry-level positions and career advancement opportunities. Similarly, internship programmes provide students and graduates with practical experience and skills relevant to their academic disciplines, spanning fields such as business administration, information technology, engineering, agriculture, and healthcare.

Various types of formal and informal apprenticeship arrangements are currently in operation within the country. Formal apprenticeships are commonly conducted within workplace settings and are supplemented with classroom-based learning sessions. These structured programmes encompass apprenticeships necessary for the fulfilment of TVET requirements, and higher education training, which may receive financial support from employers, educational institutions, or governmental bodies.

The country is implementing the national apprenticeship programme and dual training in TVET to improve the occupational skills and competencies of out-of-school youth. The youth are trained on-the-job by master craft persons for a period of three (3) months to one (1) year. The national apprenticeship programme was piloted at Rivatex, Moi University, in the field of textiles, specifically spinning, weaving, finishing, tailoring, and textile engineering. The dual training provides an opportunity for learners to be attached to industry 30 per cent of their training course time while 70 per cent of their training takes place in the classroom.

Conversely, informal apprenticeships involve apprentices acquiring skills through hands-on experience alongside seasoned artisans within informal business ventures. Informal apprenticeship can be defined as

an informal system of skills transfer from a master craftsperson to a novice apprentice. The apprentice gains proficiency through observation, emulation, and iterative practice alongside the master craftsperson. The transfer of knowledge and skills is based on an agreement (written or verbal) between master craftsperson and apprentice in line with local community norms and practices, and the training is not regulated by the law of a country.

In the informal economy (which accounts for 83% of total employment), apprenticeships are the main means of learning skills and acquiring competencies for employment. There have been several strategies, such as the introduction of a training programme to upgrade the skills of crafts persons, implementation of Recognition of Prior Learning (RPL)²¹ to recognize skills acquired through informal training as a way of connecting formal and informal systems and improving livelihoods. Collectively, these policy aspects create an enabling environment for the effective implementation and scaling up of apprenticeship programmes, thereby contributing to the development of a skilled and competitive workforce capable of driving innovation and sustainable development in Kenya.

Despite these efforts, informal apprenticeships have several shortcomings. First, they lack systematic organization and structure, resulting in significant variations in the quality of instruction provided by skilled crafts persons. Secondly, there are limited training standards and effective quality assurance mechanisms, exacerbating inconsistencies in the training process. Thirdly, inadequate working conditions and occupational safety measures further compound the challenges faced by apprentices. Additionally, apprentices often lack comprehensive theoretical knowledge to complement their practical skills, and the informal nature of agreements between crafts persons and apprentices making enforcement difficult, potentially leading to exploitation.

²¹ Recognition of Prior Learning (RPL) is a process used to identify and certify candidate's competencies regardless of when, where, and how they acquired the skills against prescribed standards or learning outcomes.

The effectiveness of apprenticeship and internship programmes is underpinned by a structured system involving collaboration among multiple stakeholders, including government agencies, educational institutions, industry partners, and training providers. Accredited technical and vocational training institutions typically deliver apprenticeship programmes, while universities, colleges, and private sector organizations facilitate internship placements.

The Public Service Commission (PSC) internship programme in Kenya is structured to offer planned and systematic work experience to graduates for a specific duration, as outlined in the Internship Policy and Guidelines for the Public Service (2016). The programme aims to equip interns with practical skills and experience, enhancing their employability in the job market. Upon successful completion of the 12-month internship, interns are awarded a certificate as proof of their participation and skills acquired. Interns are deployed across various Ministries, State Departments, corporations, and public universities, allowing them to gain hands-on experience in their respective fields. Employers have established training programmes tailored for fresh graduates, acknowledging that fulfilling the government's commitment to paid internships could enhance the skilled labour force. Additionally, 33 per cent of employers have taken advantage of the government tax rebate incentive offered for hiring 10 fresh graduates as interns for a period ranging from six (6) to 12 months.

In addition, the locum programmes for health professionals provide opportunities for temporary or part-time work arrangements, allowing healthcare professionals to fill in for absent colleagues or supplement their income while maintaining flexibility in their schedules. This is supported by the Medical Practitioners and Dentists Act (2012). The Teachers Service Commission Internship Policy requires teachers employed on internship terms to serve for a full two years before becoming eligible for permanent and pensionable employment.

The Presidential Working Party on Education Reform (2022) recommended a mandatory three-month community service programme for graduates of senior school before joining tertiary institutions, and a further nine months of mandatory community service after completion of tertiary education. A certificate of compliance to the community service is to be issued as proof before admission into the world of work. This has been incorporated in the MTP IV.

7.2.3 Workplace training and learning

Workplace training and learning initiatives play a pivotal role in fostering continuous skill development and professional growth among employees. These programmes are designed to equip individuals with the knowledge, competencies, and abilities required to thrive in their respective roles and contribute effectively to organizational success. Workplace training encompasses a wide range of activities, including on-the-job training, workshops, seminars, mentoring, coaching, and e-learning, tailored to meet the diverse learning needs and preferences of employees across various industries and sectors.

The types of skills developed through workplace training and learning initiatives are diverse, covering technical, managerial, and interpersonal competencies essential for job performance and career advancement. Technical skills training focuses on enhancing proficiency in specific tasks, processes, and technologies relevant to employees' roles. Managerial skills development aims to strengthen leadership, decision-making, problem-solving, and project management capabilities, empowering employees to effectively manage teams, resources, and projects. Interpersonal skills training, including communication, teamwork, conflict resolution, and emotional intelligence, cultivates positive work relationships, collaboration, and effective communication channels within organizations.

The effectiveness of workplace training and learning initiatives hinges on the establishment

of supportive systems and mechanisms within organizations to facilitate continuous learning and skill development. The Employment Act 2007 outlines provisions related to training and skills development, including the requirement for employers to provide employees with opportunities for skills upgrading and career advancement. Employers play a critical role in creating a conducive learning environment by investing in training infrastructure, resources, and technologies, and fostering a culture of learning and innovation.

The government's training policy focuses on consistently enhancing the essential competencies, knowledge, skills, and attitudes of public servants to address performance gaps effectively (Public Service Code of Regulations). Emphasis is placed on short, skill-oriented training programmes. All public servants are required to undergo a minimum of five days of training annually, with newly recruited or transferred officers mandated to receive induction within three months of joining their respective organizations. Furthermore, training initiatives must align closely with the identified training needs of Ministries, Departments, and Agencies (MDAs).

In this regard, MDAs have invested in the continuous professional development of their employees within their respective job cadres. These programmes often involve financing employees' participation in professional training courses, workshops, and certifications relevant to their job roles and career progression. This approach reflects a commitment to enhance employee skills, knowledge, and competencies, thereby increasing productivity, job satisfaction, and organizational effectiveness.

Organizations often develop training policies, procedures, and guidelines to standardize training practices, ensure consistency, and promote accountability. Additionally, employee performance appraisal systems incorporate training and development goals and objectives to align individual learning needs with organizational priorities and objectives.

However, the challenge of budgetary constraints presents a major obstacle to implementing comprehensive workplace training programmes. Organizations may struggle to allocate sufficient funds for training initiatives, particularly in the face of competing priorities and limited financial resources.

Sectors characterized by high labour mobility face unique challenges related to employee attrition and turnover. Constant turnover of skilled workers can disrupt training efforts, leading to knowledge gaps and continuity issues within organizations. Retaining trained employees becomes increasingly challenging in sectors where job opportunities are abundant, necessitating strategies for talent retention and succession planning to mitigate the negative impacts of high attrition rates on workplace training initiatives. Some of the strategies for retaining staff include bonding agreements, recognition, and rewards, and offering attractive compensation and benefits packages.

Identifying the precise areas where employees lack the necessary skills or knowledge can be challenging due to inadequate data, especially in rapidly evolving industries where job requirements change frequently. Without accurately identifying these gaps, training programmes may fail to effectively meet the needs of employees and the organization, leading to inefficiencies and decreased productivity.

Time constraints pose challenges to workplace training by limiting the availability of employees for training activities. Busy work schedules, tight deadlines, and operational demands may make it difficult for employees to dedicate time to training. Balancing training commitments with regular job responsibilities can be a logistical challenge, requiring careful planning and coordination to minimize disruptions to workflow while maximizing the effectiveness of training interventions.

The National Industrial Training Authority (NITA) is mandated to regulate and facilitate quality

industrial training for enhanced productivity. The country, through NITA, is implementing the National Skills Development Policy (2020), which envisages promoting and supporting labour market-responsive education and training to enhance employment, economic development, and environmental sustainability. The policy provides for the establishment of the Industrial Training Levy Fund to serve employers through continuous skills upgrading of employees, who in turn improve their output. However, there are challenges related to funding, which can affect NITA's effectiveness in overseeing and promoting industrial training and skills development initiatives across the country.

The guidelines on the bond for training public servants (2018) provide for bonding employees for a period of obligatory service within the public service so that the Public Service can benefit adequately from the knowledge, skills, competencies, and positive attitudes acquired by employees who have undergone training. The training bonds contain a clause that offers the employee an option to repay the bond value (the sum expended in training the employee) where such an employee desires to leave the service of the employer, before the time specified in the bond or undertaking.

7.2.4 Lifelong learning

Through structured curricula and pedagogical approaches, schools and universities cultivate not only subject-specific knowledge but also transferable skills such as problem-solving, communication, and collaboration, which are vital in today's dynamic workforce.

Lifelong learning initiatives serve as foundational pillars for personal and professional development, empowering individuals to acquire new knowledge, skills, and competencies throughout their lives. Lifelong learning encompasses a broad spectrum of formal, non-formal, and informal learning opportunities designed to meet the diverse learning needs and aspirations of

individuals across various stages of life and career trajectories. From early childhood education to adult education and professional training, lifelong learning initiatives aim to foster continuous growth, adaptability, and resilience in an ever-changing world.

The types of skills developed through lifelong learning initiatives are diverse and encompass a wide range of domains, including academic, vocational, technical, traditional, and life skills. Lifelong learning programmes provide individuals with opportunities to acquire foundational literacy and numeracy skills, enhance their critical thinking, problem-solving, and decision-making abilities, and develop practical competencies relevant to their personal and professional lives. Additionally, lifelong learning fosters the cultivation of socio-emotional skills such as empathy, resilience, adaptability, and cultural competence, enabling individuals to navigate complex social dynamics and contribute positively to their communities and societies.

The effectiveness of lifelong learning initiatives depends on the availability of accessible, inclusive, and quality learning opportunities tailored to the diverse needs and contexts of learners. Formal education institutions, including schools, colleges, and universities, play a central role in delivering lifelong learning programmes, providing structured curricula, learning resources, and academic support services to learners of all ages. Non-formal education providers, such as community-based organizations, vocational training centres, and adult education programmes offer flexible learning pathways and alternative approaches to learning for individuals who may face barriers to traditional education. Informal learning settings, including workplaces, community spaces, and online platforms, serve as valuable arenas for experiential learning, knowledge sharing, and skills acquisition outside formal educational contexts.

Policy support for lifelong learning is reflected in national education and training policies,

and initiatives aimed at promoting equitable access to quality education and lifelong learning opportunities for all. The Basic Education Act (2013) and the Technical and Vocational Education and Training Act (2013) provide a legal framework for the provision of education and training services, including lifelong learning programmes. The National Education Sector Plan (2023-2027) outlines strategic priorities and interventions for improving education access, quality, and relevance across all levels of education. Furthermore, government-led initiatives such as the Kenya Institute of Curriculum Development (KICD) and the Kenya National Qualifications Authority (KNQA) support curriculum development, accreditation, and quality assurance processes to enhance the effectiveness and relevance of lifelong learning programmes.

The 97th Session of the International Labour Conference in 2008 emphasized a comprehensive approach to skills development, including lifelong learning from early education to continuous skills enhancement for workers and entrepreneurs. It stresses the importance of core skills such as literacy, numeracy, and problem-solving, which are essential for adaptability. Higher-level skills are vital for accessing high-quality jobs. The portability of skills, starting with core skills, enables workers to apply their expertise in different sectors. Additionally, the system emphasizes the codification and standardization of skills for easy recognition across labour markets. Ultimately, employability hinges on core skills, education access, training opportunities, motivation, and the ability to seize career prospects (ILO, 2008).

7.3 Skills Demand Status in Kenya

In the skills forecast, skills are categorized based on the highest level of qualification that individuals in employment hold. This classification follows the official International Standard Classification of Education (ISCED) framework, which classifies skills as high level, medium level, and low level. This classification

provides a structured way to assess the educational qualifications of the workforce.

Borrowing from ISCED, Kenya has developed the occupational skills requirements and categorized them into four levels (Table 7.4) as prescribed in the Kenya Standard Classification of Occupations 2022 (KeSCO-2022). Certain occupational groups, such as professionals, typically demand high-level skills, given the specialized knowledge and expertise needed

for these roles. Conversely, other occupational groups such as elementary positions generally require only basic skills, aligning with their more straightforward job requirements. This connection between educational qualifications and occupational demands is crucial for understanding the skills composition of the workforce, identifying potential gaps, and tailoring educational and training programmes to meet the skills needs of various sectors.

Table 7.4: Description of the skill levels

Skill level	Description
1 st skill level	Primary education level leading to a certificate of primary education qualification or basic skills/skills for life. Primary education serves as a foundation for future skill development.
2 nd skill level	Secondary education qualification. Secondary education builds upon the primary level, providing a broader set of skills.
3 rd skill level	Vocational education and training qualification (diploma and/or certificate). Vocational education and training is essential for sectors that require practical and specialized skills.
4 th skill level	Higher education includes undergraduate and postgraduate degrees or equivalent. Occupations demanding skills at the 4 th level require a highly educated and specialized workforce.

Data source: KNOCS 2000 revised to KeSCO-2022

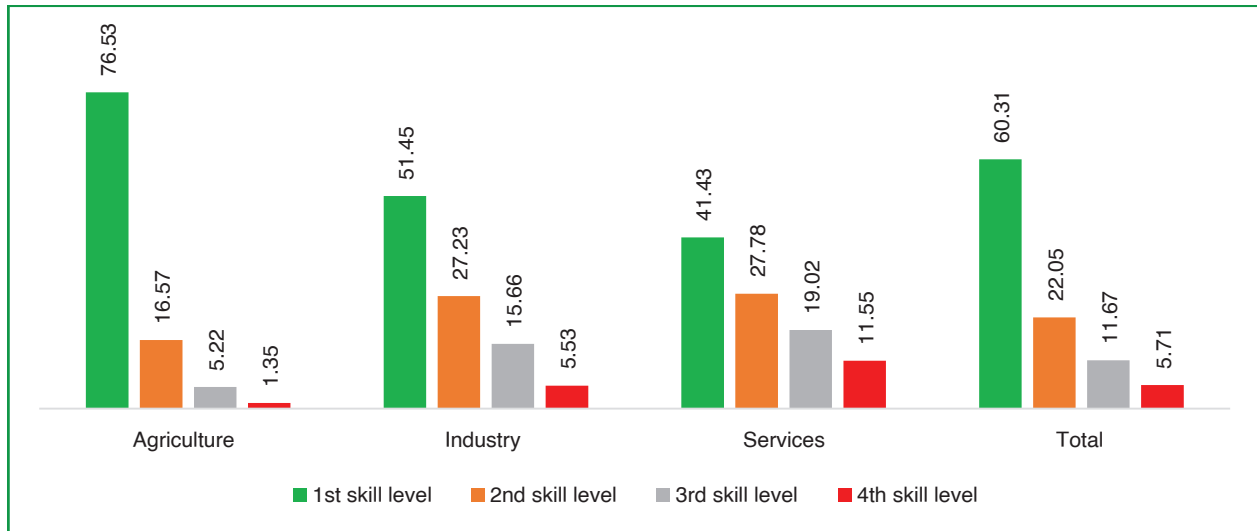
In the agriculture sector, most (76.53%) of the workforce has skills at the 1st skill level, indicating that they have primary education qualifications. However, there is a need for a smaller but significant portion of the workforce (Agricultural Equipment Operators) to be developed with more advanced skills, particularly in the areas of technology, research, and management.

The industry sector has a relatively balanced distribution of skills across different levels. This reflects the diverse nature of industrial activities, which may require a range of skill sets. Half of the workforce in the industry sector possesses skills at the primary level qualification. However, the presence of a smaller percentage of workers with skills at the 3rd skills level (15.66%) and 4th skill level (5.53%) in the industry sector indicates the demand for specialized expertise in this sector. A low proportion of advanced

skill levels can indeed be a contributing factor to the lower productivity in the industrial sector within the country. Advanced skills, often associated with the 3rd and 4th skill levels, are crucial for driving productivity, especially in industries where technological advancements and innovation play a significant role. To enhance productivity in Kenya, investment in education and training programmes that focus on developing advanced skills in this sector is crucial.

The services sector, including areas such as hospitality, finance, and healthcare, exhibits a relatively even distribution of skill levels, which reflects the skills composition within the services sector, with most of the workforce possessing skills at the 1st and 2nd skills levels. This sector relies on a mix of basic, intermediate, and advanced skills.

Figure 7.3: Sectoral skills demand status in Kenya (%), 2021



Data source: KNBS (2021), Kenya Continuous Household Survey

7.3.1 Health sector

The health pillar under BETA prioritizes the development of the pharmaceutical manufacturing industry with a target of making Kenya a regional pharmaceutical manufacturing hub. In this regard, a skilled health workforce is fundamental to attaining the national development goals. The health workforce includes those that provide technical health services such as physicians, doctors, nurses, midwives, and clinical officers, and those that support the health services such as hospital managers, and ambulance drivers, among others. Based on the KeSCO classification, most of the occupations in the health sector require 3rd and 4th skill levels.

As presented in Table 7.5, most of the health professionals' workforce have 3rd skill level (46.9%) and 4th skill level (42.91%), underlining the specialization and expertise required within this group. Health professionals include medical doctors, medical research officers, dentists,

veterinarians, veterinary research officers, and pharmacists. The nursing and mid-wife occupational group demonstrates a significant 80.42 per cent of professionals operating at the 3rd skill level.

Generally, the health sector's skills distribution indicates that a considerable percentage of the workforce operates at the 3rd skill level, at 65.70 per cent of the total workforce within the sector. This emphasizes the paramount importance of specialized skills and qualifications within the health sector, aligning with the critical nature of healthcare services.

Additionally, the sector demonstrates a moderate presence at the 4th skill level, with 28.63 per cent of the workforce holding advanced degrees or equivalent qualifications. Conversely, the distribution at the 1st and 2nd skill levels is relatively limited, signifying the advanced nature of the sector's roles and the demand for specialized training and education.

Table 7.5: Skills distribution status in the health sector (%)

Health Sector	1 st skill level	2 nd skill level	3 rd skill level	4 th skill level
Health professionals	6.34	3.84	46.90	42.91
Nursing and mid-wife	-	2.13	80.42	17.45
Other associate medical, nursing and nutrition workers	11.08	4.99	66.62	17.3
Total as a share (%)	2.78%	2.88%	65.70%	28.63%

Data source: Authors' construction using Kenya Continuous Household Survey data, 2021.

Note: Computation of skill levels (for example, 1st skill level) is as a share of the total.

Based on WHO norms, the minimum SDG index threshold of skilled health professionals (doctors, nurses and midwives) is 4.45 per 1000 population.²² In Kenya, the technical health workforce for 2021 was 85,851 skilled health professionals against the required threshold of 222,500 based on WHO norms (Figure 7.4).

²² Health workforce requirements for universal health coverage and the Sustainable Development Goals. (Human Resources for Health Observer, 17). <https://iris.who.int/bitstream/handle/10665/250330/9789241511407-?sequence=1>

Thus, it is estimated that an additional 136,649 (an equivalent of 61%) will be required to bridge the gap. The shortage and high variability in the distribution of healthcare workers hinder the achievement of Kenya's health outputs and outcomes. This calls for strengthening the health workforce through human capital development to ensure everyone has access to a qualified health worker to achieve the prioritized national health goals.

Figure 7.4: Skills gap for health workforce in Kenya in 2021

Data source: Authors' construction using Kenya Continuous Household Survey data, 2021

7.3.2 Agriculture, forestry, and fishing

Agriculture is an important sector in the economy, with a majority of the people depending directly or indirectly on it for their livelihoods. Agriculture accounts for 21.8 per cent of GDP and employs a third of the national labour force (KNBS, 2024). Given its importance, the performance of the sector is reflected in the performance of the whole economy. Furthermore, the importance of the sector has been emphasized in the national development agenda and priorities as articulated in the Kenya Vision 2030 and the BETA 2023-2027.

The majority of the workforce within the field crop, vegetable, and horticultural farm workers sub-group operate with the 1st skills level, representing 77.29 per cent of the total workforce. This underscores the prevalence of individuals with primary education qualifications engaged in field and horticultural work. The poultry, dairy, and livestock producers sub-group indicate that 76.16 per cent of the workforce operates at the 1st skill level and

11.73 per cent at the 2nd skill level. The crop and animal producers sub-group indicate that 72.39 per cent of the workforce operates with 1st skill level, emphasizing the need for basic agricultural knowledge.

The agriculturalists sub-group has a distinct skills distribution, with 61.33 per cent of professionals at the 4th skills level, reflecting the demand for high-level expertise in certain agricultural professions due to the advanced nature of their roles. Agriculturalists and related professionals conduct research, improve or develop concepts, theories, and operational methods, and apply scientific knowledge relating to crop husbandry. They include agriculturalists, horticulturists, forestry scientists, and soil scientists.

With the increasing modernization of agriculture, skills related to agriculture technology, such as precision farming, agricultural data analysis, sustainable farming practices, value addition, digital marketing, and mechanization are expected to play a vital role in the sector.

Table 7.6: Selected occupational skills level status in the agriculture sector in 2021

Agriculture Sector	1 st skill level	2 nd skill level	3 rd skill level	4 th skill level
Field crop, vegetable, and horticultural farm workers	77.29%	15.24%	6.26%	1.09%
Poultry, dairy, and livestock producers	76.16%	11.73%	8.32%	2.04%
Crop and animal producers	72.39%	19.91%	5.97%	1.49%
Agriculturalists and related professionals	17.6%	11.68%	9.4%	61.33%
Total	73.94%	17.87%	6.25%	1.61%

Source: Authors' construction using Kenya Continuous Household Survey data, 2021

Note: Computation of skill level (for example, 1st skill level) is as a share of the total.

7.3.3 Manufacturing

The data reveals that within the manufacturing labourers' group, a significant proportion of the workforce, 35.31 per cent, possesses skills at the 1st skill level, signifying a substantial reliance on individuals with basic qualifications in this category (Table 7.7). The 2nd skill level accounts for 51.31 per cent of the workforce,

indicating a considerable presence of individuals with more specialized skills. Additionally, 11.38 per cent operate at the 3rd skill level, emphasizing the demand for specific competencies within this group. The 4th skill level is relatively low, constituting only 2.0 per cent of the manufacturing labourer's workforce. This demonstrates that the sector mainly relies on individuals with lower to intermediate skill

levels for their labour-intensive roles. This is an indication of low productivity, given the sector's demand for highly advanced skills.

Production and related engineers depict a different skills distribution. Under this category, 56.84 per cent of the workforce operates at the 1st skill level, indicating the importance of

basic qualifications within this group. Notably, this group does not have any representation at the 2nd skill level, highlighting the unique and specialized nature of their roles. Instead, the 3rd skill level is entirely comprised of 43.16 per cent of the workforce, underlining the advanced skills and expertise required for engineering positions within the manufacturing sector.

Table 7.7: Selected occupational skills level status for the manufacturing sector in 2021 (%)

	1st skills level	2nd skills level	3rd skills level	4th skills level	Total
Manufacturing labourers	35.31%	51.31%	11.38%	2.00%	100%
Production and related engineers	56.84%	-	43.16%	-	100%
Total share	35.72%	50.34%	11.98%	1.96%	100%

Data source: Authors' construction using Kenya Continuous Household Survey data, 2021.

Note: Computation of skill level (for example, 1st skill level) is as a share of the total.

7.3.4 Information and communication technology (ICT)

In Kenya, 18.4 per cent of all formal sector employment is in occupations with high ICT intensity, indicating a significant shift towards jobs that heavily rely on digital technologies (WEF, 2018). The country has experienced phenomenal growth as a technology hub in Africa, including IT skills in software development, data analysis, digital marketing, fintech, and digital learning. Kenya also boasts of quality ICT infrastructure and access to Internet broadband that has led to the launch of ICD innovation hubs, government investments

in the Konza Technopolis, and the launch of the Open University of Kenya. The demand for digital skills is expected to be on the rise and calls for quality education and training to supply both high-end ICT experts and the general knowledge required for the application of ICT in the workplace.

It is important to highlight that there is a shortage of skilled individuals for all these occupations across various age cohorts, as indicated in Table 7.8. This calls for the urgent need for skills development and training programmes to address the skills gap in this critical sector.

Table 7.8: Skills gap analysis for occupations in ICT (years) in 2021

Occupation	Modal years of schooling (O*NET)	Skills gaps			
		15-19	20-24	25-29	30-34
Computer science teachers, post-secondary	18	-10	-6	-10	-10
Software developers, systems software	16	-8	-4	-8	-8
Computer user support specialists	16	-8	-4	-8	-8
Network and computer systems administrators	16	-8	-4	-8	-8
Computer systems analysts	16	-8	-4	-8	-8
Information security analysts	16	-8	-4	-8	-8

Computer network support specialists	16	-8	-4	-8	-8
Computer programmers	16	-8	-4	-8	-8
Software developers, applications	16	-8	-4	-8	-8
Bioinformatics scientists	16	-8	-4	-8	-8
Web administrators	16	-8	-4	-8	-8
Computer systems engineers/ architects	16	-8	-4	-8	-8

Source: Authors' construction using Kenya Continuous Household Survey data, 2021, and O*NET data

Occupations within the ICT sector necessitate high-level skills, with the majority falling under the 4th skill level as presented in Table 7.9. Majority of computer programmers possess a 4th skill level. Similarly, most computer systems engineers possess 3rd skill level.

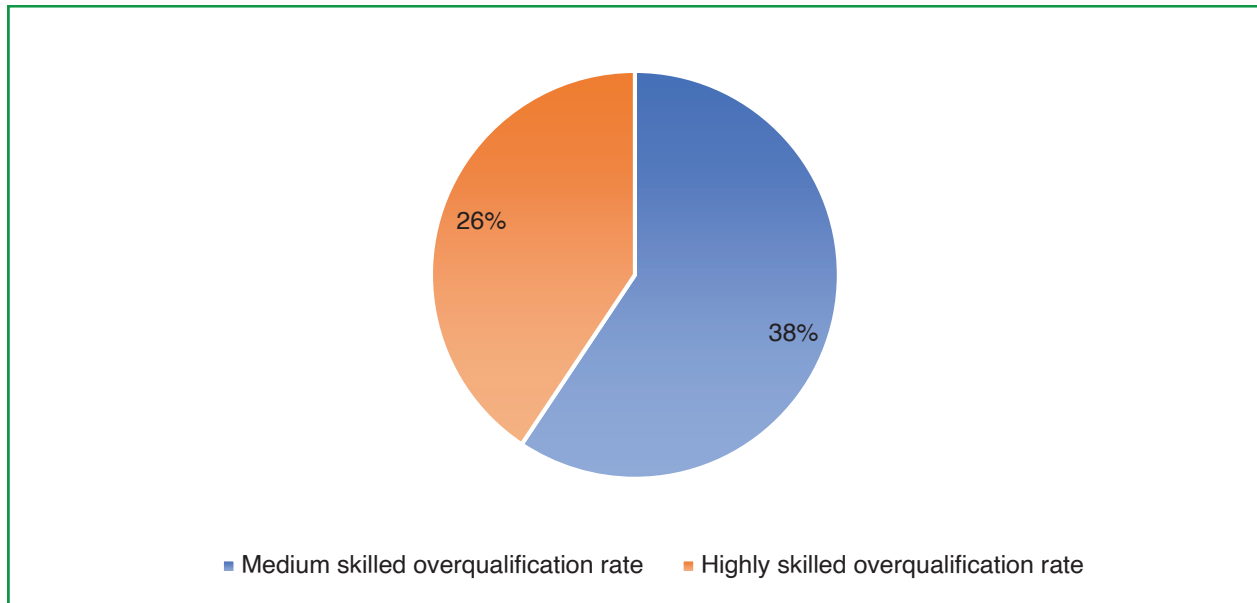
Table 7.9: Selected occupational skills demand status for the ICT sector

ICT Occupation	1 st skill level	2 nd skill level	3 rd skill level	4 th skill level
Data processing	-	18.43%	31.26%	50.32%
Computer programmers	-	-	20.40%	79.60%
Computer system engineers	7.50%	11.81%	79.25%	1.43%
Network and computer systems administrators	12.40%	19.14%	41.23%	27.23%
Web administrators	-	22.35%	64.06%	13.58%

Source: Kenya Continuous Household Survey data, 2021

A deeper analysis was undertaken to compare the highest level of education qualification attained by a worker with the occupation skills level required for the occupation they are in currently. The workers are categorized as workers with 2nd skill levels as medium-skilled and those with 3rd and 4th skill levels as highly skilled. Therefore, if medium skilled workers hold occupations with 1st skill level, then they are medium-skilled and overqualified. Similarly, if the highly skilled workers hold occupations that

require 2nd or 1st skill levels, then they are highly skilled and overqualified. Data shows that 38 per cent of medium-skilled workers with secondary education qualifications hold occupations that require 1st skills level and 26 per cent of high-skilled workers with a tertiary education hold low or medium-skilled occupations. This can be attributed to the labour demand not providing adequate quality jobs for the growing number of tertiary graduates entering the labour market.

Figure 7.5: Vertical qualification mismatch in Kenya, in 2021

Source: Authors' calculations based on Kenya Continuous Household Survey data, 2021

Note: Vertical qualification mismatch by level of education arises when their level of education is above that required for their job; they are considered overqualified

Several key sectors within the economy have a pronounced demand for skills at the 3rd and 4th skill levels, indicating the importance of advanced skills (Table 7.10). For instance, close to two-thirds of workers in the professional, scientific, and technical activities possess a university degree and above in terms of qualification; real estate sector at 43.26 per cent; financial and insurance activities at 37.73 per cent; and financial intermediation services indirectly measured at 37.63 per cent. This underlines the requirement for advanced knowledge and expertise in higher education qualifications, aligning with the complex and multifaceted nature of these sectors. Additionally, sectors such as public administration and defense, electricity supply, and education highlight the value of higher education in professions that require advanced expertise. The ICT sector relies on advanced skills for software development, cybersecurity, network management, and technology innovation. Human health and social work

activities sector calls for advanced technical and managerial skills at the 4th skill level. The need for high-level expertise arises from the intricacies, responsibilities, and critical decision-making required in these industries.

The 3rd skill level, which signifies a proficiency attained through technical vocational education and training (TVET), plays a pivotal role in several sectors in Kenya. Notably, the electricity supply sector leads with half of its workforce possessing 3rd skill level, signifying the technical and highly specialized nature of the industry, which relies on skilled technicians for efficient operations. Additionally, the human, health, and social work activities sector, education sector, and ICT sector demonstrate notable demands for the 3rd skill level at 48.89 per cent, 47.6 per cent, and 41.23 per cent, respectively. These demands align with the need for individuals with practical and specialized skills to meet the complexities of healthcare, education, and information technology. Furthermore, sectors

such as financial and insurance activities, professional, scientific, and technical activities, public administration and defense, and the manufacturing sector also express a significant

demand for the 3rd level of skills. Generally, these sectors highlight the critical need for advanced skills to enhance productivity and meet the multifaceted demands of their respective areas.

Table 7.10: Sectors demanding advanced skills with data indicating available skill levels in 2021

Sector	4 th skill level (%)	3 rd skill level (%)
Professional, scientific, and technical activities	56.16	25.62
Real estate	43.26	9.40
Financial and insurance activities	37.73	27.72
Financial intermediation services indirectly measured	37.63	-*
Public administration and defense	34.08	22.42
Electricity supply	33.22	52.95
Arts, entertainment, and recreation	30.30	12.08
Education	29.34	47.60
Information and communication technology	27.23	41.23
Human health and social work activities	23.66	48.89
Manufacturing	6.77	19.00

Data source: Authors' construction using Kenya Continuous Household Survey data, 2021

*Indicates that the 3rd skill level for the financial and insurance activities sector was not available as per the 2021 KCHS data

7.4 Skills Projections

Kenya, like many other countries, is faced with an evolving demand for skills that are driven by the changing economic landscape, globalization, technology, and climate change. Increased access to education and an expanding university education provides a rich opportunity to not only develop a skilled workforce but also align education and training to the demands of the emerging economy. While a comprehensive skills inventory is undoubtedly crucial for the country's development, it is increasingly clear that understanding emerging trends in skills demand holds greater significance. These

trends offer valuable insights into the types of skills needed in the Kenyan context over the medium and long-term.

7.4.1 Demographic dynamics

The growth in Kenya's population is expected to remain high in the next decade, projected to increase to 55 million in 2028. The working population age structure (15-64 years) which was equivalent to 60 per cent of the total population in 2022 is projected to expand to 63 per cent in 2028, presenting a significant supply of labour available for various industries and sectors.

As the working-age population grows, it is essential to ensure that individuals within this age group are equipped with appropriate skills to contribute effectively to the future productive workforce. From the projection, it is expected that the labour force will increase to about 35 million by 2030, out of whom those employed will be approximately 22 million based on the baseline scenario of 2022. This anticipated

expansion in the workforce highlights the pressing need to make substantial investments in skills development. As the number of individuals seeking employment opportunities increases, it becomes imperative to ensure that they possess the necessary skills and qualifications to not only secure jobs but also contribute effectively to the evolving labour market.

Table 7.11: Population and employment forecasts, 2022-2028

Employment projection	2022	2023	2024	2025	2026	2027	2028
15-64 years (labour force)	30,345,904	31,140,324	31,934,744	32,729,164	33,513,621	34,298,077	35,082,533
Employed	19,148,200	19,649,477	20,150,755	20,652,032	21,147,023	21,642,013	22,137,003

Data source: Authors construction using Kenya Continuous Household Survey data (2021) and KNBS population projections (2022)

7.4.2 Sectoral projections

The sectorial forecast based on the Budget Policy Statement and Budget Review and Outlook Paper (BRPOP) shows that the GDP average growth rate is projected at 6.3 per cent in 2028. The primary economic sectors that generate demand for future skills in Kenya are predominantly found within the services sector (accounting for 38% of the total workforce) and the agriculture sector (accounting for 51% of the total workforce). This implies that these sectors will push the demand for skills in Kenya for the future workforce. As the country strives for sustained economic growth and

competitiveness, investing in skills development aligned with the changing demands of industry and markets becomes paramount. Table 7.12 presents additional workers required by sector from 2024 to 2028 in various economic sectors, which will experience increasing demand for labour. Thus, there is a need to align workforce training and education programmes with the evolving needs of these sectors to ensure an adequate supply of skilled workers. Considering this workforce expansion, it is crucial to channel efforts towards fostering a productive and future-ready workforce, emphasizing skills that can drive innovation, adaptability, and overall economic progress.

Table 7.12: Projected additional workers required by sector, 2024-2028

Sectors	2023	2024	2025	2026	2027	2028
Agriculture, forestry and fishing	483,122	537,566	608,378	666,113	718,331	775,172
Mining and quarrying	7,088	7,887	8,926	9,773	10,539	11,373
Manufacturing	48,946	54,462	61,636	67,485	72,776	78,534
Electricity supply	1,314	1,462	1,655	1,812	1,954	2,109
Water supply; sewerage, waste management	2,083	2,318	2,623	2,872	3,097	3,342
Construction	50,394	56,074	63,460	69,482	74,929	80,858

Wholesale and retail trade; repairs	132,192	147,089	166,464	182,261	196,549	212,102
Transportation and storage	49,460	55,034	62,283	68,194	73,540	79,359
Accommodation and food service activities	19,036	21,182	23,972	26,247	28,304	30,544
Information and communication	3,821	4,251	4,811	5,268	5,681	6,130
Financial and insurance activities	7,418	8,254	9,342	10,228	11,030	11,903
Real estate	3,146	3,500	3,961	4,337	4,677	5,047
Professional, scientific, and technical activities	10,417	11,591	13,118	14,363	15,489	16,715
Administrative and support service activities	25,391	28,252	31,974	35,008	37,752	40,740
Public administration and defence	11,528	12,827	14,516	15,894	17,140	18,496
Education	39,907	44,404	50,253	55,022	59,336	64,031
Human health and social work activities	11,178	12,437	14,075	15,411	16,619	17,934
Arts, entertainment, and recreation	2,026	2,255	2,552	2,794	3,013	3,251
Other service activities	25,785	28,690	32,470	35,551	38,338	41,372
Activities of households as employers	22,833	25,406	28,753	31,481	33,949	36,636
Financial intermediation services indirectly measured	35	39	44	48	52	56
Total	957,121	1,064,981	1,205,268	1,319,645	1,423,097	1,535,705

Data source: Authors' construction using 2024 Budget Policy Statement; Kenya Continuous Household Survey data (2021) and KNBS population projections (2022)

Because of the expanding economy, there is a need to develop additional skills to fit in the national priority sectors and the emerging labour dynamics. The Bottom-up Economic Transformation Agenda (BETA) and the Medium-Term Plan IV identify textiles and leather as core priority value chains. This is due to their direct impact on the workforce and the export market. Despite the importance of these value chains, the shortage of adequately trained and skilled workforce is a significant

impediment. The Industrial Policy (2012), BETA, and MTP IV identify inadequate skills as a key challenge to the development of the textiles and leather sector. The projected workers across the value chains are presented in Table 7.13. Workers in the textile sub-sector are projected to increase from 13,153 in 2022 to 18,517 in 2028. In the leather sub-sector, workers are expected to increase from 103,889 in 2022 to 146,254 in 2028.

Table 7.13: Projected workers required in textile, leather, and pharmaceuticals sub-sectors

Workers required	2022	2023	2024	2025	2026	2027	2028
Textiles	13,153	13,837	14,598	15,459	16,402	17,419	18,517
Leather and related products	103,889	109,292	115,303	122,105	129,554	137,586	146,254
Pharmaceuticals	16,971	17,853	18,835	19,947	21,163	22,476	23,892

Data source: Authors' construction using 2024 Budget Policy Statement; Kenya Continuous Household Survey data (2021) and KNBS population projections (2022)

7.5 Key Messages and Recommendations

7.5.1 Key messages

- Skills development is a key priority in achieving the national development agenda. Presently, BETA has identified key priority areas that require quality skills to support delivery. These are agriculture; micro, small, and medium enterprises; housing and settlement; healthcare; and digital superhighway and creative economy. However, the current skills development approach is not aligned to deliver the national priority areas as seen in the low enrolments, especially in courses related to BETA pillars. As a result, the country may need to realign skills development to achieve the set agenda. The emerging skills demand that includes technological changes, globalization, climate change, and demographic shifts should inform areas that require skills development.
- In education and training, as one of the channels for developing skills, the country has made great strides in improving access and education attainment. The achievements include the implementation of FPE, FDSE, subsidized tertiary education, and infrastructure development. However, the sector faces challenges of inequalities, wastage, poor education outcomes, and gender disparity, which hinder the sector's ability to maximize its human capital potential for enhanced productivity.
- Skills developed through informal apprenticeship is faced with limited systematic organization and structure, limited training standards and quality assurance mechanisms, inadequate working conditions, and safety measures, limited theoretical knowledge to complement practical skills, and difficulties in enforcing informal agreements between craftsperson and apprentices, which could result in exploitation. In response to these challenges, the government has rolled out the implementation of the RPL policy.
- Workplace training provides an opportunity for skills development for individuals in employment who need to enhance their skills to adapt to current trends or career growth. Some of the challenges that impact workplace training include financial costs borne by organizations in providing staff training, cost of staff time foregone by workers when they are on training, and likely turnover of trained workers.
- The national priority sectors have skills shortages, especially for qualified workers. These include the health, manufacturing, and ICT sectors. A majority (77%) of the workforce employed in the agriculture sector possesses 1st skill level. Further, the presence of a smaller percentage of workers with skills at the 3rd level (16%) and 4th skill level (6%) in the industry sector points to the demand for specialized expertise in this sector. The services sector has a workforce possessing skills at the 3rd skill level (19%) and 4th skill level (12%).

To achieve the government's development priorities in textile and leather, attention needs to be directed towards developing a skilled workforce. An additional 5,364 and 42,365 workers will be required in 2028 for the textile and leather sub-sectors, respectively, highlighting the anticipated workforce needs between 2023 and 2028.

6. There is a vertical qualification mismatch with 38 per cent of medium-skilled workers who possess secondary education qualification holding occupations that require 1st skill level and 26 per cent of high-skilled workers with a tertiary education holding low- or medium-skilled occupations. This can be attributed to the labour demand not providing adequate quality jobs for the growing number of tertiary graduates entering the labour market.

7.5.2 Policy recommendations

1. The government could deliberately refocus skills development to address the national priority areas and the dynamics in the labour market. This can be done through:
 - i) mobilizing adequate financial resources through public-private partnerships to provide targeted scholarships, loans, and bursaries to students to study these programmes;
 - ii) retooling workers in the labour market towards the national priority areas by offering them conditional exchange programmes;
 - iii) establishing the National Skills and Funding Council to oversee funding initiatives for supporting skills development in the country; and
 - iv) allocating adequate financial resources for strengthening centres of excellence that offer training in priority areas.
2. Provision of outreach programmes could encourage enrolment and retention of learners at all levels of education and training. This can be done through campaigns at grassroot levels through various channels, including print media, radio, television, and social media. In addition, there is a need to review the Free Primary Education Policy to include pre-primary education level to enable all learners to access universal basic education at no cost. Policies for free pre-primary education need enforcement, and funding formulas to ensure equity. Removing all indirect costs related to education, such as the cost of uniforms, textbooks, and transportation would make basic education completely free.
3. The Recognition of Prior Learning (RPL) policy acknowledges apprenticeship in the informal sector as a valuable pathway for skills development. To ensure the effective implementation of this policy, there is a need to conduct widespread awareness campaigns among employers and employees through channels such as radio, television, and social media. In addition, there is a need to enforce the implementation of tax rebates for training expenditures to alleviate budget constraints by providing financial relief to organizations investing in employee development.
4. Allocating adequate financial resources to support the implementation of curriculum reforms in terms of capacities and infrastructure would address skills shortages and mismatches. This is because the implementation of these curriculum reforms requires heavy investment in human resources, enabling legal and institutional framework, and infrastructure consistent with relevant courses. Further, the academia needs to develop strong partnerships with industries, businesses, and community organizations to understand their evolving needs and align educational delivery accordingly.

PRODUCTIVITY AT THE COUNTY LEVEL: FOCUS ON ARID COUNTIES

County productivity is important to the country in achieving sustainable and inclusive economic growth. Economic activities take place at the county level and, therefore, interventions to enhance productivity at this level would increase productivity at the national level. From the analysis, although arid counties have the smallest economies, they have latent natural resources such as land, wildlife, and renewable energy resources that hold the potential for sustainable economic growth. However, climate change, insecurity, and inadequate infrastructure constrain the growth and optimal utilization of their potential. Additionally, arid counties have a comparative advantage in livestock production, but the potential in the livestock value chain is yet to be fully exploited. While the services sector dominates the share of county GVA, it is the non-market services that dominate in arid counties. On employment, the low quality and quantity of labour in the arid counties, coupled with low labour utilization, has significant implications on productivity. Consequently, arid counties have the lowest labour productivity. Therefore, it is important to create an enabling environment for the private sector to exploit the latent natural resources and expand market-oriented activities. As a priority is investing in human capital development to enhance the quality of labour. In addition, full integration of livestock production into the leather value chain is required.

8.1 Introduction

County labour productivity is of paramount importance for the country to achieve economic wellbeing and long-term prosperity. It is not only an important indicator of economic efficiency at the sub-national level but also has far-reaching implications for inclusivity in various aspects of the economy, society, and individuals. Governments, businesses, and individuals have a vested interest in fostering a productive economy to achieve sustained inclusive growth and prosperity.

Economic activities take place at the sub-national levels and, therefore, interventions to enhance labour productivity at this level would increase productivity at the national level. There

is therefore growing need to close regional productivity gaps to realize inclusive economic growth and social cohesion. Regional disparities in labour productivity levels impact the overall economic growth rate and closing these gaps could contribute to stronger national economic performance. Analyzing labour productivity at the sub-national level is especially important in Kenya where there are significant differences in human capital and essential infrastructure indicators between counties.

To gain an in-depth understanding of county labour productivity, counties were grouped by their level of aridity. The aridity levels are measured based on moisture availability, with eight (8) counties classified as arid presenting 85-100 per cent aridity level, 13 counties are semi-arid, presenting 30-84 per cent aridity

level, eight (8) counties have 10-29 per cent aridity level while 18 counties have less than 10 per cent aridity (Table 8.1). Both arid and semi-arid lands (ASALs) are often characterized

by extreme levels of seasonality and climate variability manifested by frequent and prolonged droughts and water scarcity. The arid counties

face more extreme weather conditions, with high temperatures throughout the year that result in high rates of evapotranspiration that are more than twice the annual rainfall.

Table 8.1: Classification of counties by level of aridity

Arid counties	Semi-arid counties (30-84%)	Semi-arid Counties (10-29%)	Non-ASAL counties
Wajir	Tharaka Nithi	Lamu	Siaya
Marsabit	West Pokot	Homa Bay	Trans Nzoia
Garissa	Meru	Migori	Nyamira
Samburu	Baringo	Narok	Kirinyaga
Turkana	Kilifi	Elgeyo Marakwet	Busia
Mandera	Taita Taveta	Nyeri	Bomet
Isiolo	Kajiado	Kiambu	Kisii
Tana River	Kwale	Nakuru	Kericho
	Laikipia		Nyandarua
	Embu		Murang'a
	Machakos		Bungoma
	Makueni		Vihiga
			Nandi
			Uasin Gishu
			Nairobi
			Kisumu
			Kakamega
			Mombasa

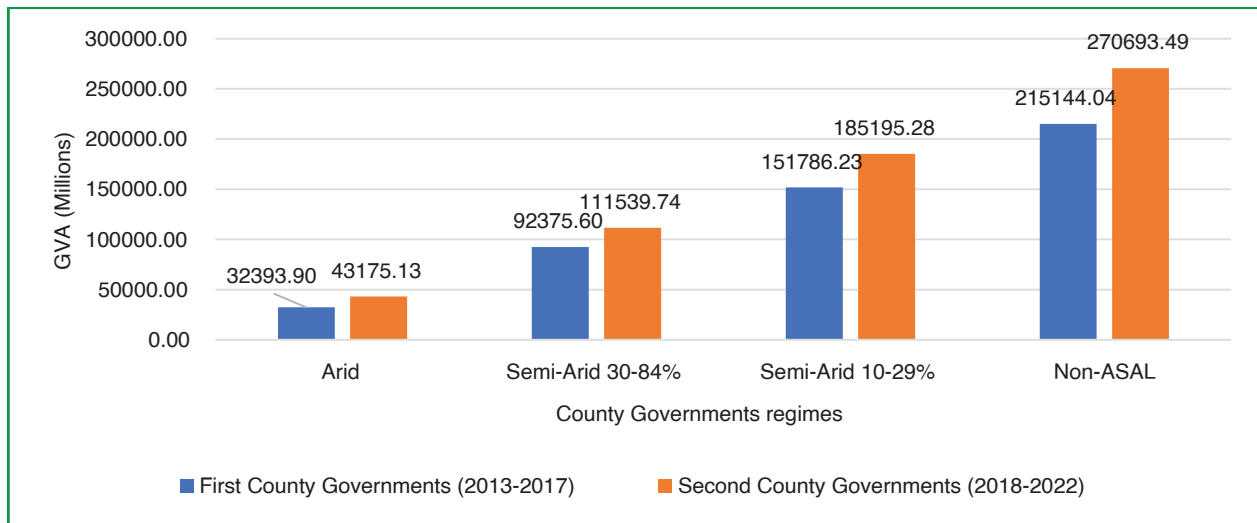
Data source: State Department for ASALs

Arid counties, on average, have the smallest total Gross Value Added (GVA)²³, followed by the semi-arid counties while the non-ASAL

²³ Gross value added is the measure of the value of goods and services produced in an area, industry or sector of an economy. Gross value added is the value of output minus the value of intermediate consumption.

counties have the largest size of GVA. All county categories experienced growth in output between the two county government regimes, but they showed no signs of convergence in growth as the gap between the four categories of counties has remained consistent.

Figure 8.1: Average size of county gross value added (Ksh millions), 2013-2022

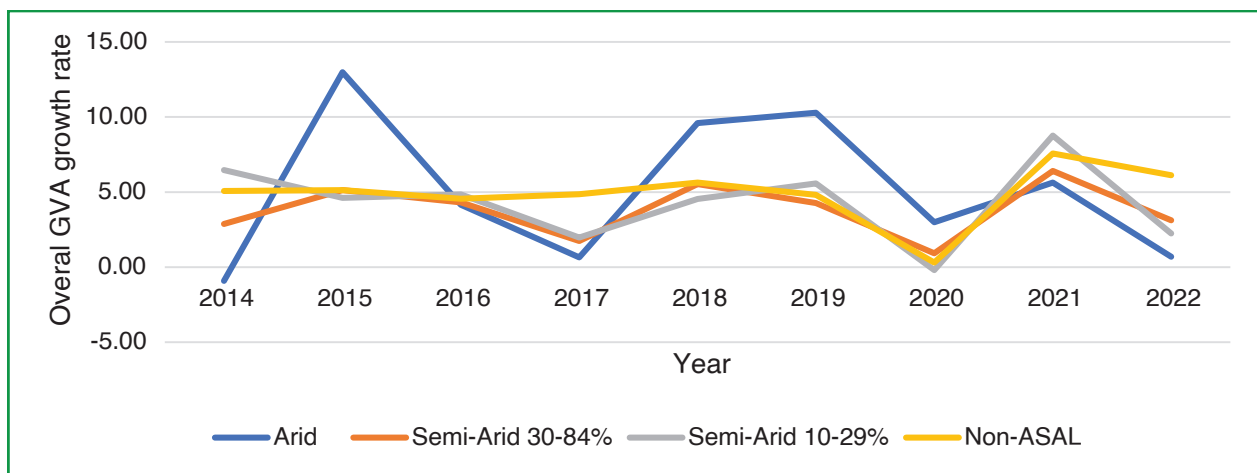


Data source: KNBS (2023), GCP Report

Arid counties had the highest average growth rate at 33.28 per cent, the non-ASAL at 25.81 per cent, semi-arid (10-29%) at 22.01 per cent while semi-arid (30-84%) at 20.74 per cent between the two county government regimes. The arid counties growth rate has been erratic, with both sharp peaks and sharp deeps when compared to other county categories. This is largely attributed to climate change effects manifested by severe and frequent droughts

that disrupt economic activities (mainly livestock production) in the counties). Although the arid counties have comparatively smaller GVA, they have comparatively higher growth rates characterized by episodic recoveries from the decline occasioned by drought episodes. All county categories experienced decline in GVA growth rate in 2020 due to the COVID-19 pandemic.

Figure 8.2: Overall county GVA growth rate, 2014-2022



Data source: Authors' computation using KNBS (2023) GCP data

Arid counties also have the lowest GVA per capita during the two county government regimes, while the non-ASAL counties have the highest. This has implications on the quality of life and poverty indicators in the counties. The GVA per capita increased between the two county government regimes for all categories

of counties. However, overall poverty remained unchanged, indicating that there are still challenges with inclusive growth. Other emerging issues such as the cost of living and the effects of COVID-19 could be dampening the benefits of economic growth.

Figure 8.3: Average GVA per capita

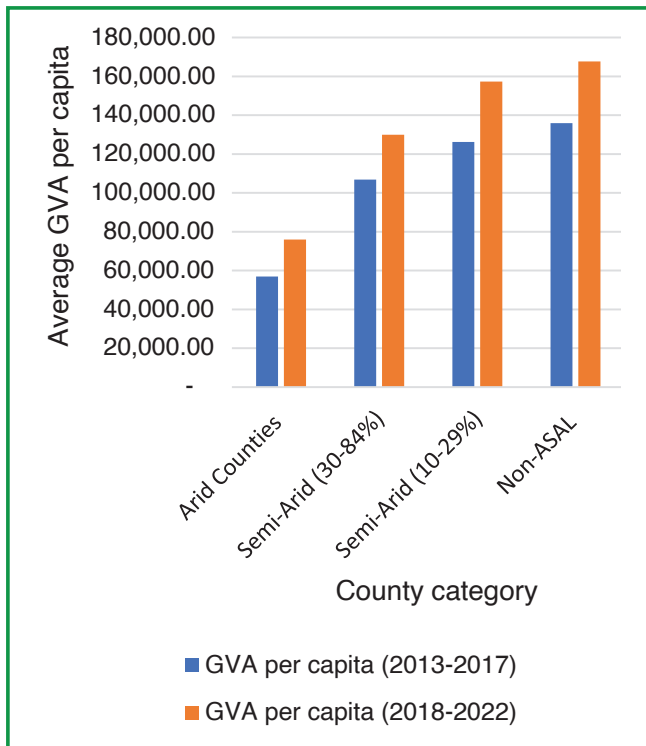
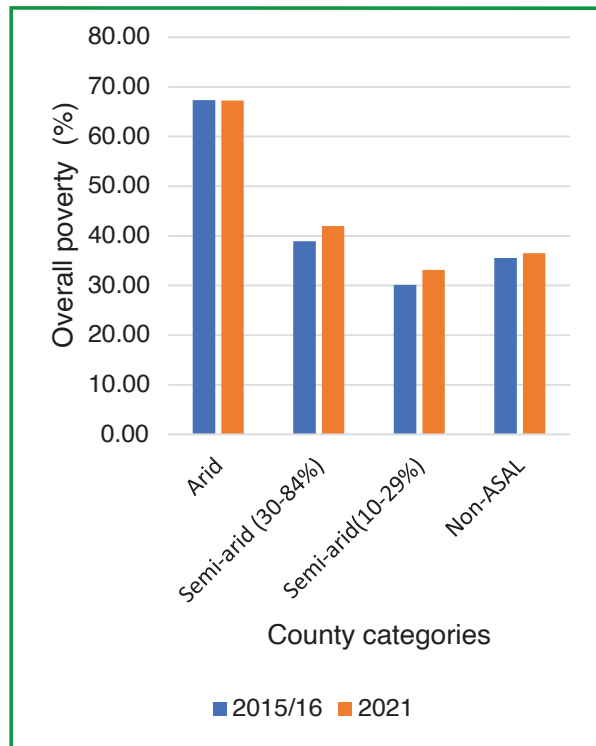


Figure 8.4: Overall poverty (%)



Data source: KNBS (2023) GCP and 2019 Census, KIHBS 2015/16, KNBS (2021) Kenya Poverty Report

Arid counties are endowed with latent resources such as land, wildlife resources, and renewable energy, indicating the high potential they have for economic growth. Land, a natural capital and an economic development asset, is significantly larger in the arid counties compared to the other county categories. The counties also have more wildlife resources and wildlife habitats that thrive due to the vast land, lower population density, and government efforts on the conservation of wildlife. This significant tourism potential provides opportunities for

them to grow their economies while continuing with biodiversity conservation, which is key for sustainable development. Additionally, these counties have a high potential for renewable energy generation that is critical in supporting the country's energy transition agenda of achieving 100 per cent renewable power by 2030. These clean energy sources are mainly wind and solar that, if fully exploited, will generate value for arid economies through increased economic output, employment opportunities, access to electricity, and improved infrastructure.

On the contrary, arid counties have lower population density compared to other county categories, indicating a lower quantity of labour needed for the production of output. This is strongly linked to the high aridity levels that discourage settlement, lower employment opportunities, and the insecurity and infrastructural challenges the region experiences.

Table 8.2: Natural resource endowment by county category

Endowments	Arid	Semi-arid (30-84%)	Semi-arid (10-29%)	Non-ASAL
Land mass (km ²)	46,721.73	10,584.45	5,691.18	1,913.60
Population density	14.96	112.17	311.55	1100.31
Number of national parks (proxies wildlife resources)	19	18	11	12
Renewable energy sources	Wind energy, solar energy, hydropower	Geothermal energy, solar energy, wind energy, hydropower	Geothermal energy, solar energy	Hydropower

Data source: County CIDPs 2018-2022

The growth of economic output is affected by the quality of physical infrastructure and the availability of physical and monetary capital. Inadequate physical infrastructure in both quantity and quality negates productivity, as more time is wasted in the production process. It also contributes to high production and transaction costs, thus disincentivizing investments. Also, inadequate access to credit inhibits the growth of the private sector.

Arid counties have disadvantages in the quality and quantity of physical infrastructure as depicted by low access to electricity, low access to improved water and sanitation, adequate housing, low Internet connectivity, and inadequate road infrastructure. They also have lower financial inclusion and bank usage, which impacts the growth of the private sector. This limitation constrains their ability to fully exploit their natural endowments and attract investments that would create employment.

Table 8.3: Essential infrastructure and capital

Essential infrastructure and capital indicators	Arid counties	Semi-arid (30-84%)	Semi-arid (10-29%)	Non-ASAL
Distribution of population using the Internet (2019)	9.54	19.26	22.89	21.18
Percentage of households with access to electricity (2019)	20.53	36.38	47.64	45.26
Access to improved sanitation (2018)	39.13	72.83	58.00	59.67
Access to improved water (2018)	53.46	62.31	62.26	73.33
Rural access index (2018)	13.46	64.39	62.38	86.57
Percentage of households with adequate housing quality (2019)	32.42	63.86	57.09	51.08
Financial inclusion level (2021)	74.68	80.86	82.59	84.00
Percentage of households by bank usage (2021)	17.14	37.88	43.69	46.41
Percentage of households using mobile money (2021)	73.33	77.78	80.30	81.33

Data source: KRB 2018, KPHC 2019, FinAccess 2021, KIHBS 2015/16,

The ASAL counties face severe security challenges (Figures 8.5 and 8.6). This is mainly in the form of theft of livestock in the North Rift ASAL counties and incidences of terrorist attacks in the North-Eastern border arid counties. Although theft of livestock also occurs in the non-ASAL counties, the scale is higher in the ASAL counties, with larger herds being stolen. The severity of this crime is higher in arid counties due to the proliferation of small arms and light weapons, which have made the crime deadly. The increased severity and frequency of banditry attacks in the North Rift ASAL counties has led to the region being declared a national emergency, and six counties were gazetted as disturbed and dangerous in February of 2023. Consequently, there was increased deployment of security personnel to conduct security operations to tackle the persistent insecurity in the region.

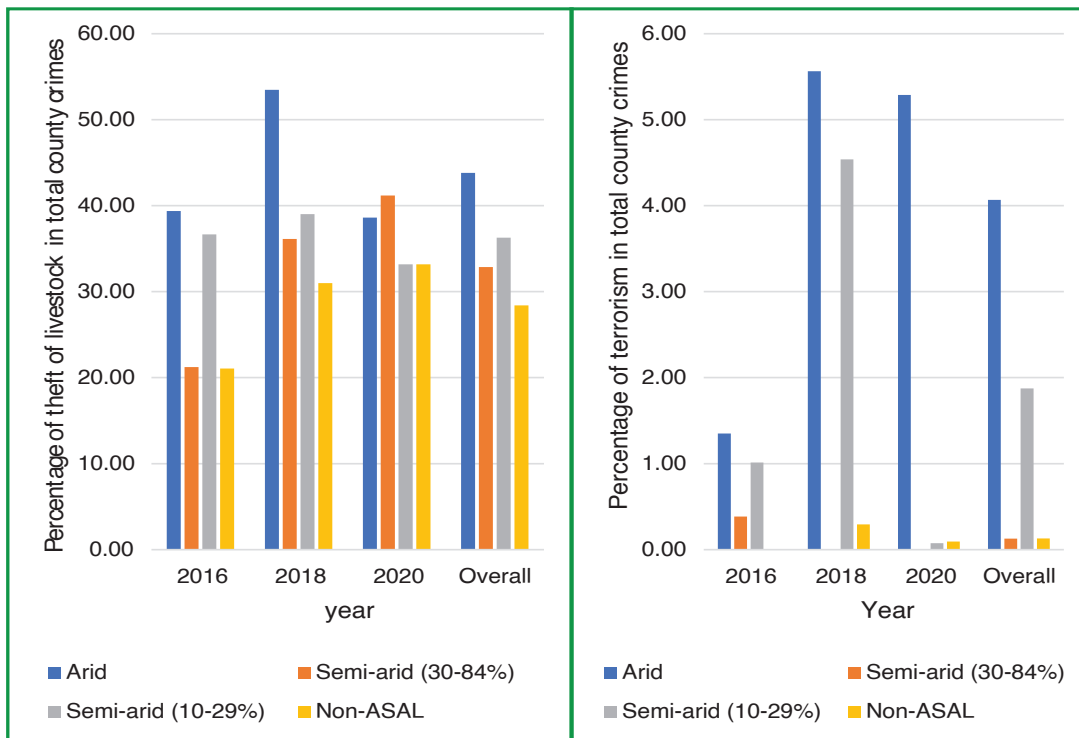
The repercussions of both banditry and terrorism incidences in the Northern ASALs are

multifaceted and extend beyond immediate casualties. Insecurity impacts the social cohesion, economic growth, and psychological wellbeing of the affected populations. The disruption of the economy through the loss of productive assets exacerbates poverty and deprivation, causing economic downturn in the affected counties. Displacement of households affects their access to education and health services, thus creating humanitarian crises. Banditry has also been shown to instigate recurring cycles of inter-communal conflicts as trust and social cohesion are eroded, making the affected counties volatile areas, which discourage investment prospects.

Therefore, continuous implementation of interventions geared towards ending the security challenges of the Northern ASALs is needed for the counties to fully utilize their potential for inclusive economic development in the country.

Figure 8.5: Percentage of theft of livestock in total county crime, 2016-2020

Figure 8.6: Percentage of terrorist attacks in total county crime, 2016-2020



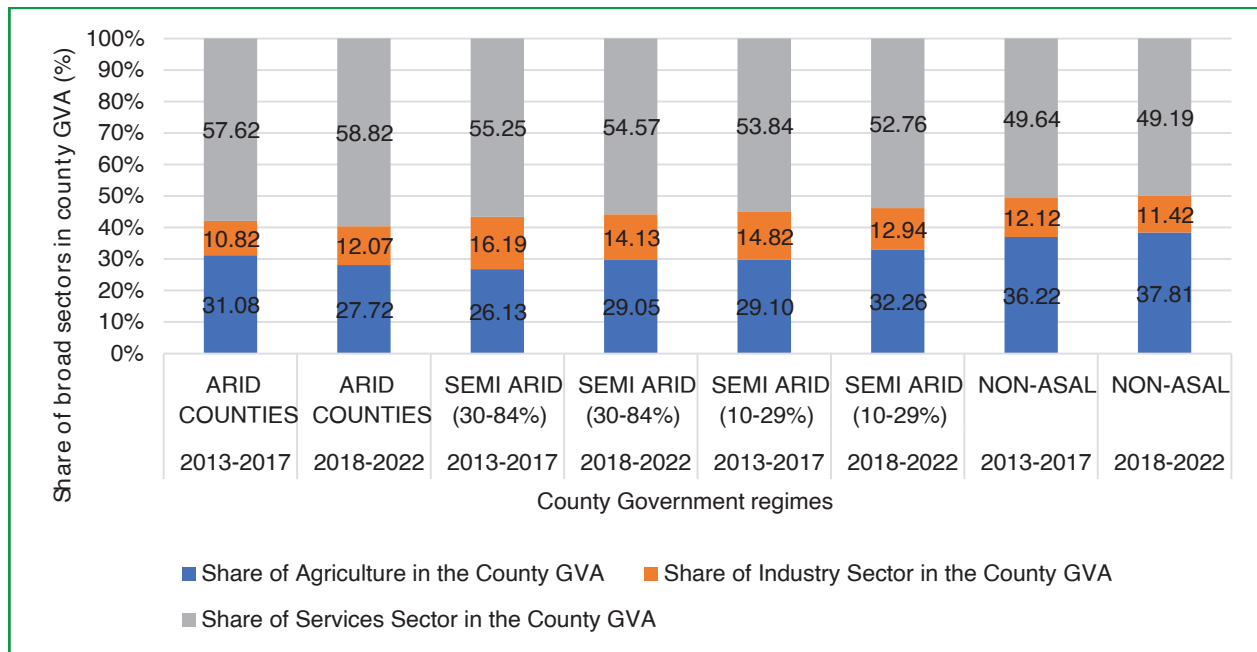
Data source: National Crime Research Centre

8.2 Sectoral Analysis of Gross Value Added

The share of the services sector in county GVA is the largest for all the four categories of counties. It is particularly dominant in the ASAL counties, accounting for an average contribution of 58.2 per cent, 54.9 per cent, 53.2 per cent, and 49.4 per cent of the arid, semi-arid (30-84%), semi-

arid (10-29%), and non-ASAL counties GVA, respectively. The share of agriculture to county GVA is the second largest among the broad sectors. It is higher in the non-ASAL counties, with an average contribution of 37 per cent. It contributes to 30.6 per cent, 29.4 per cent, and 27.5 per cent of the GVA of semi-arid (30-84 per cent), arid and semi-arid (10-29 per cent), respectively.

Figure 8.7: Share of broad sectors in the county GVA, 2013-2022



Data source: Author’s computation using KNBS (2023) GCP data

8.2.1 Agriculture sector

The agricultural sector is a crucial part of the economy. It provides employment opportunities along the various value chains, from production, processing, wholesaling, and retailing to final consumption. In addition, it is a major source of foreign exchange through the export of food and cash crops. The sector has strong forward linkages to the rest of the economy. Therefore, apart from being a source of employment through farming, business, and research, it is a primer for industrialization, and supplying

raw materials to the manufacturing sector. Moreover, it is a market for industrial goods such as machinery, equipment, fertilizer, animal feeds, and agro-chemicals used in agricultural production. It is linked with many off-farm service activities such as transportation and supply chains for agricultural inputs.

The agriculture GVA growth rate in arid counties fluctuates more than in other county categories. This is because livestock production, the dominant sector, is highly vulnerable to droughts. The drought episodes experienced in

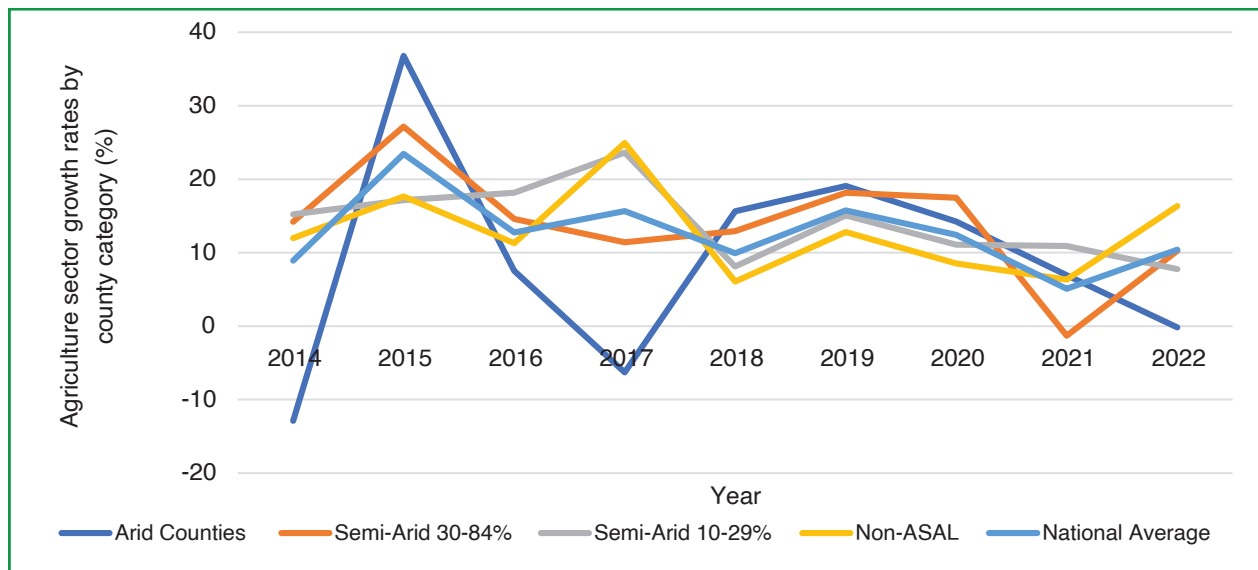
2014²⁴ and 2016/2017²⁵ resulted in a negative growth rate for the agricultural GVA in these counties. Similarly, the more recent multi-year drought²⁶ (2021-2023) and the 2021 locust invasion dampened the recovery from the COVID-19 pandemic.

The effects of the 2021-2023 multi-year drought episode were significantly severe, resulting in the decimation of about 2.6 million livestock, and significantly reducing the value and productive capacity of the herds that survived.²⁷ Pastoralists have always managed to use indigenous knowledge and mobility to manage climate variability and were able to survive and thrive in marginal lands. However,

with climate change, droughts are becoming more severe and frequent, eroding their adaptive capacity and narrowing the recovery periods. Mobility is becoming limited due to population pressure and changes in land use. The losses have had long-term negative effects on livelihoods and household welfare and ASAL county economies in aggregate. The government at county and national levels has been implementing interventions aimed at mitigating the losses. This includes the promotion of the uptake of livestock insurance and promoting production of pastures and forage supplementation. The promotion of livestock insurance has mainly been through the Index-Based Livestock Insurance (IBLI) programme, but the uptake has been sub-optimal. The statistics available show that as of 2019, only about 200,000 people were insured under all IBLI programmes combined in Kenya and Ethiopia.

²⁴ In January 2014, the Government of Kenya declared an impending drought that affected an estimated 1.6 million people.
²⁵ The severe drought in Kenya, 2016-2017, affected 23 of 47 counties, affecting more than two million people.
²⁶ The Horn of Africa region experienced the worst drought in 40 years since October 2020.
²⁷ <https://www.un.org/africarenewal/magazine/january-2023/climate-change-de-stroys-livelihoods-kenyan-pastoralists#:~:text=The%20State%20Department%20of%20Livestock,suffering%20without%20pasture%20and%20water.>

Figure 8.8: Agriculture sector GVA growth rate, 2014-2022



Data source: Author's computation using KNBS 2023 GCP data

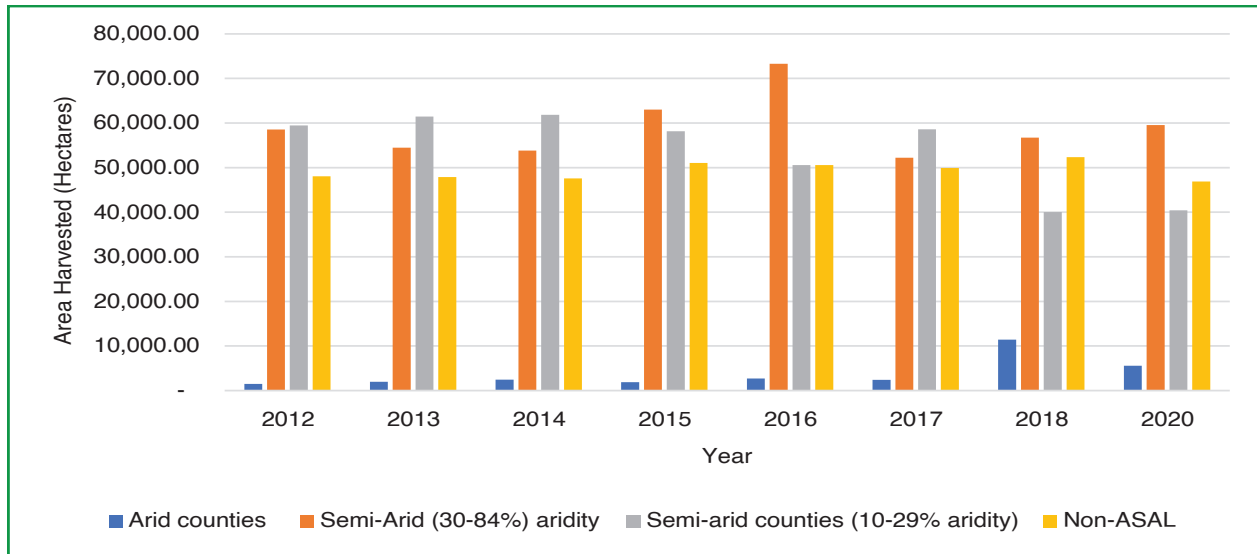
The high aridity levels in arid counties limit rain-fed crop production. This is reflected in the low area harvested for maize compared to the other county categories (Figure 8.9). The semi-arid counties have the highest area harvested for

maize compared with the non-ASAL counties. This is because of larger agricultural holdings in these counties when compared with the non-ASAL counties.

Maize production is lowest in the arid counties. However, it has been increasing over the years, with the highest production being in 2018. The semi-arid counties, despite having a higher area of harvested maize, have lower maize production, indicating lower yield (MT/HA). In

addition, maize production has been declining over the years, with the lowest production experienced in 2020. Maize production is highest in the non-ASAL counties, which experience more favourable climatic conditions.

Figure 8.9: Area harvested (hectares) for maize production, 2012-2020



Data source: NIPFN

Figure 8.10: Maize production (metric tons), 2012-2020

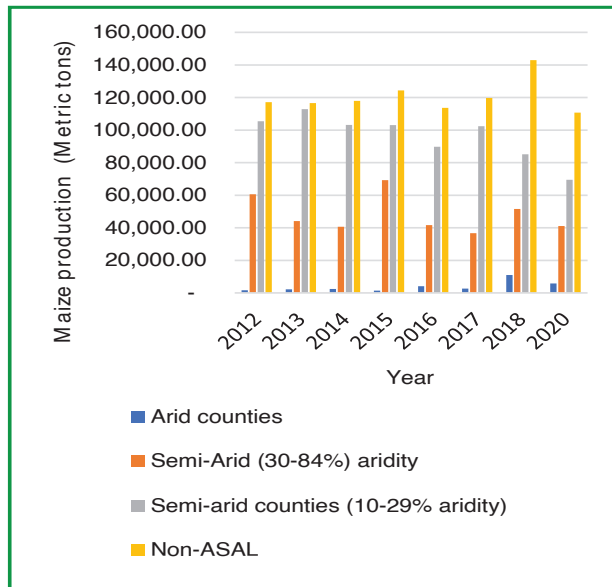
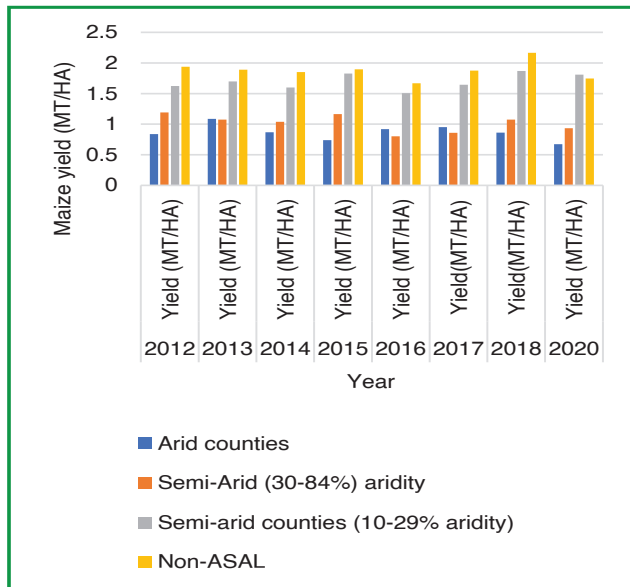


Figure 8.11: Maize yield (MT/HA), 2012-2021



Data source: NIPFN (2020)

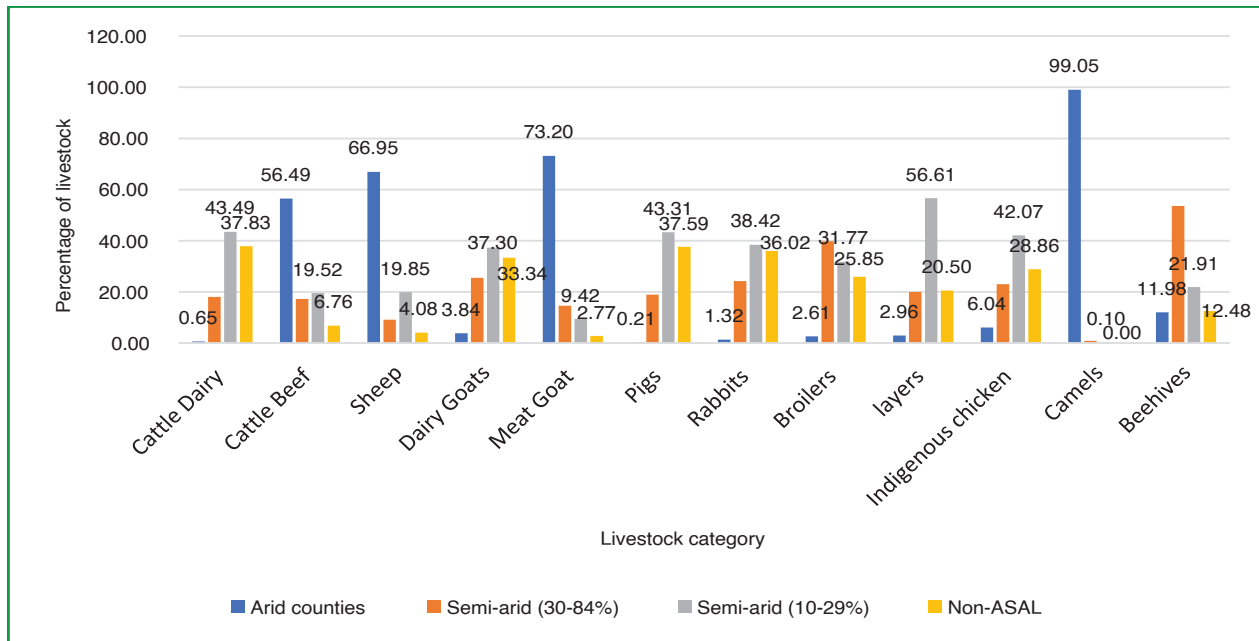
The comparative advantage of ASAL counties lies in livestock production. Arid counties, which practice pastoralism, have the highest number of beef cattle, sheep, meat goats, and camels compared to the rest of the county categories. They have higher monetary values for main livestock products, particularly beef and goat meat as shown in Figure 8.12. Despite having lower numbers of dairy cattle, the arid counties have significantly higher value of milk produced when compared with the semi-arid (30-84%) and the non-ASAL counties, reflecting the dual-purpose nature of the livestock kept in the arid counties. The highest number of camels are found in the arid counties, providing milk and meat, which are highly valued in the major towns.

Arid counties show advantages in other livestock by-products such as hides and skins, with higher monetary values when compared with the other county categories. Hides and skins are mainly sold in Marsabit, Isiolo, and Garissa while in Mandera, Wajir, Turkana, and Garissa, they have low sales for hides and skins despite high livestock production, implying low utilization of these products. Despite this comparative advantage, the full potential of the livestock value chain is yet to be fully tapped.

The leather value chain is one of the key value chains under MTP IV, therefore, increased investments through the establishment of tanneries and leather processing factories in arid counties is needed to fully tap this potential. The semi-arid counties practice agro-pastoralism, having both crop production and livestock production systems, as seen in Figures 8.9 and 8.12. The semi-arid (10-29%) have advantages in dairy production, having the highest number of dairy cattle on average and the highest value of milk produced. They have the highest value for mutton as both wool and meat sheep production thrive in these counties. The semi-arid (10-29%) show higher monetary value for wool production, which is one of the raw materials for the textile industry.

The semi-arid (30-84%) have lower comparative advantages in livestock production. On average, they have a lower number of livestock compared to the other ASAL categories and lower value of livestock products. This, combined with lower maize yield, results in lower overall agriculture output for these county categories. They, however, show advantages in honey production, having both a higher number of beehives and a higher value of honey produced.

Figure 8.12: Percentage of livestock across the county categories, 2019



Data source: KNBS (2019), Population census

Figure 8.13: Total value of main livestock products (Ksh million)

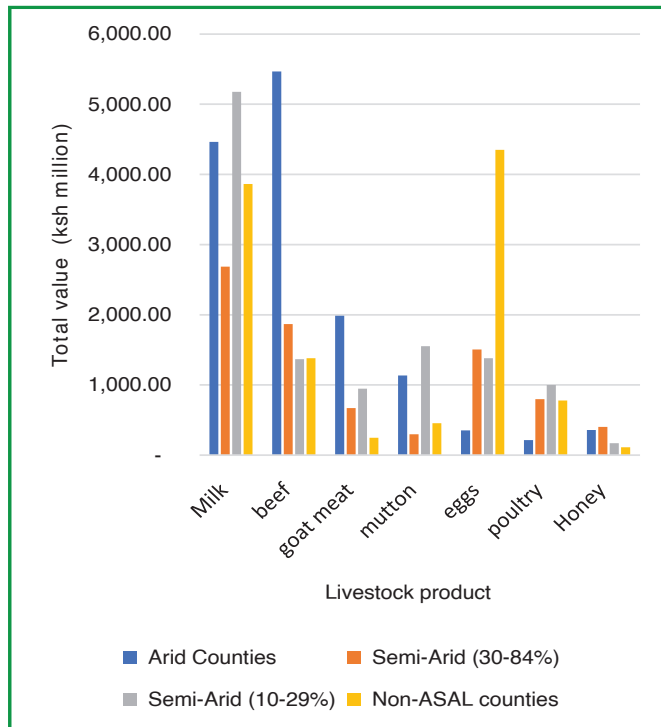
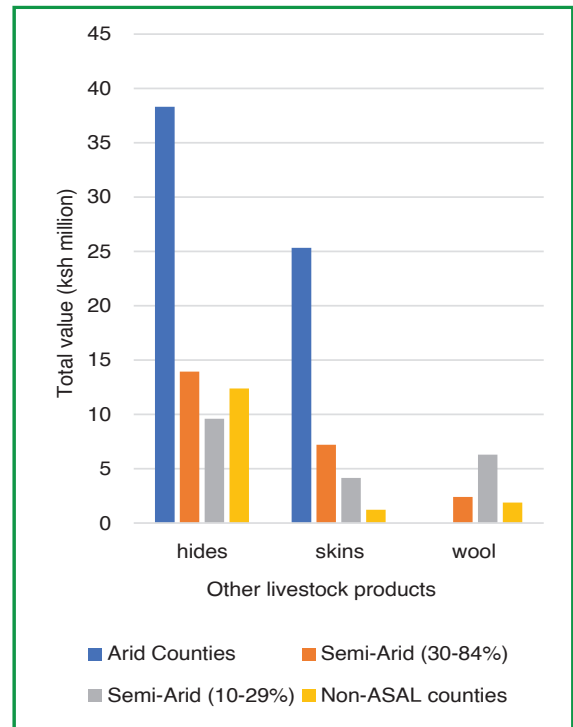


Figure 8.14: Total value of other livestock products (Ksh million)



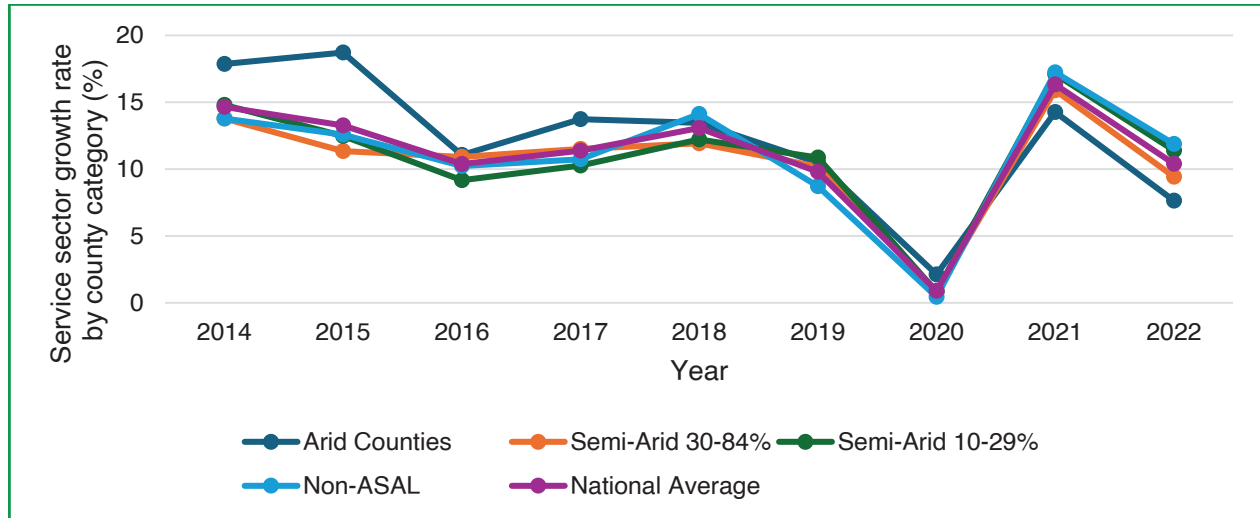
Data source: NIPFN (2020)

8.2.2 Services sector

The services sector had growth rates for all the years under review, with declines experienced in 2016²⁸ and the highest decline in 2020 due to the COVID-19 pandemic. The high-contact service industries such as wholesale and retail; transportation and storage; and accommodation and food services bore the brunt of the COVID-19 mobility restrictions.

²⁸ This could also be attributed to drought, as the main services sector is the wholesale and retail trade, which also depends on products from agriculture - retail of food, beverages and tobacco products.

Figure 8.15: Services sector GVA growth rate, 2014-2022

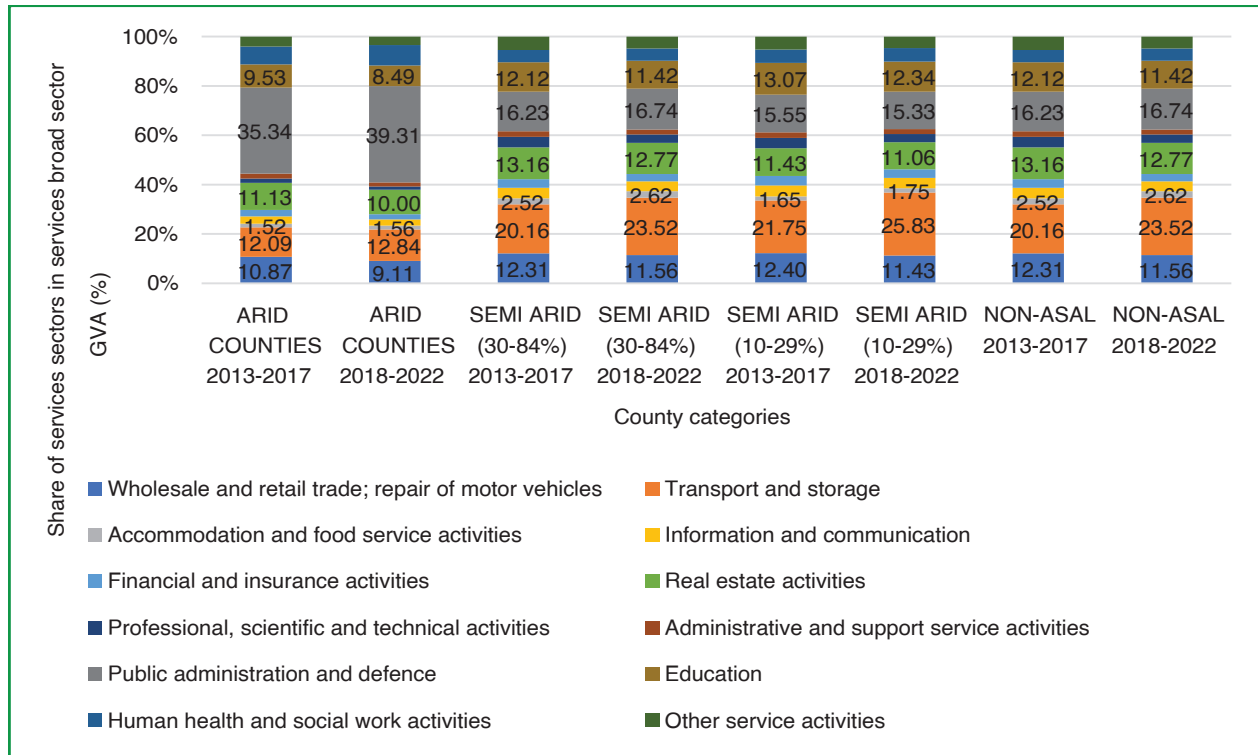


Data source: Author’s computation using KNBS (2023) GCP data

Among the arid counties, the services sector is dominated by public administration and defence at 37.3 per cent. The dominance of non-market services in the services sector GVA indicates that public investments and projects may be serving as expansionary policy tools to stimulate overall economic activity in these counties. This indicates that counties have

lower contributions to the county output by the private sector. For semi-arid and non-ASAL counties, market services, particularly transport and storage sector are the dominant contributor to services GVA at 23.8 per cent for semi-arid (10-29%), 21.8 per cent for semi-arid (30-84%) and 20.9 per cent for non-ASAL counties.

Figure 8.16: Share of service sectors in service broad sector GVA, 2013-2022



Data source: Author’s computation using KNBS (2023) GCP data

The contribution of the tourism sector to county GVA (proxied by accommodation and food services) is very low at an average of 1.5 per cent, 2.57 per cent, 1.75 per cent and 2.57 per cent for arid, semi-arid (30-84%), semi-arid (10-29%) and non-ASAL counties, respectively. The arid counties are well endowed with unexploited tourism potential. Of the 19 national parks and

reserves in the arid counties, only Samburu National Reserve receives a significant number of visitors. The low exploitation of this tourism potential is attributable to infrastructural challenges that discourage investments in hotels and accommodation, and insecurity issues that are prevalent in the arid counties.

Table 8.4: Tourism sites

Tourism sites	Arid	Semi-arid (30-84%)	Semi-arid (10-29%)	Non-ASAL
National parks/ National reserves	19	18	11	12
Museums and snake parks	4	10	5	7
Nature and wildlife conservancies	19	78	43	6
Cultural festivals	7	10	6	2

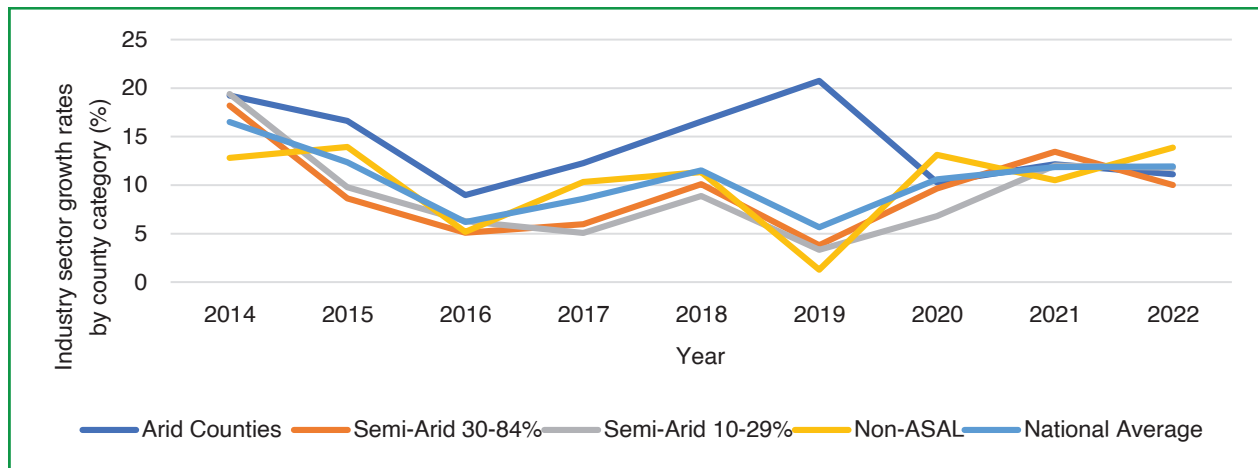
Data source: 2018-2022 CIDPs, Online sources

8.2.3 Industrial sector

The industrial sector growth rate is positive for all the years under review, although declines were experienced in 2016/17 and 2019 for most of the counties. The decline in 2016 experienced by all county categories is attributable to a drought episode. The manufacturing sector in Kenya has strong backward linkages with the agriculture sector as it relies heavily on its raw materials. The industry sector growth declined in 2019, due to a slowdown in the construction sector growth rate with the completion of the Standard Gauge Railway (SGR) Phase I

and II. However, it experienced a recovery in 2020 as the demand for face masks and sanitizers increased. The arid counties did not experience a high decline as their main sector in the industry broad sector is the construction sector while the other counties have bigger shares of the manufacturing sector. Similarly, while the industry sector declined in the other county categories in 2019, the arid counties experienced the highest growth rate. Notably, this is the year that the Lake Turkana Windfarm was commissioned and began feeding to the national grid.

Figure 8.17: Industry sector GVA growth rate 2014-2022



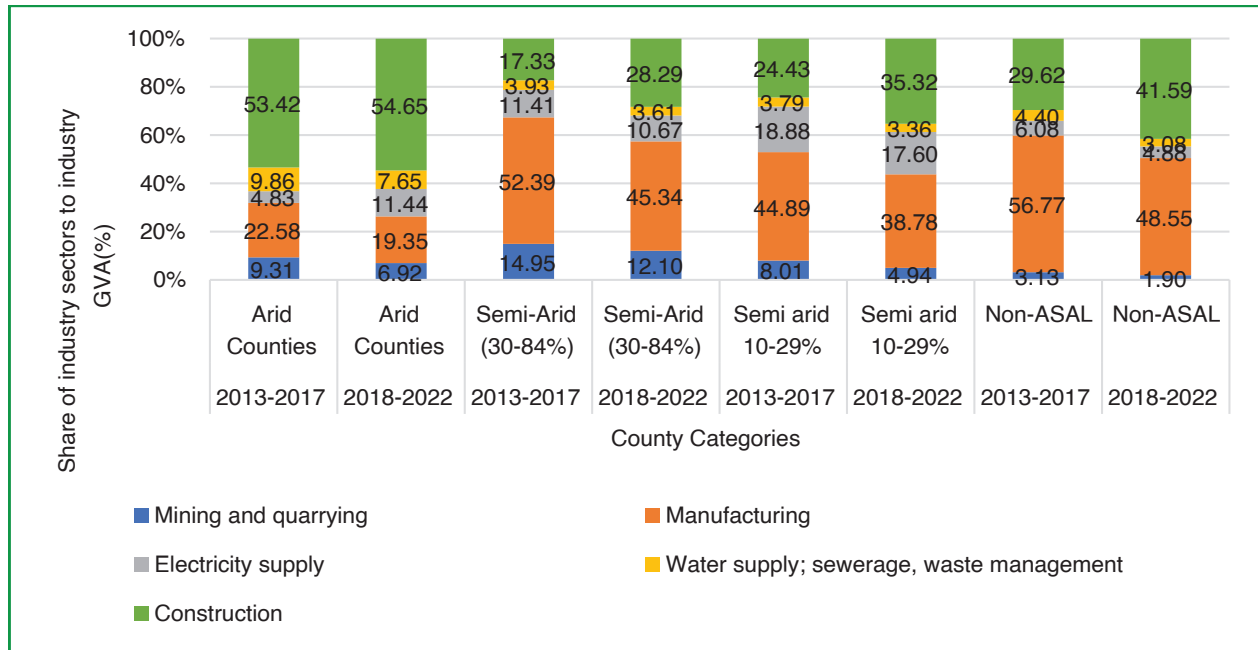
Data source: Author's computation using KNBS (2023) GCP data

A disaggregated analysis of the industry broad sector revealed that the share of the manufacturing sector has been declining from 2013 to 2022 as the share of the construction sector increased for all county categories. The decline in the share of manufacturing GVA is due to its slower growth rates compared to the construction sectors. There have been significant investments in infrastructural enhancements, particularly roads, healthcare,

energy, railway infrastructure, and housing development since devolution, which have led to higher growth rates in the construction sector. The National Construction Authority acknowledges this upward trend in growth and attributes it to increased government budgetary allocation towards infrastructure development and the affordable housing agenda.²⁹

²⁹ https://nca.go.ke:82/media/Construction_Industry_Outlook_-_1st_Edition.pdf

Figure 8.18: Share of industry sectors to industry GVA, 2013-2022

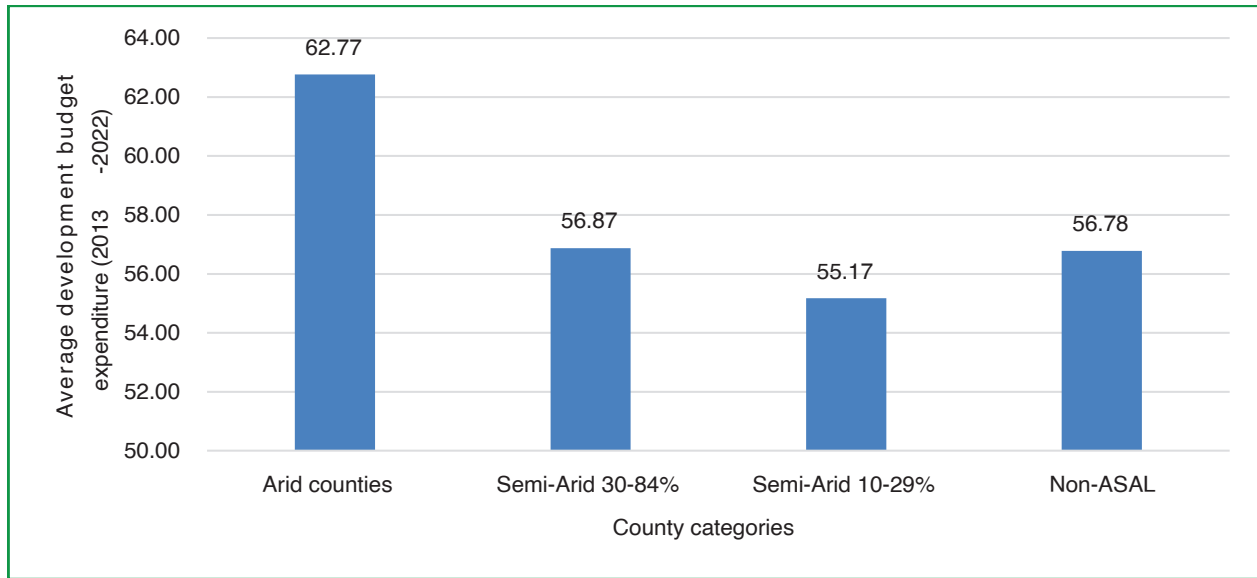


Data source: Author’s computation using KNBS (2023) GCP data

The construction sector is broad and encompasses various activities related to the building of houses, factories, offices, and schools. It entails the building of physical infrastructure such as roads, bridges, ports, railroads, sewers, and tunnels, and the maintenance and repair of all structures. The construction sector is particularly dominant in the arid counties industry GVA at an average share of 54 per cent. This can be attributed to increased urbanization and investments

in essential infrastructure, which have been historically lower in these counties. Devolution has played a big role in infrastructural developments in the ASALs as counties allocate resources to county roads and the establishment of county headquarters. The dominance of this sector in the arid counties can also be attributed to the comparatively higher development budget absorption rate as seen in Figure 8.19, indicating the focus on infrastructural development.

Figure 8.19: Average development budget absorption rate (2013/14-2021/22)

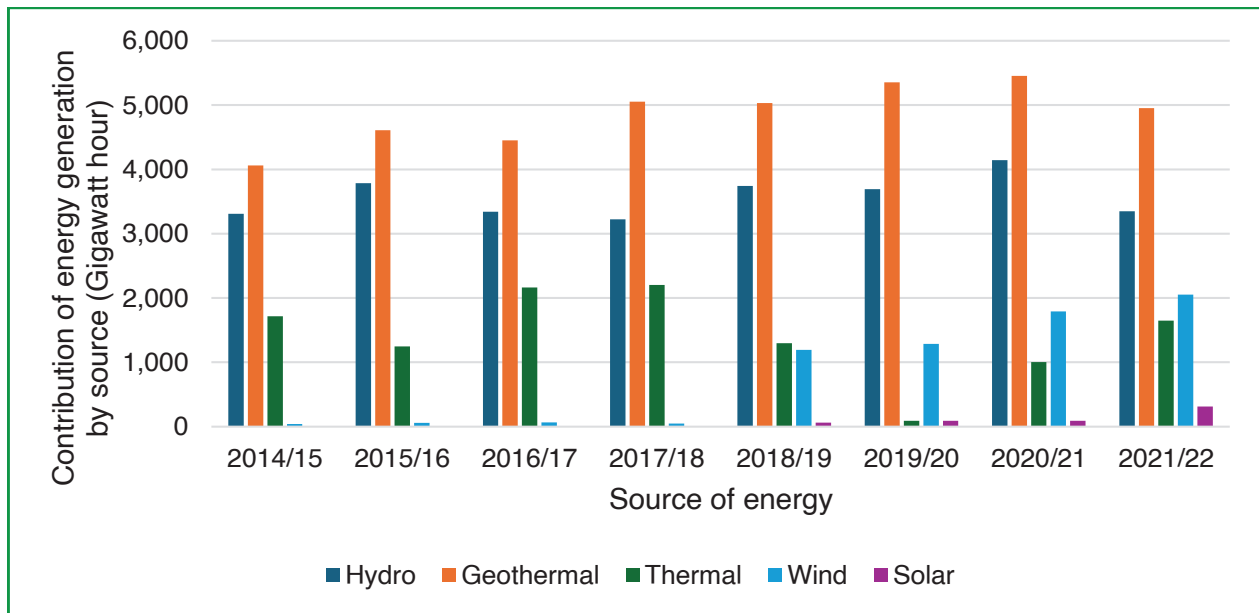


Data source: OCOB reports 2013/14-2021/22

The growth of the manufacturing sector is vital as it has backward and forward linkages with other sectors such as agriculture, extractives, and trade and can spur overall economic growth. Arid counties can grow their manufacturing sector by investing in the livestock product value chain, which could offer job opportunities as they are more labour intensive. This can be an entry point for livelihood diversification in the face of climate change.

The share of electricity supply in the industrial sector has increased for the arid counties (Figure 8.18). This is because of more exploitation of renewable energy such as geothermal, wind, and solar. This has presented opportunities for lowering the cost of electricity as geothermal is more reliable and cheaper compared to hydro and thermal power.

Figure 8.20: Energy generation by source (Gwh)



Data source: EPRA energy and petroleum statistics Reports 2021 and 2023

Although investments in renewable energy in some of these arid counties have opened the regions for development, there is a need to ensure that the local community benefits from employment opportunities, growth of other industries, and electricity connectivity. Green jobs in renewable energy production are another entry point for building the resilience of arid economies. This has implications for skills development to improve employability in green jobs.

8.3 Quality and Labour Utilization

8.3.1 Quality of labour

Investment in education and training by enhancing the quality of workers is one way of improving labour productivity. Investment in education promotes the development of skilled and specialized labour that is necessary for

economic transformation and growth. However, the disparities in education indicators among the four county categories raise concerns about the prospects of inclusive economic growth in the country. Arid counties have lower net enrolment rates at the three levels of basic education, which impacts the quality of future labour. The lower adult literacy rates in the arid counties are indicative of lower educational attainments of the current labour force.

Arid counties have comparative disadvantages in other indicators such as stunting rates and teenage pregnancy rates. Stunting impedes childhood development, adversely impacting learning and leading to negative long-term consequences on human capital. Teenage pregnancy has lasting implications on health, educational attainment, and the quality of the labour force, especially if the teenagers do not get back to school.

Table 8.5: Human capital indicators

Human Capital Indicators	Arid	Semi-arid (30-84%)	Semi-arid (10-29%)	Non-ASAL
Adult literacy rate (2019)	46.36	80.45	86.04	87.79
Pre-primary NER (2019)	27.16	70.94	76.42	79.00
Primary schools NER (2020)	38.53	84.96	84.01	87.12
Secondary schools NER (2020)	16.74	58.88	59.21	65.19
Percentage of stunted children (2022)	26.68	31.96	24.03	25.03
Percentage of children 12 -23 months fully vaccinated (2022)	62.00	75.76	73.61	80.76
Percentage of teenage pregnancy	21.42	16.36	16.73	12.39

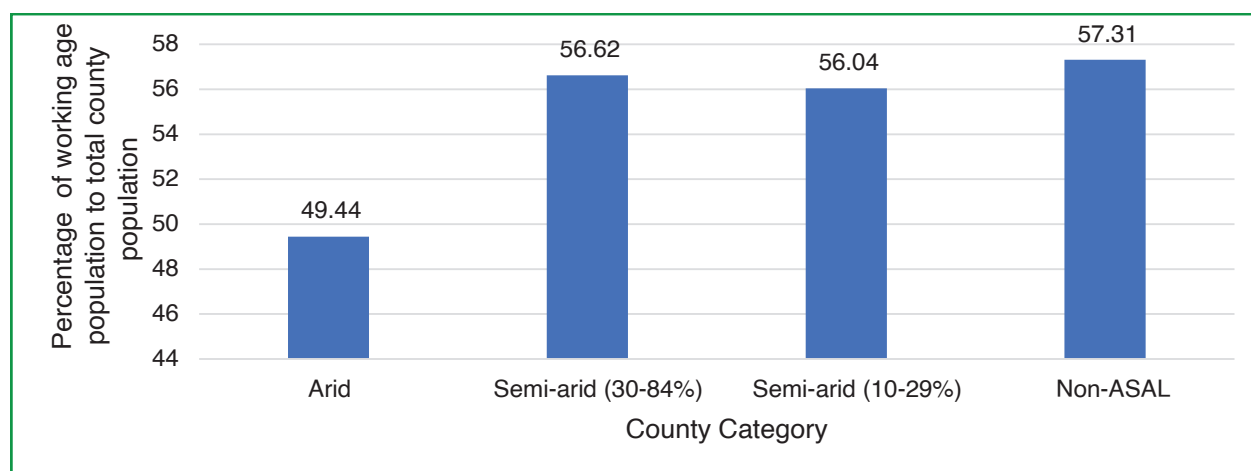
Data source: KDHS 2022, KPHC 2019, Basic Education Statistical Booklet, 2020

8.3.2 Working age population and employment status

The arid counties have a comparatively smaller size of the working age population as seen in the

lower percentage of the working age population to total county population. This indicates a lower quantity of labour, which creates challenges for economic growth and increases population dependency and incidences of child labour.

Figure 8.21: Percentage of working age population to total county population, 2019

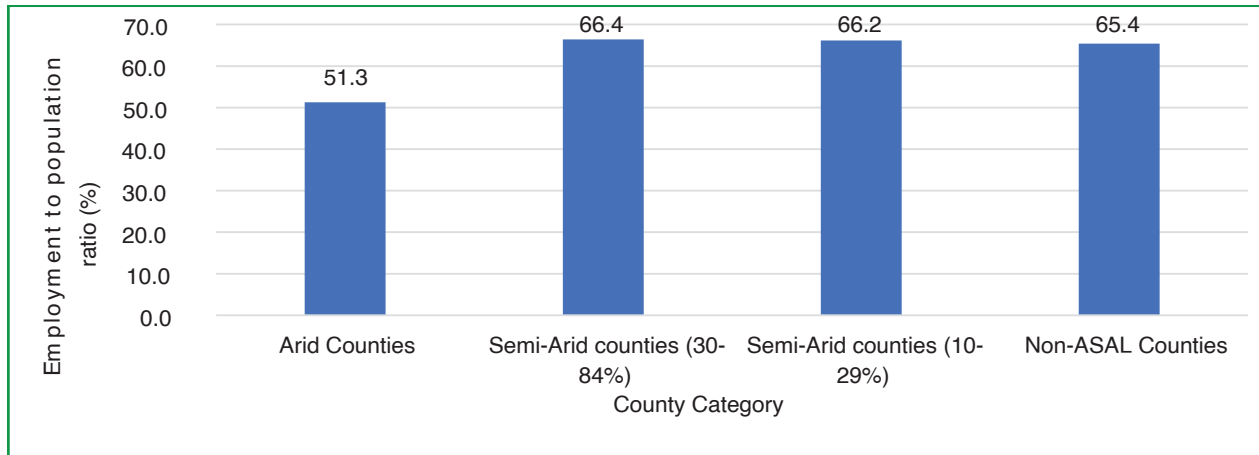


Data source: Author's computation using KNBS (2019) census data

Among the four categories of counties, arid counties showed lower employment to population rates compared to the rest of the county categories. Employment to population rates measure the extent to which available

labour resources are being used and indicates how efficiently an economy provides jobs for people who want to work. The lower rates in the arid counties are, therefore, indicative of challenges in labour utilization and job creation.

Figure 8.22: Employment to population ratio by county category, 2019

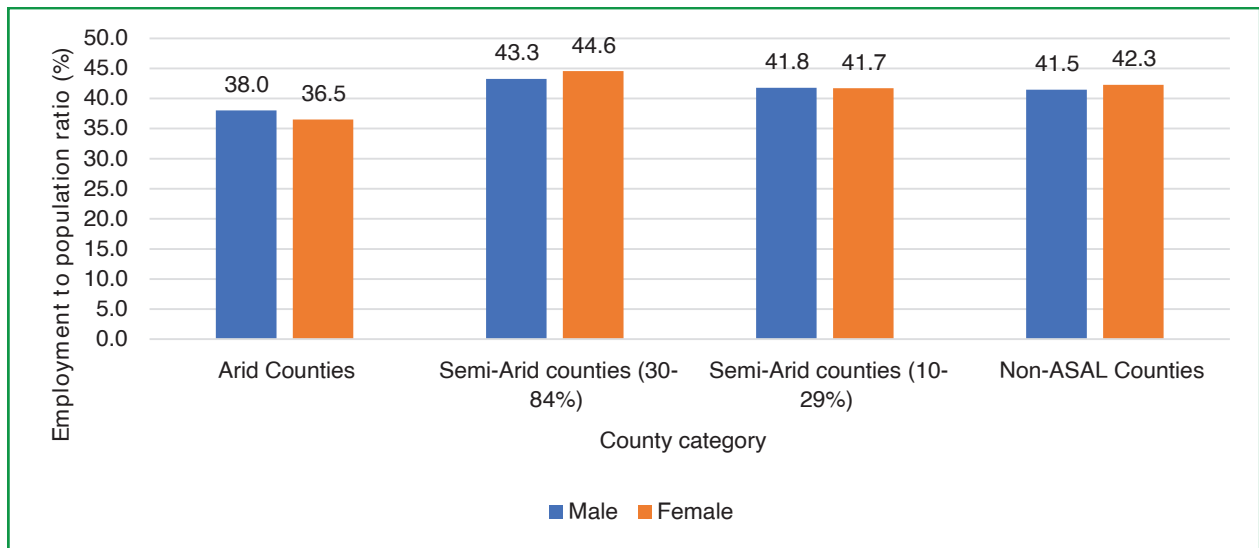


Data source: Author's computation using KNBS 2019 Census data

A disaggregation of employment to population ratio by gender shows that there is little disparity. The arid counties, however, show more employment to the population of males

than females, which contrasts with the other county categories. This means there is potential to even engage more women in productive economic activities.

Figure 8.23: Employment to population ratio by gender, 2019

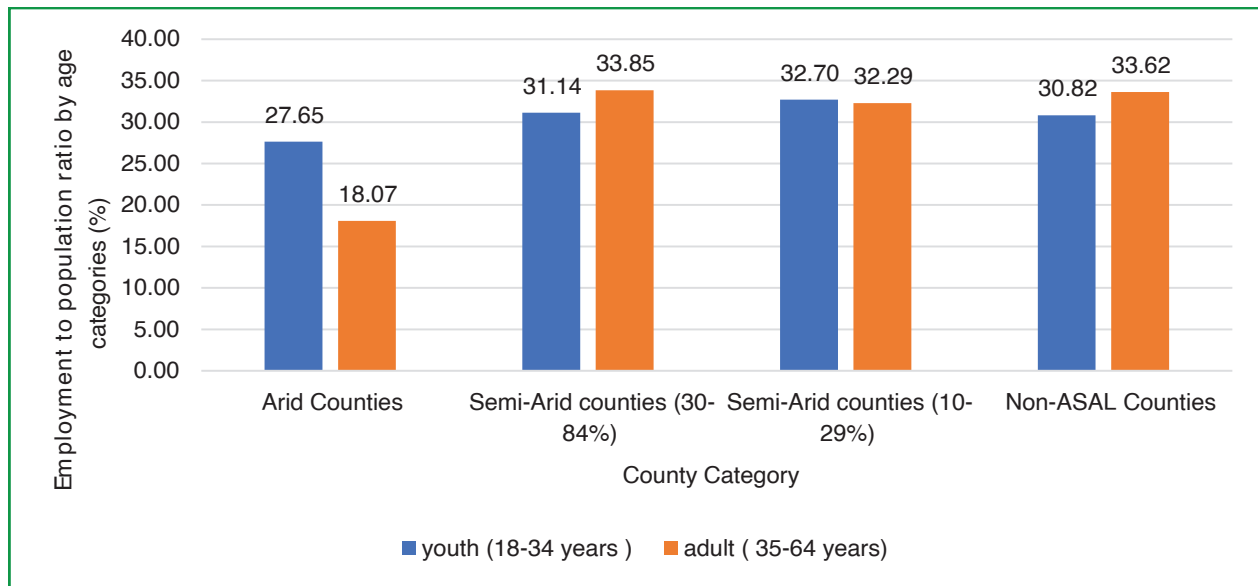


Data source: Author's computation using KNBS (2019) Census data

Disaggregation by the youth and non-youth age categories as defined by the Constitution of Kenya 2010 shows little disparity in the employment to population rates for the semi-arid and non-ASAL counties. In the arid counties, the employment to population rate is higher for the youth categories compared to the non-youth category. Since education is a key element for better employment opportunities,

the perceived low employability of the non-youth population due to lower education attainment likely contributes to lower employment to population rates in these counties. This affects the quantity of labour available to produce county output and has implications on county economic performance and individual savings and investments.

Figure 8.24: Employment to population by age category, 18-34 and 35-64 years, 2019

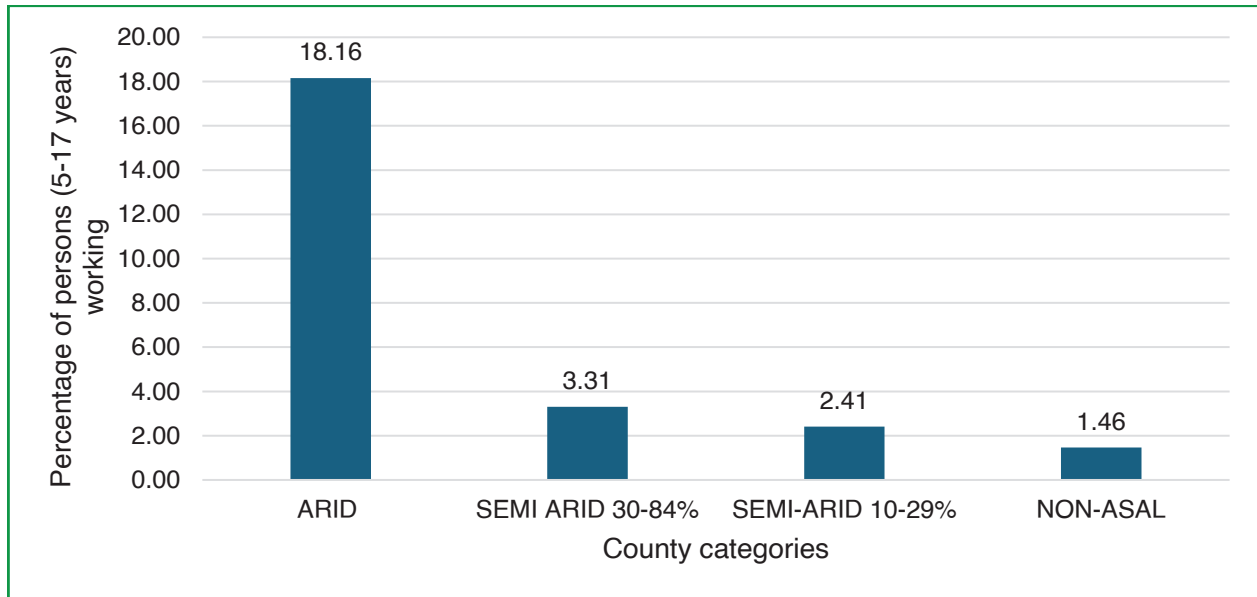


Data source: Author's computation using KNBS (2019) Census data

The percentage of persons under 18 years working (5-17 years) in arid counties is higher when compared with the other categories of counties. The cultural practices may explain this as children and teenagers in pastoral communities play an important role in livestock production as they graze the livestock. Although this is critical in helping them attain indigenous knowledge that is critical for the sustenance of pastoralism, it is at the expense of early

attainment of formal skills needed for alternative livelihoods and industrial transformation of counties. Climate change through frequent droughts that force communities to migrate, coupled with insecurity caused by frequent banditry attacks in the arid counties disrupt learning activities and are a possible cause of the high out-of-school children engaged in economic activities.

Figure: 8.25: Percentage of persons (5-17 years) working by county category, 2019

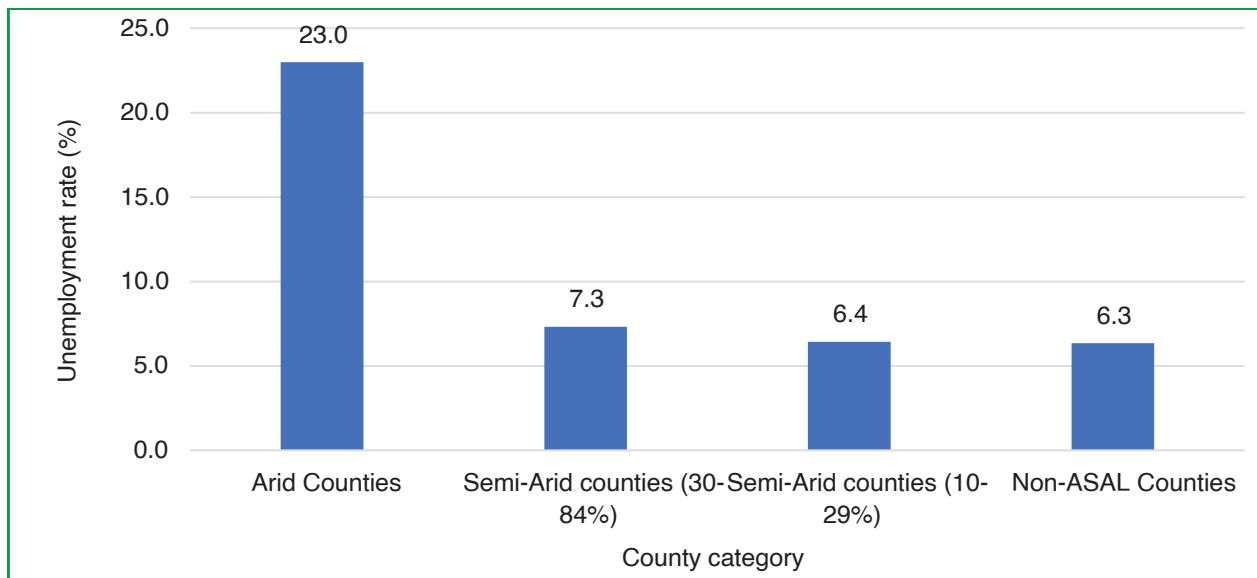


Data Source: Author's computation using KNBS (2019) Census data

8.3.3 Unemployment rate

Arid counties showed a higher overall unemployment rate compared to the other county categories as shown in Figure 8.26.

Figure 8.26: Unemployment rate by county category, 2019

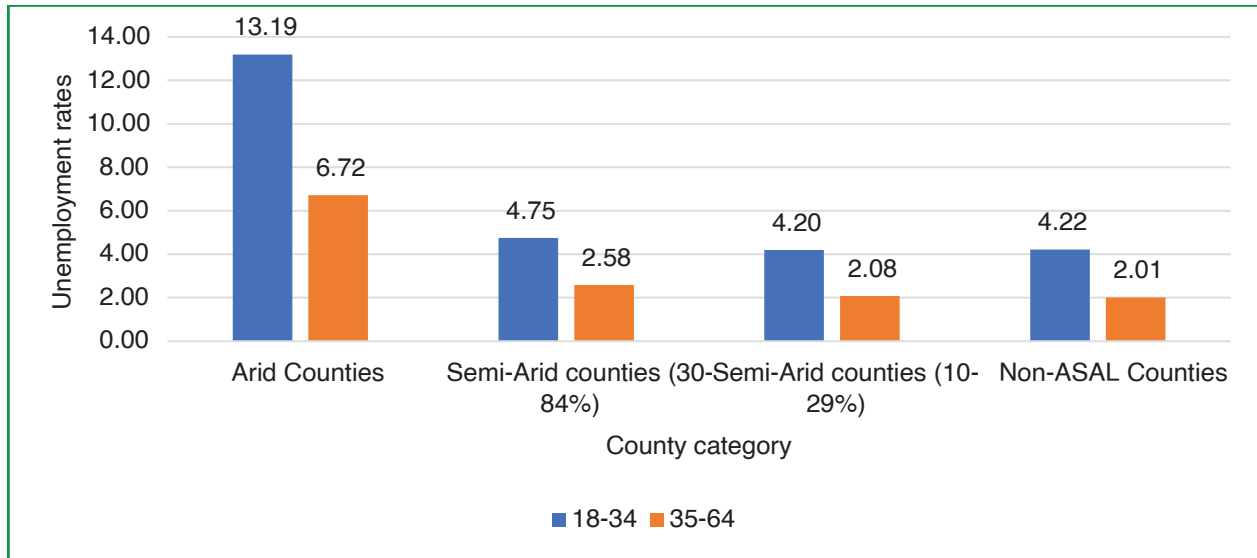


Data source: KNBS (2019) Population Census

Although unemployment rates are higher for the youth category (18-34 years) in all categories of counties, the arid counties have comparatively higher unemployment rates for both the youth

and non-youth categories (figure 8.27). This strongly indicates labour under-utilization in the arid counties.

Figure 8.27: Unemployment rate by age category, 2019

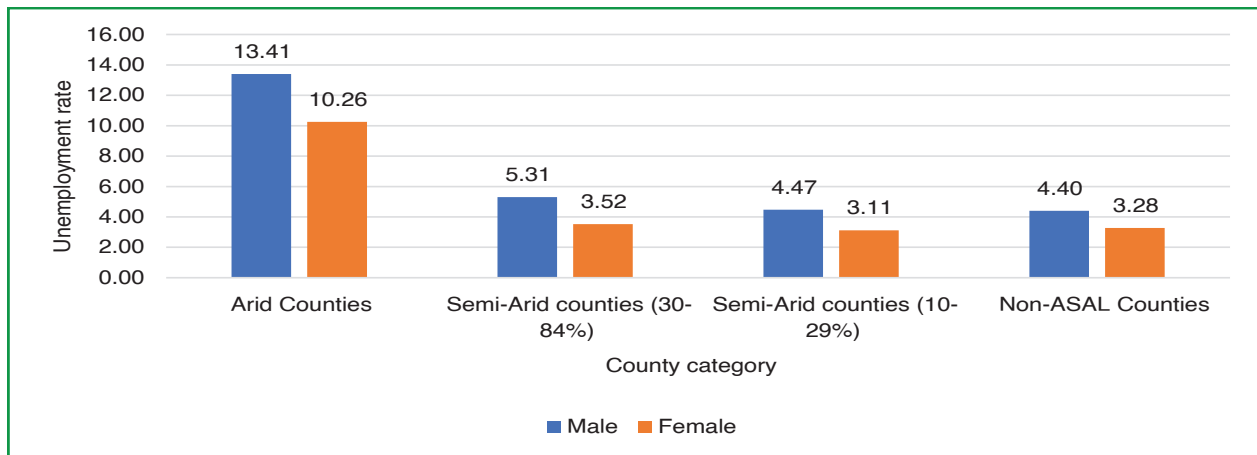


Data source: Author's computation using KNBS (2019) Population Census

A disaggregation of unemployment by gender shows higher unemployment rates among males compared to females in all county categories (Figure 8.28). Men are more likely

than women to actively seek work as women engage in unpaid care work that constrains labour participation.

Figure 8.28: Unemployment rate by gender, 2019



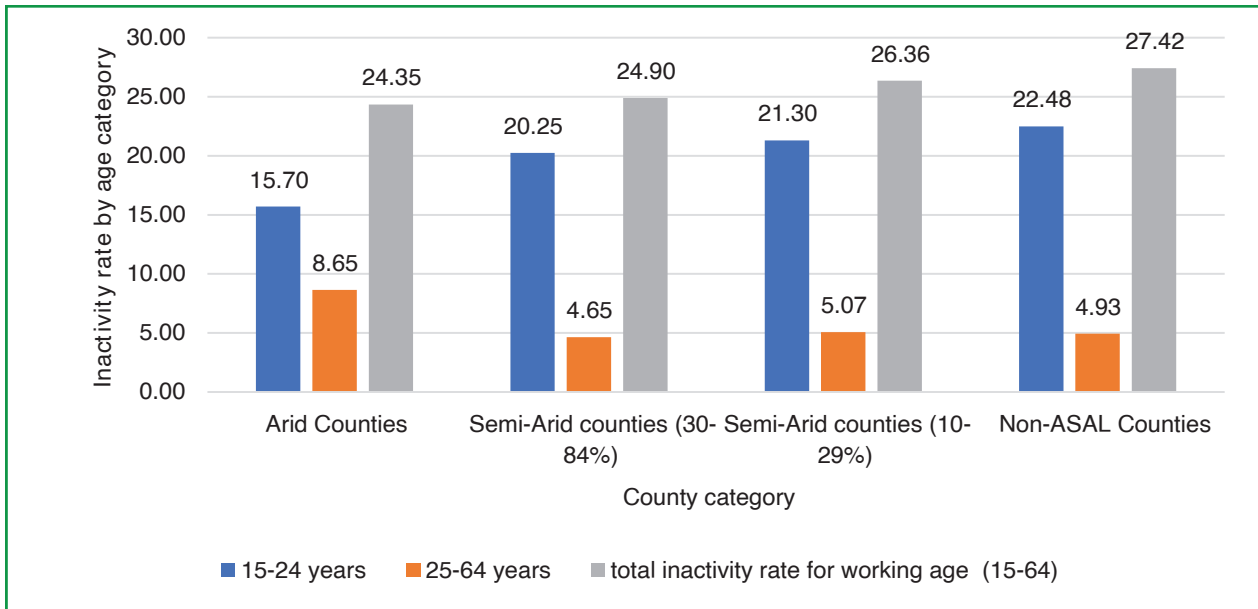
Source: Author's computation using KNBS 2019 Population Census

8.3.4 Inactivity rate

There are little disparities in total inactivity rates between counties regardless of their levels of aridity. All county categories show high inactivity rates for individuals 15-24 years, which is

expected as this age category is still seeking education. However, the higher inactivity rates for persons of prime age in the arid counties compared with the other counties is of concern as it indicates lower labour utilization.

Figure 8.29: County labour inactivity by age categories, 2019

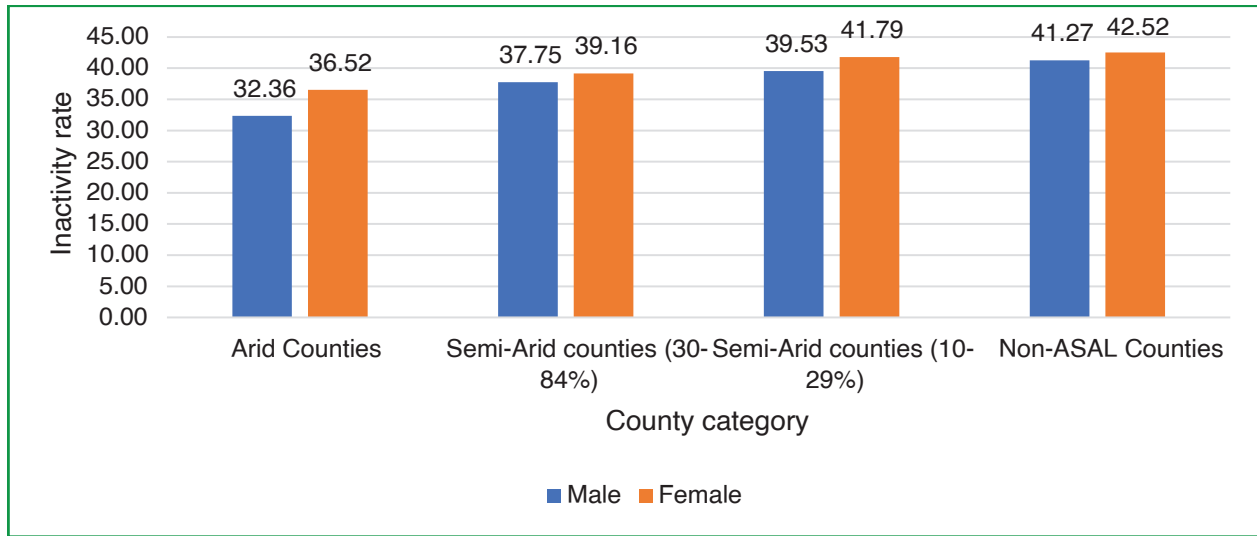


Data source: KNBS (2019), Population Census

All county categories showed slightly higher inactivity rates by females compared to men (Figure 8.30). Often, women who would like to

have a job but are constrained by excessively heavy and unequally shared household and care work.

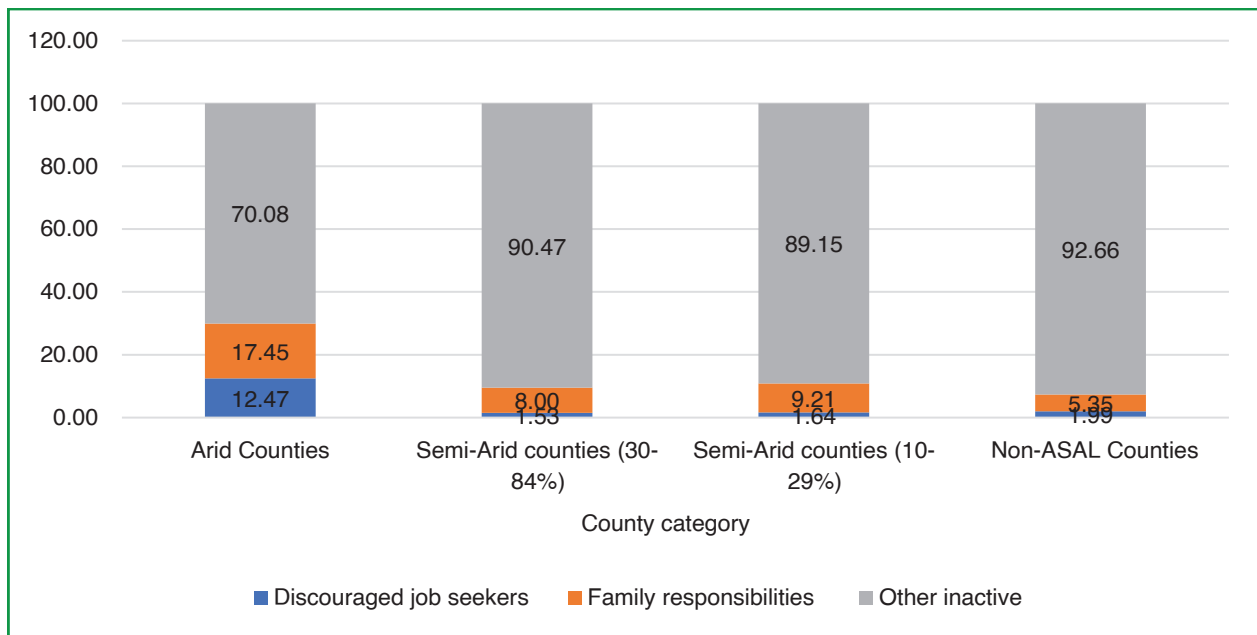
Figure 8.30: Inactivity rate by gender



The high inactivity by discouraged jobseekers in arid counties is of concern as these potential workers are generally considered under-utilized (Figure 8.31). A majority of these job seekers cite lack of jobs in their locality as the main reasons why they chose not to seek work. The arid counties also showed higher percentages of people not working due to family

responsibilities such as homemaking and child caring responsibilities which also explains Figure 8.30, which showed females having higher inactivity rates. This is another indicator of labour under-utilization as it consists of persons who would like to have employment but are constrained.

Figure 8.31: Reasons for inactivity by county category, 2021



Source: Author's computation using KNBS Kenya Continuous Household Survey 2021

8.4 Sectoral Employment

The agriculture sector is the main source of employment for most counties regardless of the aridity levels, employing 51-60 per cent of the county population as shown in Figure 8.32. The semi-arid counties (30-84%) have the highest reliance on agriculture for employment while the arid counties have the lowest at 51.6 per cent. The agriculture sector is often associated with low productivity. It is seen as a reservoir of under-employed workers as the common perception is that it is for those who have not secured formal employment. The continued dominance of the agriculture sector in the share of employment indicates a low transfer of labour out of agriculture into higher productivity sectors such as industry and services.

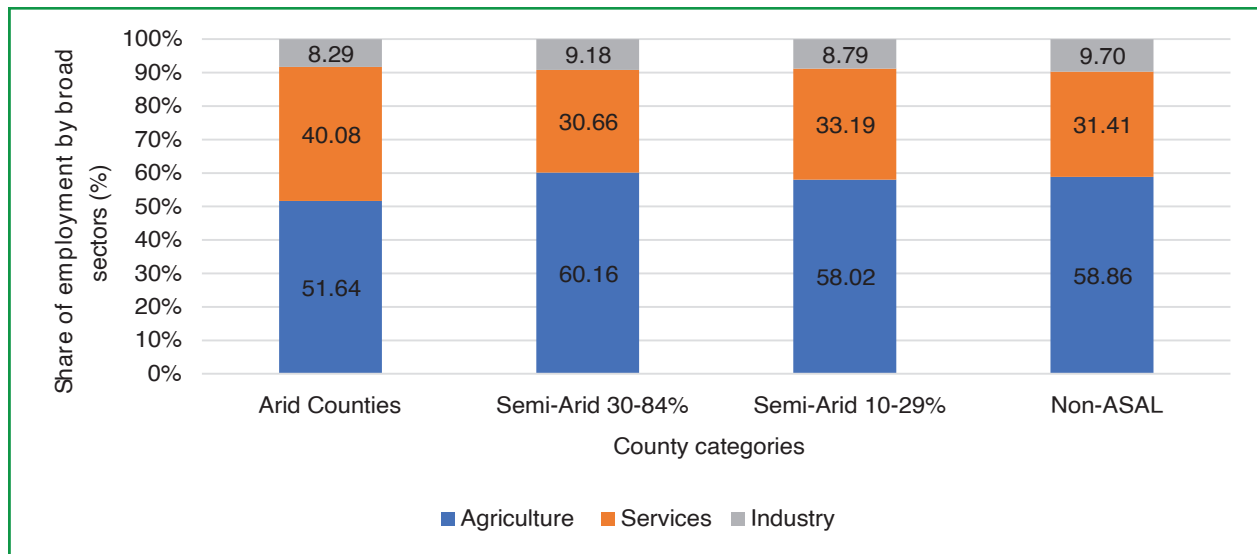
The shocks caused by climate change are some of the push factors that lower reliance on agriculture employment in arid counties, leading to the transfer of labour into sectors less affected by climate change. For arid counties, the services sector has provided labour flows from agriculture, as it is the second highest employer. There is less labour in industry, which could indicate low investment in industries that

would pull labour from agriculture. The share of employment in the industry sector is the lowest in all categories of counties. It is, however, comparatively higher in the semi-arid (30-84%) counties.

Agro-processing presents opportunities for the transfer of labour from agriculture to industry. For arid counties, opportunities lie in the leather industry as the counties are predominantly practicing livestock production. Investment in the leather industry presents benefits to livestock production not only by increasing the potential incomes but also by helping improve animal husbandry and provision of extension services. There are 16 tanneries in Kenya; eight (8) in Nairobi County, three (3) in Kiambu County, two (2) in Machakos County, and one (1) each in Nakuru, Kilifi, and Narok counties,³⁰ indicating a sub-optimal distribution of the tanneries across counties. Similarly, data from the Kenya Association of Manufacturers show that although there are 1,786 MSMEs within the Kenyan leather value chain, the majority are within major cities and towns in semi-arid and non-ASAL counties.

³⁰ <https://leathercouncil.go.ke/list-of-tanneries/>

Figure 8.32: Share of employment by broad sectors per county category, 2021



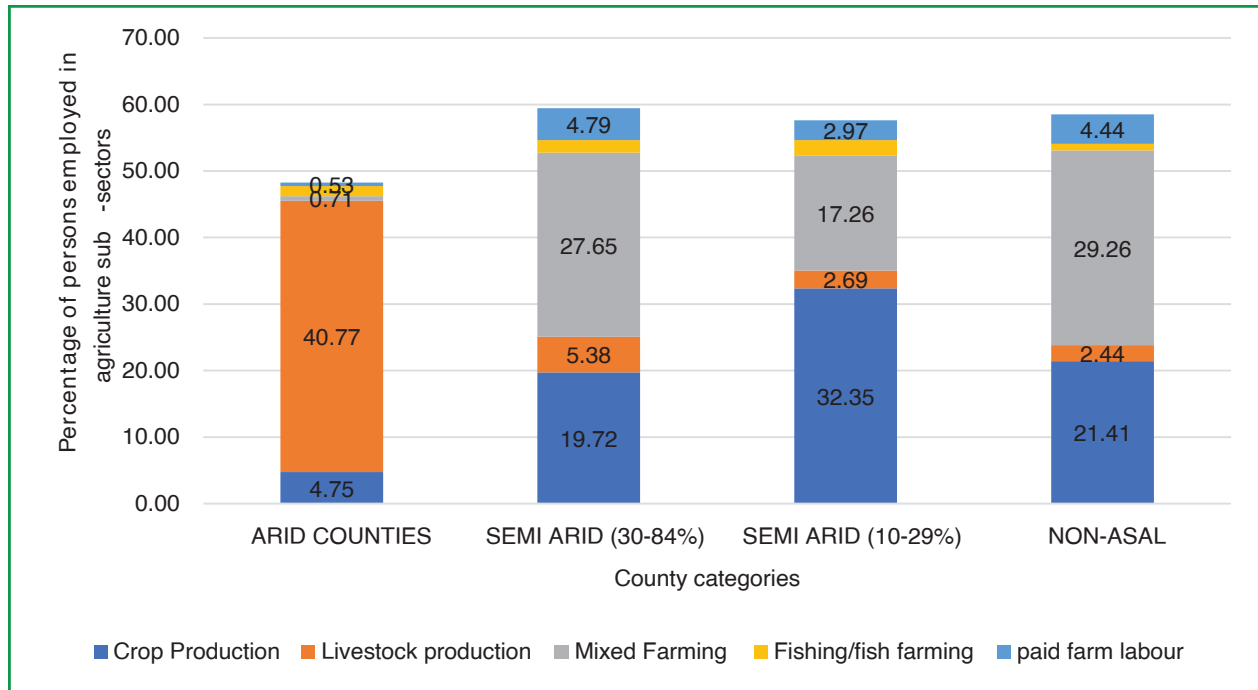
Data source: KNBS (2021), Kenya Continuous Household Survey

8.4.1 Employment in agriculture

A disaggregation of employment in the agriculture sector shows that for arid counties, the majority are employed in the livestock

sector, with a small proportion involved in crop production. Mixed farming is dominant in semi-arid (30-84%) and non-ASAL counties. Among the semi-arid (10-29%) counties, crop production is dominant.

Figure 8.33: Employment in agriculture sub-sectors by county category, 2021



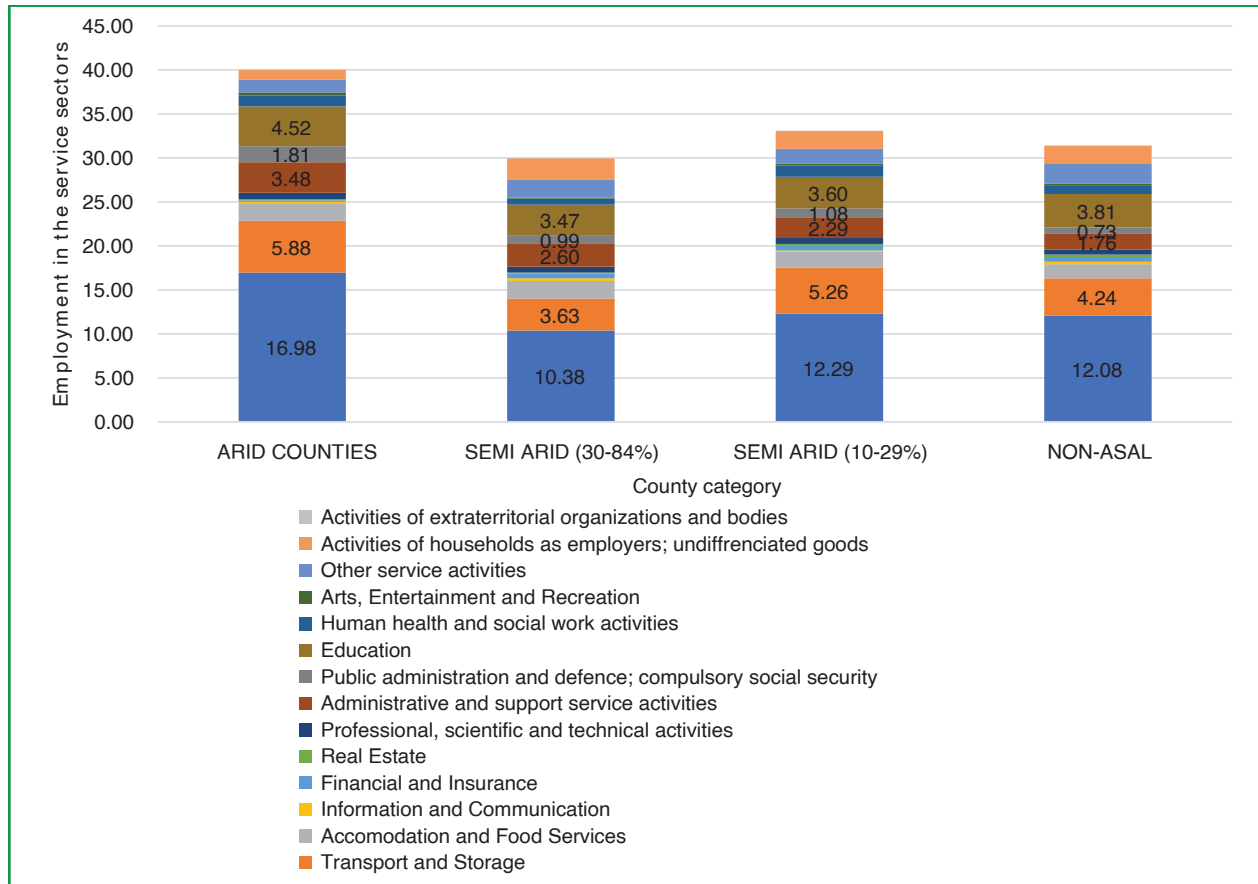
Source: Author's computation using KNBS (2021) Kenya Continuous Household Survey 2021

8.4.2 Employment in the services sector

The majority of the employment in the services sector is in the wholesale and retail trade, which is dominated by the informal sector and is associated with low productivity. The public administration and defense sector, which dominated the arid counties services GVA has a low share of employment at 1.81 per cent

because of its low employment capacity and limits set by the Public Finance Management regulations. The transport and storage sector, which dominated the services sector output in the semi-arid and non-ASAL counties has shares of employment at 3.63 per cent, 5.26 per cent and 4.24 per cent for semi-arid (30-84%), semi-arid (10-29%) and non-ASAL counties, respectively.

Figure 8.34: Employment in the services sector by county category, 2021



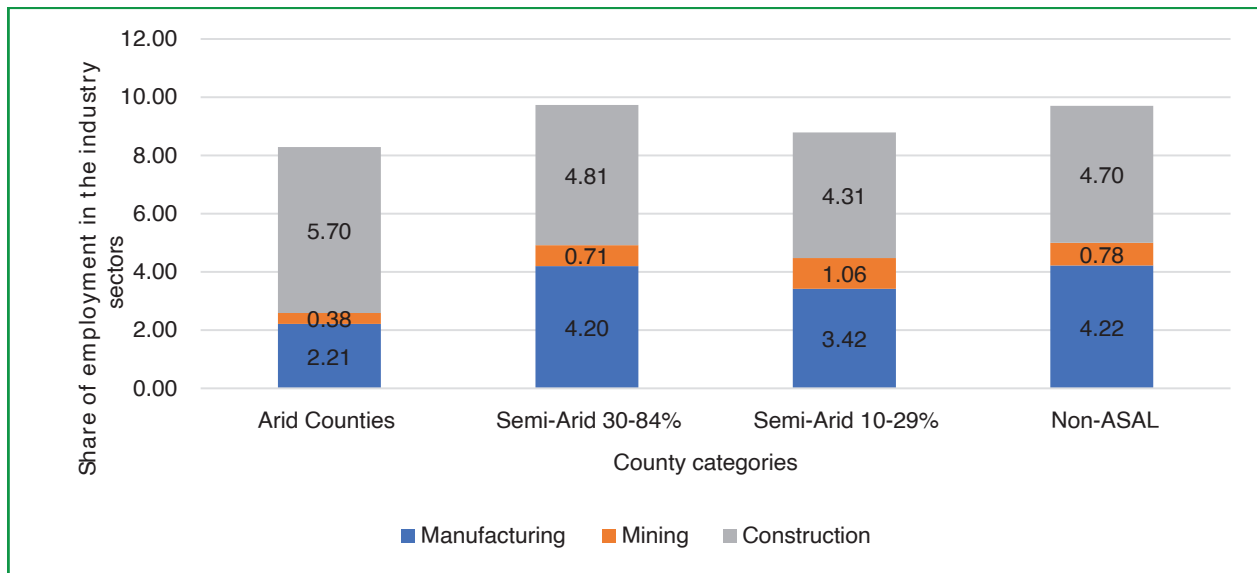
Source: Author’s computation using KNBS (2021), Kenya Continuous Household Survey

8.4.3 Employment in the industry sector

Employment in the industry sector is low when compared to the other broad categories and is mainly concentrated in the construction and manufacturing sectors. Employment in the construction sector is particularly dominant in arid counties. There is little disparity in the

employment share of manufacturing and construction sectors in the semi-arid (30-84%) and the non-ASAL counties. The construction sector is highly volatile, and employment in the sector is subject to significant fluctuations. The construction industry is also subject to seasonal employment patterns, raising concerns over the sustainability of employment in the sector.

Figure 8.35: Employment in the industry sector by county category, 2021

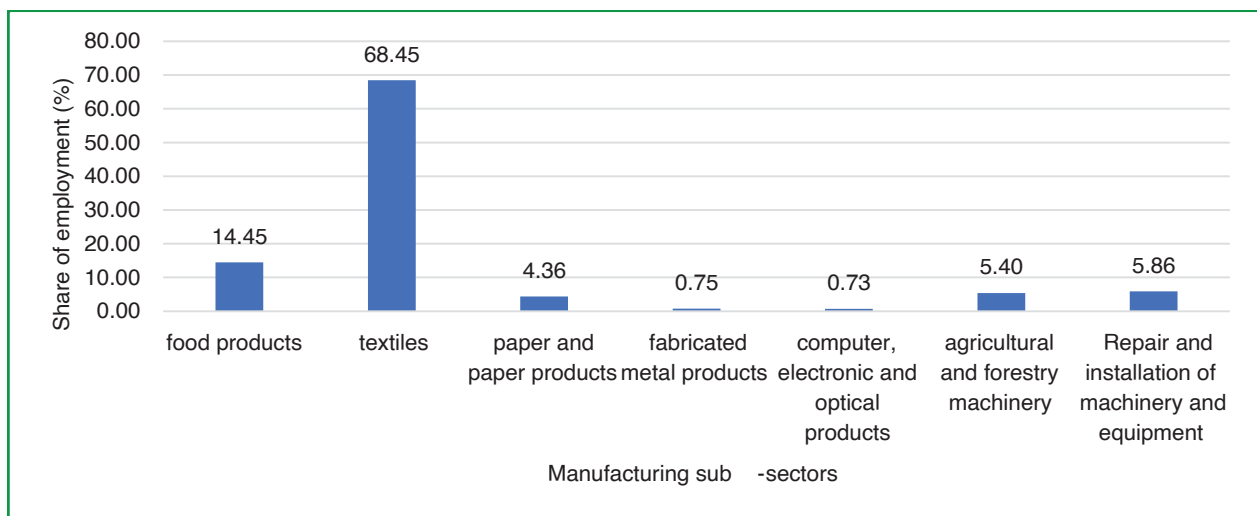


Source: Author's computation using KNBS (2021) Kenya Continuous Household Survey

Employment in the manufacturing sector in the arid counties is in few sub-sectors as shown in Figure 8.36. This reflects the presence of few manufacturing firms in these counties. Low technology manufacturing firms have the highest share of employment. Although

these counties have raw materials for the leather industries, survey data from the Kenya Continuous Household Survey 2021 did not establish presence of employment in the leather industry, indicating untapped potential in the leather value chain in these counties.

Figure 8.36: Arid counties' share of employment in the manufacturing sector, 2021

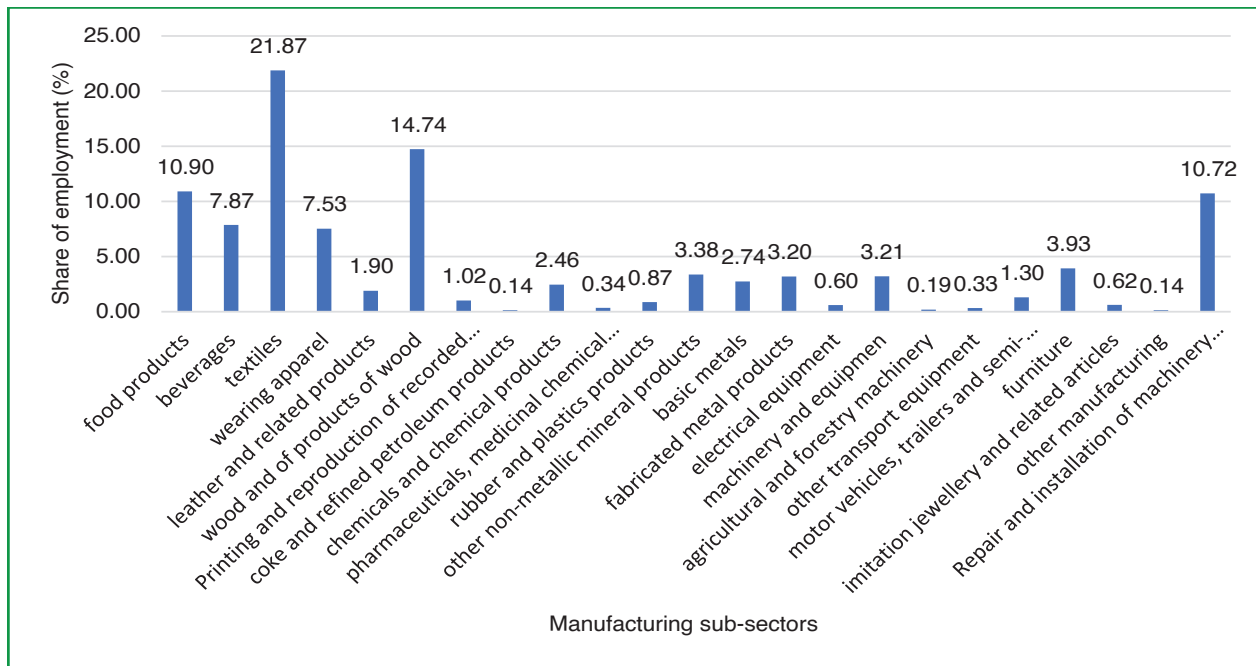


Source: Author's computation using KNBS (2021) Kenya Continuous Household Survey

The semi-arid (30-84%) have employment more spread across various sub-sectors of the manufacturing sector. Despite this, employment is still concentrated in the low technology manufacturing such as textiles and

food products. These counties have created employment in the leather industry, thus taking advantage of the advantages they have in livestock production.

Figure 8.37: Semi-arid counties (30-84%) share of employment in the manufacturing sector, 2021

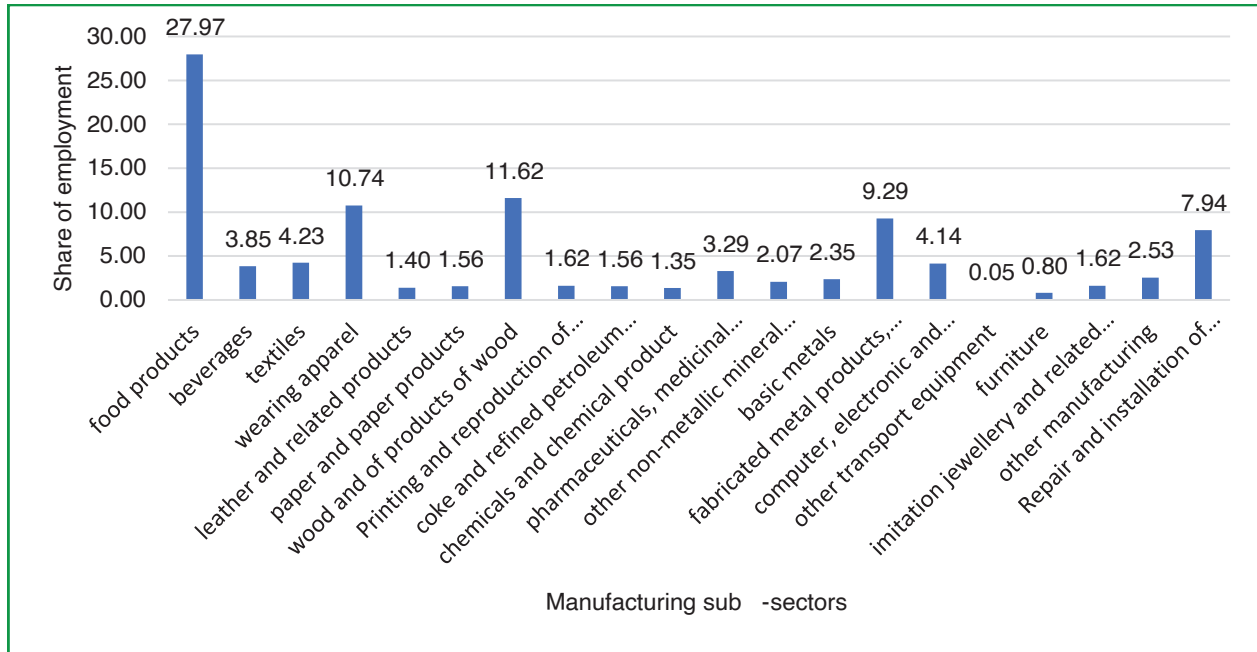


Source: Author's computation using KNBS (2021) Kenya Continuous Household Survey

Similarly, the semi-arid counties (10-29%) have employment more spread across various sub-sectors of the manufacturing sector, with

employment concentrated in the low technology manufacturing as shown in Figure 8.38.

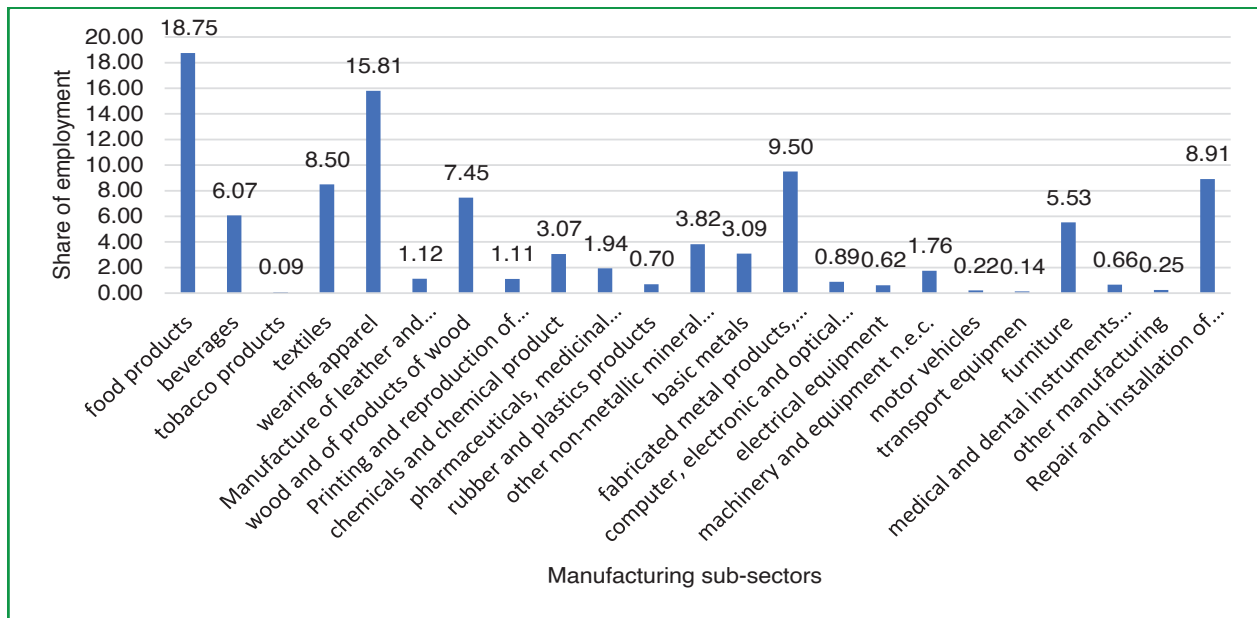
Figure 8.38: Semi-arid counties (10-29%) share of employment in the manufacturing sector, 2021



Source: Author's computation using KNBS (2021) Kenya Continuous Household Survey

Likewise, the non-ASAL counties have more manufacturing sub-sectors still dominate the share of employment (Figure 8.39). Likewise, the low technology sub-sectors although,

Figure 8.39: Non-ASAL counties' share of employment in the manufacturing sector



Source: Author's computation using KNBS (2021) Kenya Continuous Household Survey

8.5 County Labour Productivity

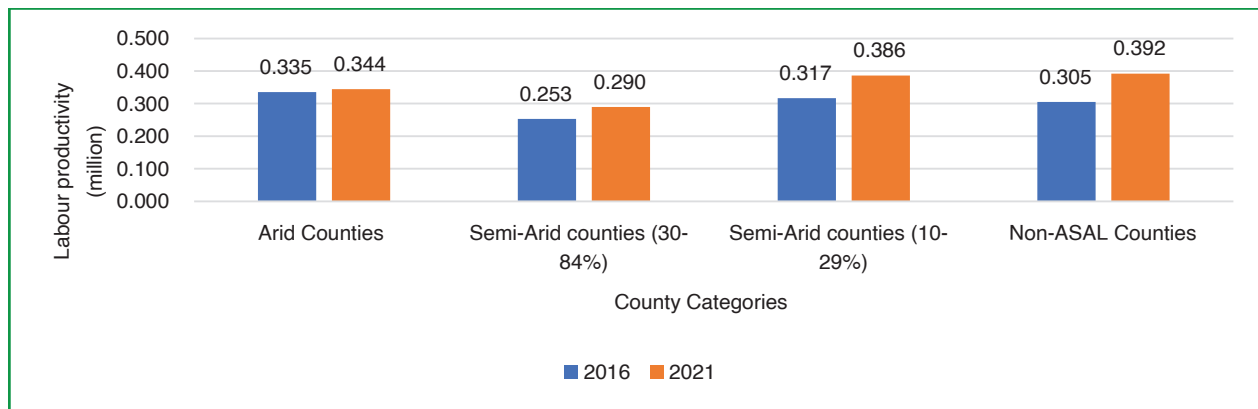
8.5.1 Overall labour productivity

County labour productivity was computed and measured as County Gross value added per labour for two years (2016 and 2021) as per the available data on employment.³¹ The city counties of Nairobi, Mombasa, Kisumu, and Nakuru had the highest labour productivity levels. Cities and urban areas have advantages in essential infrastructure, and higher population density, which attracts scale economies and hence higher labour productivity.

³¹ The measure used is the apparent labour productivity measured as gross value added per person employed.

A comparison of the ASAL and non-ASALs established that non-ASAL counties have the highest labour productivity growth rates (between 2016 and 2021) at 28.3 per cent, and semi-arid (10-29%) at 21.9 per cent, semi-arid (30-84%) at 14.3 per cent while arid had the lowest growth at 2.8 per cent. Semi-arid (30-84%) showed lower productivity in both years. The counties in this category rely heavily on agriculture for employment despite agriculture having a lower share of county GVA. These counties also rely on crop production and mixed farming for employment, despite having lower maize yield.

Figure 8.40: Labour productivity by county category, 2021



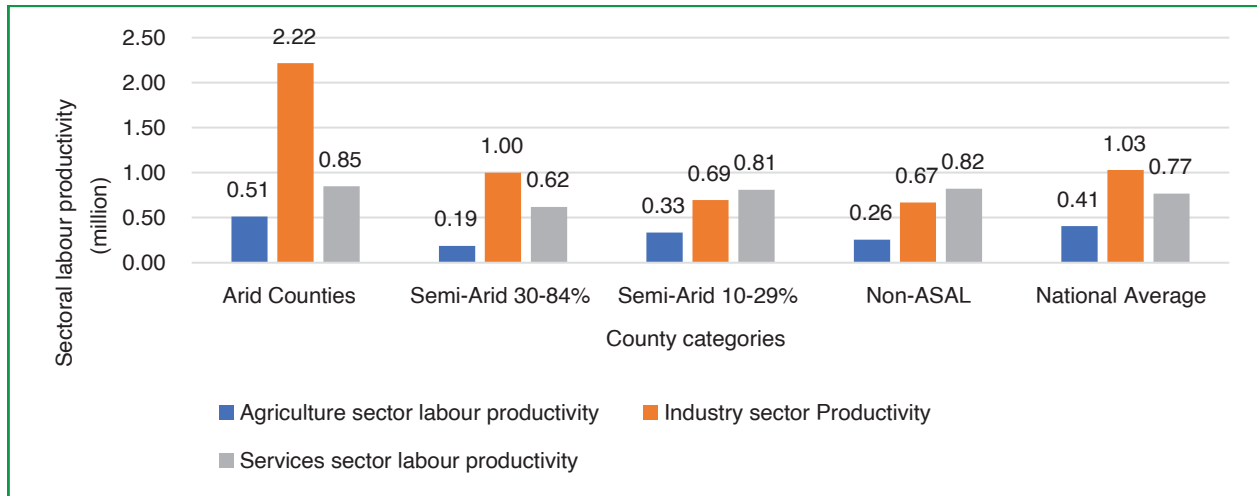
Source: Author's computation using KNBS KCHS (2021) and KNBS GCP (2021)

8.5.2 Sectoral labour productivity

Labour productivity in the industry sector is highest in arid and semi-arid (30-84%) counties, while the services sector has higher labour productivity in the semi-arid (10-29%) and non-

ASAL counties. For all categories of counties, agriculture has the lowest productivity despite having the highest share of employment. This reflects the dominance of small-scale, low technology production systems that result in low agricultural output.

Figure 8.41: Labour productivity per broad sector by county category, 2021

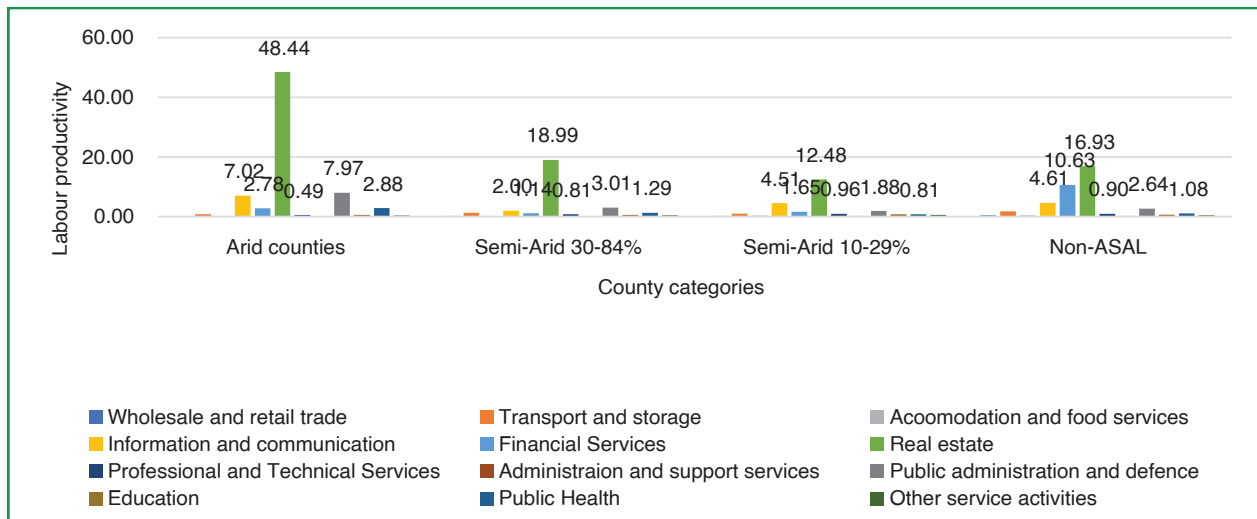


Source: Author's computation using KNBS KCHS (2021) and KNBS GCP (2021)

A disaggregation of industry labour productivity shows that for the arid counties, higher labour productivity is in the manufacturing sector while the electricity sector has high labour productivity for the other three categories of counties. This is attributed to the high output of the electricity supply in these counties that have significantly exploited electricity supply sources, such as hydropower in the seven

forks dams and geothermal in central and North Rift ASAL counties. Although electricity supply had shown growth in output for the arid counties, the employment levels were low and were not captured in the survey data to enable computation of labour productivity. This indicates the low employment capacity of high capital-intensive industries, such as electricity supply.

Figure 8.42: Labour productivity in the industry sectors, 2021

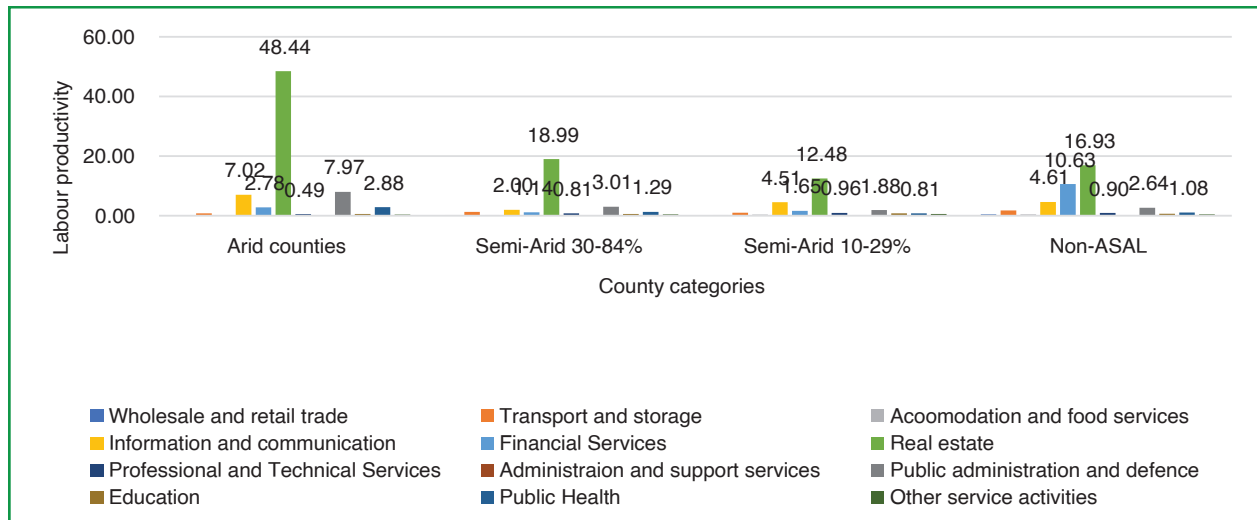


Source: Author's computation using KNBS KCHS (2021) and KNBS GCP (2021)

A disaggregation of labour productivity for the services sectors showed that the real estate sector had the highest labour productivity for all categories of counties. This sector entails buying, selling, renting, and operating of self-owned or leased real estate and the activities of real estate agents. In the arid counties, the low employment levels in the real estate sector

vis a vis the output explains the higher labour productivity. The output for the real estate sector in arid counties is mainly the operation of self-owned or leased real estate in the towns and urban centres. Wholesale and retail trade has the lowest labour productivity in all categories of counties, despite having the highest share of employment among the services sectors.

Figure 8.43: Labour productivity in the services sectors, 2021

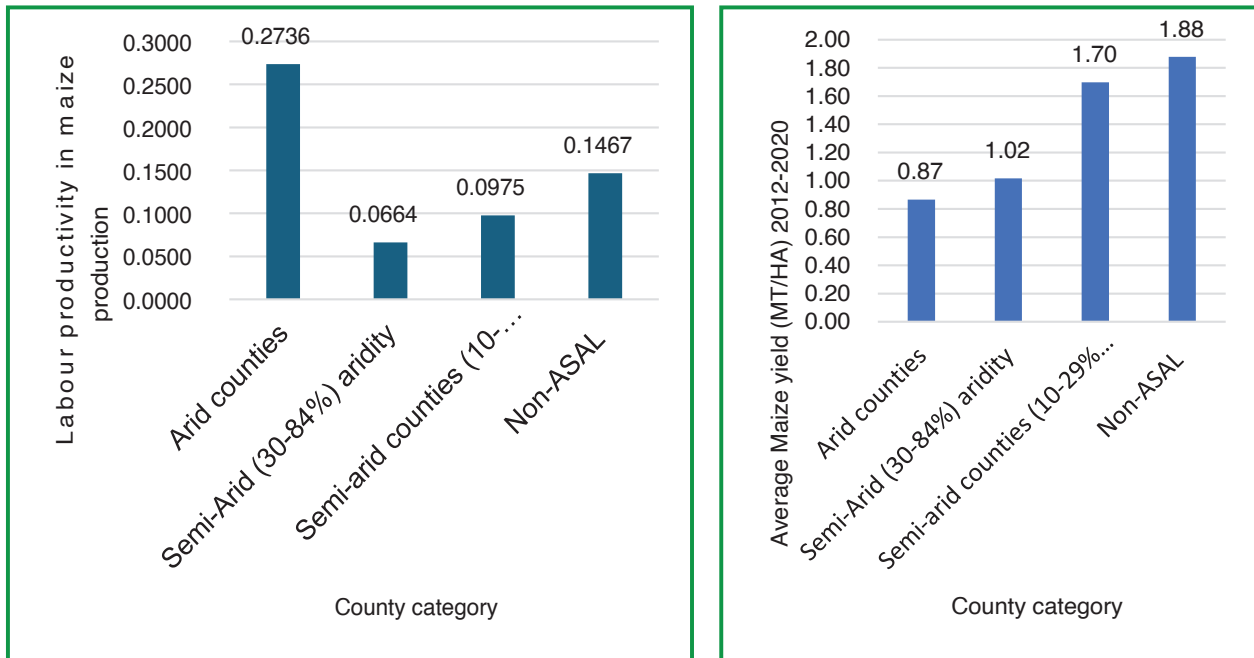


Source: Author's computation using KNBS KCHS (2021) and KNBS GCP (2021)

A disaggregation of labour productivity in the agriculture sub-sectors was limited by the availability of gross value added for crop and livestock sub-sectors. However, an analysis of labour productivity in maize production using available data on maize yield revealed low labour productivity in semi-arid counties that have a higher number of persons involved in

maize production. The arid counties show higher labour productivity as the labour involved in maize production is low. Although non-ASAL counties have higher labour in maize production, they also have comparative advantages in maize production, and therefore higher labour productivity.

Figure 8.44: Labour productivity in maize production **Figure 8.45: Average maize yield**

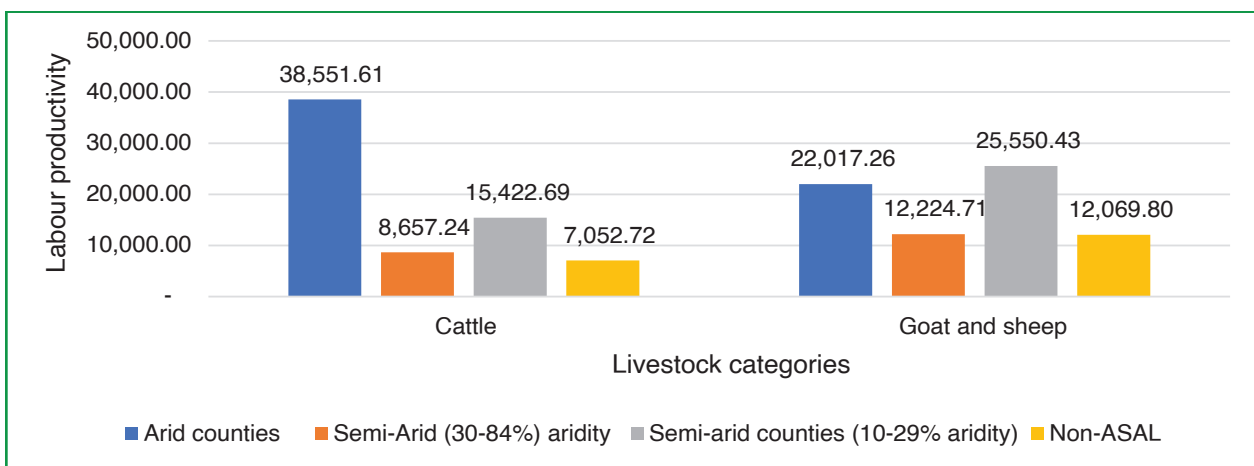


Source: Author's computation using NIPFN (2020) data and KNBS KCHS (2021)

Using available data on livestock production and analysis of labour productivity, arid counties have higher labour productivity in livestock production, particularly in the rearing of cattle. The semi-arid counties (10-29%) have higher labour productivity in the rearing of goats and sheep. The semi-arid (30-84%) and the non-

ASAL counties have lower labour productivity in livestock production. The concern is mainly for the semi-arid counties (30-84%), that continue to have low output in crop and livestock production despite having the highest share of employment in the agriculture sector.

Figure 8.46: Labour productivity in livestock production



Source: Author's computation using NIPFN (2020) data and KNBS KCHS (2021)

8.6 Key Messages and Recommendations

8.6.1 Key messages

1. County economic structures

Arid counties have the smallest gross value added and the highest episodic growth rates. The growth rate has been volatile because of climate change effects, which disproportionately affect arid counties, thus hindering convergence in economic growth across the counties. This notwithstanding, these counties have latent natural resources in the form of land, renewable energy sources and tourism that hold significant potential to grow their economies. However, challenges in access to essential physical and capital infrastructure and persistent insecurity inhibit optimal utilization of this potential.

2. Sectoral contribution to GVA

- i) Arid counties have comparative advantages in livestock production. These counties produce most of the beef cattle, sheep, and goats in the country and have significant livestock by-products, mainly hides and skins. However, livestock production is yet to be fully integrated into the leather value chain. Climate change through frequent and severe droughts is inhibiting the full realization of arid counties livestock production. Although interventions such as Index-Based Livestock Insurance and feed production have been rolled out by the government and the private sector, the uptake remains low.
- ii) The share of the services sector in county gross value added is the largest for all counties. However, in the arid counties, the non-market services (public administration and defense) dominate the service sector GVA, indicating smaller

contributions by the market services (private sector) to the county output. The contribution by accommodation and food services (proxies of the tourism sector) is very low despite significant tourism resources in the counties, signifying untapped potential.

- iii) The share of manufacturing in the arid counties industrial GVA is low and declining due to its slower growth rates. This is of concern since its backward and forward linkages with other sectors such as agriculture, trade, and manufacturing has the potential to drive economic transformation in the region. The construction sector dominates the arid counties' industry GVA due to increased urbanization and investments in essential infrastructure.

3. Quality and quantity of labour

- i) Arid counties have comparatively lower labour quality as reflected by lower basic education enrolment rates and health indicators that affect the quality of the future labour force. Additionally, these counties have a lower quantity of labour as seen in the smaller size of the working age population to total county population and lower employment to population ratio for the non-youth category. Lastly, the arid counties experience low utilization of the available labour as reflected by higher unemployment rates and higher inactivity rates for persons of prime age. Labour inactivity due to discouraged job seekers is comparatively higher in arid counties, indicating the presence of persons willing to engage in labour but are limited due to job unavailability.
- ii) Cultural practices, climate change, and insecurity are impeding the acquisition of formal skills by children and teenagers in arid counties. Although cultural practices are key to the acquisition of indigenous knowledge needed for the sustenance

of pastoralism, formal skills are needed for the economic transformation of the counties. Therefore, the acquisition of both skills is important for the counties to exploit their potential.

4. Sectoral employment

- i) There is a low transfer of labour from agriculture to other sectors as agriculture dominates the employment shares in all county categories. Employment in agriculture is comparatively lower in arid counties compared to semi-arid and non-ASAL counties, indicating climate-change induced push factors. The wholesale and retail trade absorbs labour from agriculture in these counties. The sector is characterized by high levels of informality and low output, leading to low labour productivity.
- ii) The construction sector dominates employment in the arid counties in the industry sector. The construction industry is often subject to seasonal employment patterns, raising concerns over the sustainability of employment in the sector. The manufacturing sector has the lower share of employment; furthermore, employment in this sector is concentrated in low technology manufacturing, such as food and textiles.

5. Labour productivity

- i) Arid counties had the lowest labour productivity growth between 2016 and 2021 compared to the other county categories. This indicates lower efficiency in the use of labour, which is attributable to climate change threats that lower the output from agriculture (which is the main employer) and concentration of alternative employment in low productivity services sectors such as the wholesale and retail trade. The low labour utilization due to inadequate job creating industries

explains the lower labour productivity growths.

- ii) Labour productivity in arid counties is highest in the industry and services sectors and lowest in the agriculture sector. Although high labour productivity is in capital-intensive sectors such as electricity supply, they have limited employment capacities and require high level skills. Manufacturing has high labour productivity in arid counties and can employ both low skilled and high skilled persons, thus creating more job opportunities.

8.6.2 Policy Recommendations

1. To optimize the livestock production potential in arid counties and grow the counties' economies, there is a need to:
 - i) Continue building climate resilience in the livestock sub-sector in arid counties. This can be achieved by increasing the uptake of weather-based insurance schemes for livestock production, promoting the use of asset-backed insurance and subsidizing premiums for disadvantaged pastoralists; optimal utilization of the information provided by the National Drought Management Authority through the drought early warning systems to encourage commercial offtake of livestock, which would help mitigate losses; counties can also consider establishing county livestock enterprise fund that will finance pastoralists to restock after drought episodes to accelerate recovery.
 - ii) Optimally exploit the livestock value chain in arid counties through the integration of livestock production into the leather value chain. This can be achieved by increasing the supply of hides and skins through strategies such as creating awareness among pastoralists on the value of hides

- and skins, increasing extension services to improve the quality of hides and skins, and facilitating aggregation and pooled sales of hides and skins to increase producers bargaining power. This needs to go in tandem with efforts that increase the number of leather processing facilities by providing incentives to local leather product manufacturers to establish tanneries in arid counties.
- iii) Increasing investments in meat processing for export. This will require increasing the number of modern abattoirs and meat processing facilities in the arid counties as a majority are in Nairobi and other major cities. Other key investments are implementing the livestock identification and traceability system, which will ensure that livestock products meet the food safety standards required by the international market; and promoting the growing of pasture for feed security to address the losses in the arid counties pastoral systems. This will go in tandem with innovations on better and drought-resistant fodder varieties. The agricultural innovation ecosystem has been largely focused on crops and dairy farming; there is a need for research to develop low-cost fodder varieties that target pastoralists.
2. To reduce the dominance of non-market services in arid GVA and encourage the development of market-oriented services, there is a need to:
 - i) Leverage tourism resources in the arid counties; this will entail marketing the tourist sites in the counties to encourage local and international tourism. Incentivizing players in the hotel and accommodation to invest in tourist facilities in the arid counties; leveraging on cultural tourism and desert safaris that are unique to the region; developing of resort cities that are part of the LAPSSSET project, which entails upgrading Isiolo and the towns near Lake Turkana to resort cities.
 - ii) Accelerate infrastructural development to open the region for investments. This includes fast-tracking and completing the LAPSSSET transboundary corridor that passes through the arid counties.
 - iii) Curb insecurity in the arid counties, especially banditry; there is a need to continue with the current efforts of deploying security services and establishing permanent security services in the areas most affected. But this needs to be done in tandem with using traditional institutions to encourage community-led peace building initiatives to achieve sustainable peace. In addition to measures against terrorism, there is a need for more community engagement in security decisions through community policing to enhance community resilience and improve intelligence gathering. There is also a need for more youth empowerment and engagement efforts to reduce radicalization.
 3. To create jobs and optimally utilize the labour in arid counties, there is a need to:
 - i) Provide incentives to attract investment in industries that expand employment opportunities. Currently, capital-intensive industries established in the arid counties are not adequately utilizing labour, and therefore the need to encourage investments in labour-intensive industries.
 - ii) Increase funding to businesses established by vulnerable groups such as women and youth to ensure inclusive support of persons in the informal sector.

4. To improve the quality of labour in arid counties, the national government needs:
 - i) To encourage participation in the Adult and Continuing Education programme to improve the quality of the current labour force. This can be done through increasing awareness campaigns on the benefits of adult learning targeting out-of-school youth and adults in arid counties; improving the effectiveness of adult learning centres in the arid counties by investing in mobile adult learning centres that target nomadic pastoralists who move during droughts; and increasing funding to the Adult and Continuing Education programme to increase the number of facilities and trainers.
 - ii) To accelerate the implementation of programmes aimed at improving the effectiveness of the education system in arid counties to improve the quality of the future labour force. This can be done through increasing funding to the programmes currently being implemented by NACONEK, such as mobile schools, school feeding programmes, and low-cost boarding schools.

¹ This chapter benefitted from the support and guidance of CGE Demetra simulations on productivity by Shadrack Mwatu (KIPPRA), Victor Nechifor and Emmanuele Ferrari (both from the JRC–Seville). Technical support during the drafting of the chapter was also provided by Dr Rose Ngugi and Dr Eldah Onsomu (both from KIPPRA).

LEVERAGING STRATEGIC PARTNERSHIPS IN UNLOCKING TECHNOLOGY TRANSFER

Technology is important in the socio-economic transformation and overall development of a country. Appropriate adoption and implementation of technologies are critical for enhancing productivity and inclusive growth. Inadequate access to technology undermines a country's potential in agriculture, energy, manufacturing, health, education, infrastructure development, digital economy, and various services sectors. The current reconfiguration of global economic order, the rise of new major economic powers, renewed engagement with traditional development partners, new dynamics of global governance, revitalization of South-South and Triangular Cooperation, and admission of the African Union as a permanent member of the G20 could provide an opportunity for deeper technology and innovation cooperation. For Kenya to benefit from the potential opportunities, strengthening strategic partnerships with both emerging and developed economies is imperative. Further, reforming policy and institutional environment is critical for attracting frontier technologies' investors. Similarly, the use, adoption, and adaptation of frontier technologies calls for the establishment of digital infrastructure, skills, financial inclusion, and availability of domestic credit. Lastly, the prioritization of strategic partnerships to harness technology for healthcare and vaccine production, development of sustainable textile and apparel industry, infrastructure development and connectivity and harnessing of skills, knowledge, and technical know-how emanating from international academic mobility are imperative for the enhancement of productivity and inclusive growth in Kenya.

9.1 Introduction

Technology has an enormous influence on the international system since it is one of the key determinants in shaping international relations (Mallik, 2016). Technology is central to human life as it shapes international affairs and diplomatic issues, including economic policies, energy, disease prevention, medicine, security, and nuclear proliferation (Giacomello et al., 2021). Further, technology is critical in pursuing national goals for countries, including promoting economic development and national security, and therefore, countries with technological edge are likely to gain strategic advantage over other

States and Non-State actors in the international system (Moran, 2022).

Countries depend on technology for long-term growth due to its impact on productivity, development of society, education, and economy through discovery, transfer, diffusion, and application of new knowledge. The relevance of technology to promote development calls for the need of every country to either generate its technology or acquire it from other States (Dos Santos, 2020). Therefore, International Technology Transfer is fundamental in sustaining the economic growth, industrialization, and development of a transferee country (Cinar et al., 2020).

Transfer of technology is one of the major components of technical cooperation (Mallik, 2016). Through the acquisition of knowledge, experience, equipment, and machinery, developing countries are likely to accelerate their socio-economic transformation and overall development.

Many countries tend to rely on technology invented abroad (Milner and Solstad, 2021). Consequently, technology has a political economy dimension as it plays a significant role in the distribution of wealth and power. Since technology is largely controlled by a few techno-economic powers and multinational corporations (MNCs), technology transfer has the potential to be employed as a strategic instrument by States to advance their national interests. Unequal access to technology is one of the obstacles to achieving sustainable and inclusive development (Pandey et al., 2021). The inequities in access to technology are deeply rooted in power asymmetries in the global economic and political order, which have shaped unequal development and technology transfer to developing countries.

The North-South technology transfer paradigm has traditionally denoted developing countries' reliance on technology from developed countries (Raslan, 2021; Urban, 2017). Historically, the North-South cooperation is perceived as a broad framework of development cooperation in the political, economic, social, cultural, environmental, and technical domains. However, the relationship has been largely characterized by power asymmetries in favour of developed countries. Countries in the Global South have increased their cooperation for decades in trade, agriculture, health, education, communication, research, infrastructure, and energy to address their common development challenges (United Nations Environment Programme, 2020). In various global forums, South-South Cooperation (SSC) has been endorsed as a mechanism for capacity development and technology transfer. Three pillars of development cooperation include financial assistance, technical assistance, and

knowledge sharing (Task Team on South-South Cooperation, 2011).

South-South Cooperation is anchored on horizontal partnerships based on equity, trust, mutual benefit, and long-term relations as an alternative development cooperation. Further, the key principles of South-South Cooperation include common endeavour of people and countries of the South based on shared experiences, common objectives, and solidarity; partnerships among 'equals' and free from conditionalities; respect for national sovereignty, ownership, and priorities as defined by national development plans and strategies. South-South Cooperation is informed by the core principles of the 1955 Bandung Conference (Asia-Africa Conference); the 1978 Plan of Action for Promoting and Implementing Technical Cooperation among Developing Countries (the Bueno Aires Plan of Action); the 2005 Bali Strategic Plan (BSP) on Technology Support and Capacity Building; the 2009 Nairobi Outcome Document of the High-level United Nations Conference on South-South Cooperation; and the 2015 Addis Ababa Action Agenda of the Third International Conference on Financing for Development.

South-South Cooperation (SSC) is an important means of development cooperation and technology transfer. Traditional development partners and the United Nations are increasingly supporting the SSC through triangular cooperation. Subsequently, South-South and Triangular Cooperation has emerged as an important modality for development cooperation and has been singled out as a vital mechanism for the implementation of the Agenda 2030 for sustainable development. Thus, South-South and Triangular Cooperation play a crucial role in accelerating human development as it has increasingly demonstrated its contribution to the development outcomes through a variety of flexible cooperation modalities, including knowledge exchanges, technology transfers, financing, peer learning, and support, and seeking common solutions to development challenges (UNDP, 2016). Through this

model of international cooperation, Southern development assistance providers can benefit from the financial and technical support, experience, and technical know-how of multilateral organizations and traditional development partners (FAO, 2014). Therefore, South-South and Triangular Cooperation is viewed as a pragmatic development cooperation model for the effective exchange of knowledge, experience, skills, resources, and technical know-how for the benefit of emerging and developing economies.

Leveraging strategic partnerships in unlocking technology transfer through South-South Cooperation, and South-South and Triangular Cooperation will be critical in enhancing productivity and inclusive growth for healthcare and vaccine production; adoption of frontier technologies, textile industry; and infrastructure development in Kenya. Since 2017, Kenya has elevated its bilateral relations with the world's major economies including China, the United States, the European Union, and the United Kingdom to strategic partnerships level. Moreover, Kenya's quest for deeper engagement with newly industrialized countries and other emerging economies from various world regions demonstrates potential strategic partnerships. With the deepening of bilateral relations with pivotal countries in the emerging multipolar world, it is expected that strategic partnerships will be entrenched in Kenya's multilevel diplomacy involving active participation from various state institutions and actors. Similarly, strategic partnership has been identified as crucial not only for the promotion of economic cooperation, international trade, and investment but also for the realization of the Bottom-up Economic Transformation Agenda (BETA) objectives. This chapter explores the significance of strategic partnership diplomacy in enhancing technology cooperation through revitalized South-South

Cooperation, and South-South and Triangular Cooperation models. Specifically, the chapter delves into how Kenya navigates the emerging multipolar economic order to attract appropriate technologies for its economic growth and development through strategic partnerships and South-South and Triangular Cooperation frameworks.

9.2 Reconfiguration of Global Economic Order

The reconfiguration of the global economic order represents a pivotal shift in the dynamics of international trade, finance, and governance. As geopolitical landscapes evolve, economic powerhouses realign, and technological advancements reshape industries; the traditional structures governing global economic relations are being challenged and transformed. This section examines the strategies nations are employing to navigate this evolving geopolitical landscape and provides a deeper understanding of the new economic paradigm taking shape on a global scale.

9.2.1 Role of BRICS in development cooperation

The emergence of new and resurgent global players is increasingly shifting the balance of power in the world economic order as shown in Table 9.1. The shift of the economic balance of power and subsequent restructuring of the global economic system could be an opportunity for the Global South to enhance its agency in the international development cooperation agenda. The increasing role of emerging economic powers and newly industrialized economies in development financing, technical assistance, and outward Foreign Direct Investment could expand opportunities for technology cooperation and knowledge transfer in the Global South.

Table 9.1: Major countries, regions, and their shares in aggregate GDP (%), 2005-2022

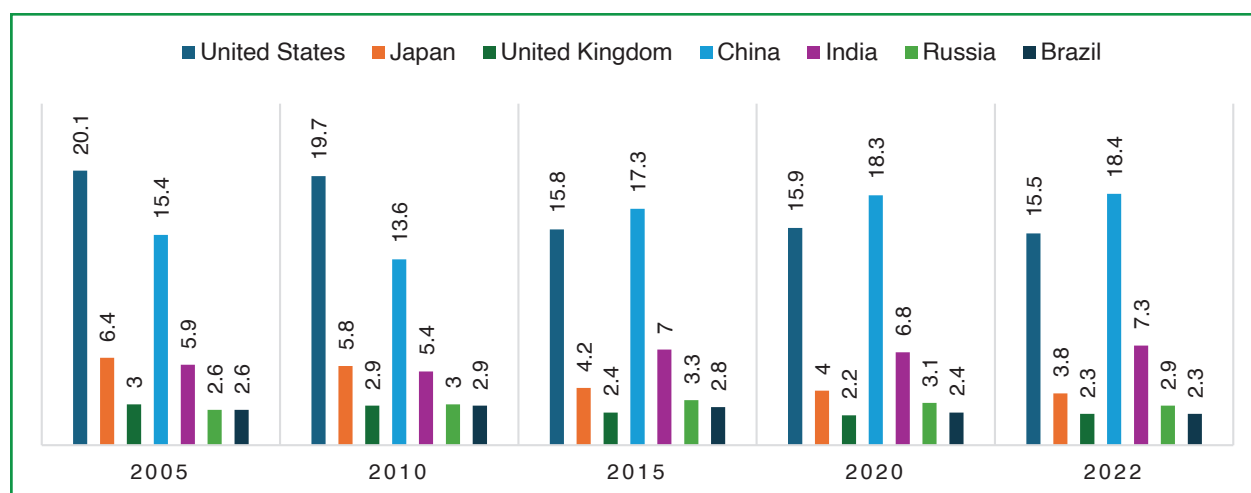
	2005	2010	2015	2020	2022
Advanced economies	52.3	52.3	42.4	42.5	41.7
Emerging markets and developing economies	47.7	47.7	57.6	57.5	58.3
European Union	14.8	14.6	12.0	12.0	12.0
United States	20.1	19.7	15.8	15.9	15.5
Japan	6.4	5.8	4.2	4.0	3.8
United Kingdom	3.0	2.9	2.4	2.2	2.3
Canada	1.8	1.8	1.4	1.4	1.4
China	15.4	13.6	17.3	18.3	18.4
India	5.9	5.4	7.0	6.8	7.3
Russia	2.6	3.0	3.3	3.1	2.9
Brazil	2.6	2.9	2.8	2.4	2.3
South Africa	----	----	----	0.5	0.6

Data source: IMF (Various), World Economic Outlook

The BRICS (Brazil, Russia, India, China, and South Africa) have emerged as a potential force to leverage their collective strengths to drive global economic growth, innovation, and adoption of frontier technologies. China's aggregate global GDP increased from 15.4 per cent in 2005 to 18.4 per cent in 2022 as shown in Figure 9.1. India has also made modest growth during the same period. The

United States' GDP decreased from 20.1 per cent in 2005 to 15.5 per cent in 2022. Further, Japan's GDP dropped from 6.4 per cent in 2005 to 3.8 per cent in 2022. With new members including Egypt, Ethiopia, Iran, Saudi Arabia, and the United Arab Emirates since January 2024, the BRICS+'s influence could make a significant impact on investment, innovation, and knowledge and skills sharing.

Figure 9.1: Trend in aggregate global GDP of major economic powers (%), 2005 - 2022



Data source: IMF (Various), World Economic Outlook (Various)

New institutions of transregional cooperation and connectivity such as the Belt and Road Initiative, New Development Bank, Contingent Reserve Arrangement (CRA), and Asian Infrastructure Investment Bank are critical in providing alternative development models (Duggan et al., 2022). Due to structural changes in the international system and power distribution shifts, strategic partnerships have become a significant feature of international relations (Michalski, 2019). Strategic partnership denotes privileged bilateral relationships between states and between States and non-State actors, to enhance diplomatic dialogue and solve myriads of development challenges at bilateral, regional, inter-regional, and global levels.

The trend of GDP growth for major economic powers from 2005 to 2022 reflects varying trajectories. The United States experienced fluctuations in GDP growth, with periods of expansion and contraction influenced by factors such as the global financial crisis of 2008. Japan's GDP growth showed a more subdued pattern, characterized by declining growth rates between 2005 and 2022. The United Kingdom faced economic challenges, including the impact of Brexit, which influenced its GDP growth over the years. China emerged as a global economic powerhouse, consistently exhibiting robust GDP growth, and positioning itself as a key player in the world economy. India demonstrated significant economic growth, driven by factors such as demographic trends and economic reforms. Russia's GDP growth was influenced by fluctuations in oil prices and geopolitical factors impacting its economic performance. Generally, the major economic powers showcased diverse growth patterns influenced by both domestic and global factors over the review period (Figure 9.1).

The main economic powers across the globe use strategic partnerships to achieve foreign policy objectives. Strategic partnerships are based on a balance of mutual advantages and commitments, and therefore mutual interests of partner actors are fundamental (Schmidt, 2010).

Due to its flexibility, strategic partnerships are largely used by rising powers, middle-sized and small countries (Boni, 2022). As a foreign policy tool anchored on diplomatic dialogue, strategic partnerships engage in mutual learning and problem-solving that could be crucial for technology cooperation and knowledge sharing (Michalski, 2019). Therefore, pragmatic strategic partnership could be crucial for the acquisition of requisite technology for enhanced productivity and inclusive growth in developing countries.

9.2.2 Significance of frontier technology for productivity

Frontier technologies, including digital and physical technologies, have potential applications for sustainable development as their adoption and innovation in production processes increase overall productivity (United Nations Economic and Social Commission for Asia and the Pacific, 2018). Some of the frontier technologies that have developed in the last two decades include artificial intelligence, Internet of Things (IoT), big data, blockchain, 5G, 3D printing, drone technology, robotics, solar PV, biofuel and biomass, wind energy, green hydrogen, electric vehicles, gene editing and nanotechnology.

The emergence of frontier technologies heralds optimism to eliminate hunger and epidemics, increase life expectancy, reduce greenhouse emissions, automate repetitive tasks in factories, improve quality of life, and create decent jobs (United Nations, 2018). Frontier technologies have offered promise to businesses as increased interconnectivity between machines and computer systems has fundamentally transformed the capacity of firms to manage their supply, productivity, and delivery relations across geographically dispersed stages of value chains (UNCTAD, 2022). Similarly, frontier technologies have the potential for governments to transform public service delivery by using digital technologies that strengthen public institutions' capabilities and empower citizens. Additionally, frontier

technologies can be deployed for environmental protection and preservation (United Nations, 2023).

However, frontier technologies are currently dominated by advanced economies and a few emerging economies, leading to disparities in the knowledge landscape (United Nations, 2023). Moreover, several developing countries still face enormous barriers to tapping into the opportunities as they have inadequate investments in infrastructure, skills, and research capabilities to acquire the technologies. Frontier technologies risk exacerbating existing inequalities and creating new ones across the globe (United Nations, 2021).

The indicators for frontier technology readiness include information and communication technology (ICT), skills, research and development, industrial capacity, and finance. The Readiness Index highlights areas in which countries can improve to enable a greater use, adoption, and adaptation of frontier technologies (UNCTAD, 2013). The ranking is dominated by high-income economies while emerging economies fall in the second tier of the ranking as shown in Table 9.2. The Frontier Technologies Readiness Index for selected countries in 2021 and 2022 reveals a diverse landscape of technological preparedness. The United States consistently leads the rankings, demonstrating high readiness across ICT, skills, R&D, industry, and finance. Japan improved slightly, particularly in R&D readiness, while the United Kingdom showed fluctuations but maintained strength in skills and industry. Germany remained solid in

its position, excelling in R&D and industry. China made significant progress, notably in ICT and finance readiness, while India also advanced, particularly in R&D and industry. Russia remained consistent in the top 30, with strengths in R&D and industry, while Brazil maintained stability around the top 40, focusing on industry readiness. Singapore continued to excel across all dimensions, positioning itself among the top countries consistently. These rankings provide valuable insights into how countries are positioned to embrace frontier technologies based on their capabilities in key areas essential for technological advancement and innovation.

Countries that are least prepared to use, adopt, and adapt frontier technologies are largely from Latin America, the Caribbean, and Sub-Saharan Africa. High-income economies with very high index values tend to have advanced infrastructure, including ICT technologies, a highly skilled population, developed industry, and better access to finance. ICT indicator comprises access and speed of the Internet and other ICT services and products. Skills indicator looks at the level of education of the population in a country. Literacy, numeracy, and digital skills are necessary for frontier technologies. Research and Development (R&D) comprises a number of scientific publications on frontier technologies and a number of patents filed on frontier technologies. Industry activity consists of exports of high technology manufactures, and exports of digitally deliverable services. Finally, access to finance refers to domestic credit to the private sector.

Table 9.2: Frontier Technologies Readiness Index for selected countries, 2021 and 2022

	Total score	2022 rank	2021 rank	ICT rank	Skill rank	R&D rank	Industry rank	Finance rank
United States	1.00	1	1	11	18	2	16	2
Japan	0.88	19	18	10	51	7	13	3
United Kingdom	0.89	17	3	20	12	6	44	12
Germany	0.92	7	9	24	17	5	12	40
China	0.74	35	25	117	93	1	8	4

India	0.66	46	43	95	109	4	22	75
Russia	0.76	31	27	43	32	13	54	69
Brazil	0.71	40	41	50	55	18	51	57
South Africa	0.61	56	54	71	77	36	67	25
Kenya	0.32	117	105	120	135	83	93	107
Egypt	0.49	83	87	91	66	47	90	119
Singapore	0.96	3	5	7	8	17	4	17
Saudi Arabia	0.65	47	50	46	44	20	119	77

Data source: UNCTAD (2023), *Technology and Innovation Report*

Despite the overall underperformance of Sub-Saharan African countries in the global Frontier Technologies Readiness Index, South Africa, and Mauritius have made progress on finance indicators emerging among the top 50 at positions 25 and 34 globally respectively (Table 9.3). South Africa has also ranked 36 globally in R&D. Kenya's best performance are R&D and industry at positions 83 and 93 globally. The overall performance across indicators shows that concerted efforts are critical in scaling up ICT, Skills, and Finance as well as

ensuring that the ranking of R&D and Industry improves. Actualization of the BETA pillars and enablers offers opportunities for tapping into frontier technologies. Similarly, Africa's general performance in the frontier technologies uptake could also be improved through the implementation of the AU Agenda 2063, Digital Transformation Strategy for Africa (2020-2030), the Policy and Regulatory Initiative for Digital Africa (PRIDA 2018), AU Data Policy 2022 and other AU infrastructure-related policies.

Table 9.3: Frontier Technologies Readiness Index for top ten Sub-Saharan African countries, 2021 - 2022

	Total score	2022 rank	2021 rank	ICT rank	Skills rank	R&D rank	Industry rank	Finance rank
South Africa	0.61	56	54	71	77	36	67	25
Mauritius	0.54	73	77	96	57	82	74	34
Namibia	0.36	104	91	129	111	104	66	53
Botswana	0.35	108	111	109	102	103	128	94
Ghana	0.35	109	103	99	122	81	107	154
Gabon	0.35	111	94	105	98	149	76	148
Cabo Verde	0.33	115	101	97	110	160	153	51
Kenya	0.32	117	105	120	135	83	93	107
Eswatini	0.32	118	107	141	114	124	72	131
Nigeria	0.32	119	124	119	108	68	157	153

Data source: UNCTAD (2023) *Technology and Innovation Report*

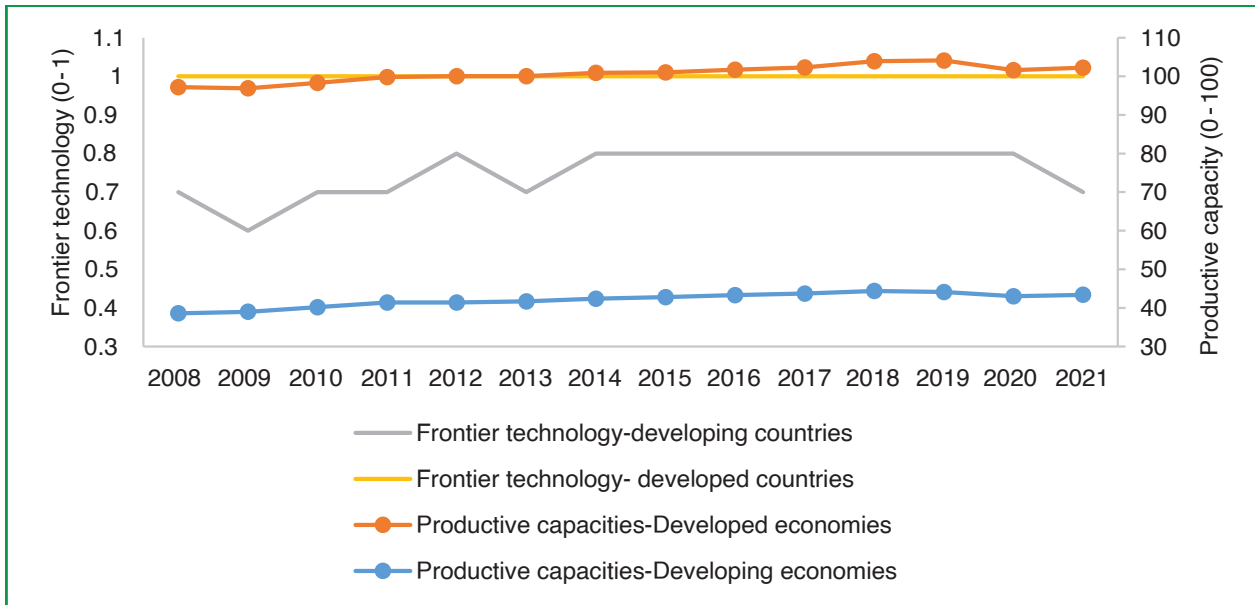
Figure 9.2 demonstrates the relationship between frontier technology and productive capacities for developing and developed countries. The Frontier Technologies Readiness Index is prepared by the United Nations

Conference on Trade and Development (UNCTAD) and measures preparedness to adopt and benefit from frontier technologies, with indices of one (1) indicating the highest preparedness to adopt and benefit from the

technologies. The productive capacities index is a measure of productivity ranging from 0-100, with higher scores indicating a more developed and diversified economy enjoying a strong foundation for sustainable growth. Figure 9.2

reveals that developing countries have lower adoption of frontier technologies compared to developed countries. In terms of productive capacities, developing countries have lower productivity compared to developed countries.

Figure 9.2: Frontier technology index against productive capacity for developing and developed countries, 2008-2021



Source: Author impression based on data from UNCTAD

Frontier technologies are expected to support productivity and inclusive development as they support industrial activity and economic growth. The diffusion of the technologies from the developed to the developing countries is further expected to support inclusive development in areas such as agriculture, education, health, manufacturing, business and finance, insurance, infrastructure development, environment, and climate action.

and regional levels to harness technology that could be crucial in their development plans. Similarly, countries in the Global South that are still lagging in the use, adoption, and adaptation of frontier technologies should be proactive in laying a strong foundation for improving ICT infrastructure, R&D, skills, industry, and access to credit through pragmatic policies and strategies.

The reconfiguration of the global economic order in which emerging economic powers have increased their agency in global governance could be an opportunity for other developing countries to access technology through South-South and Triangular Cooperation. Due to its flexibility and emphasis on economic cooperation, developing countries could employ strategic partnerships both at bilateral

9.3 Health and Vaccine Production

In recognition of the gravity of the public health problems facing developing countries and LDCs, especially HIV and AIDs, malaria, tuberculosis, and other epidemics, the Fourth Ministerial Conference of the WTO adopted the Doha Declaration on the Trade Related Aspects of Intellectual Property Rights (TRIPS) Agreement and Public Health in November

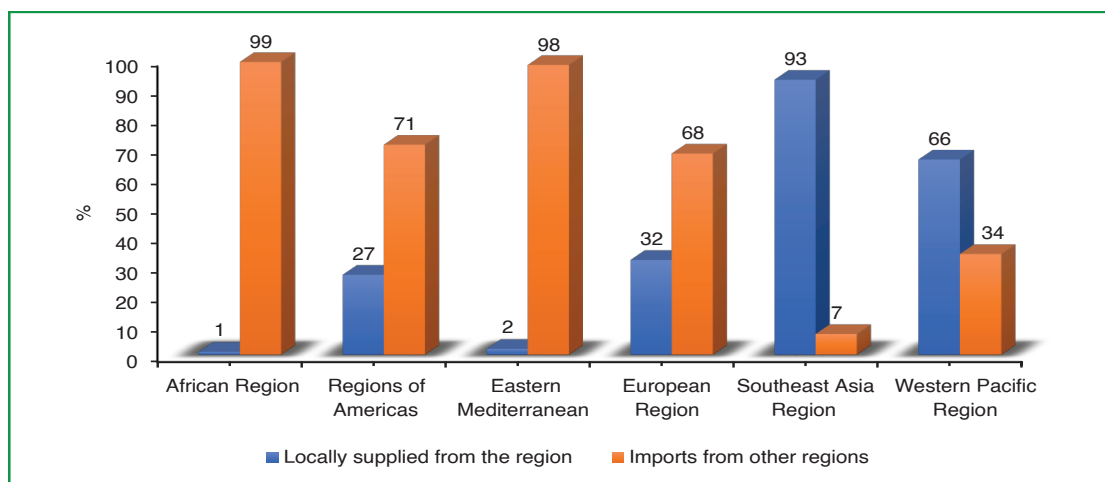
2001 to reaffirm flexibility of TRIPS in responding to public health emergencies. The Doha Declaration affirmed that the Agreement should be interpreted and implemented in a manner supportive of WTO members' right to protect public health and promote access to medicines for all (WTO, Ministerial Declaration, Paragraph 4, 2001).

The magnitude of devastation caused by the COVID-19 pandemic highlighted the need to address the tension between the right to health and Intellectual Property Rights (IPRs) (Chen, 2021). At the height of the COVID-19 pandemic, access to vaccines and other health technologies remained highly asymmetric despite the concerted efforts by national governments and international institutions to advance equitable access (Kohler et al., 2022). Two years after the outbreak of the COVID-19 pandemic, high-income countries had achieved full vaccine coverage in 70 per cent to 90 per cent of their population, while only 15.8 per cent of the population in low-income countries had received at least a dose of the vaccine. Despite being home to 17 per cent of the global population, Africa carries 25 per cent of the global disease burden (Correa, 2023; Path et al., 2023). Further, Africa consumes nearly 25 per cent of the globally produced vaccines but imports 99 per cent and 95 per cent of its vaccines and medicines, respectively, as shown

in Figure 9.3 (World Health Organization, 2022). COVID-19 underscores the need to consider the development of vaccine manufacturing capacity to safeguard the quality of healthcare in the continent and responses to current and future pandemics and disease outbreaks.

Intellectual Property Rights (IPRs) refer to rules, norms, and regulations that prevent the unauthorized use of intellectual products (Kumar, 2023). The protection and enforcement of IPRs should contribute to the promotion of technological innovation, and the transfer and dissemination of technology for the mutual advantage of producers and users of technological knowledge, in a manner that promotes social and economic welfare and ensures that rights and obligations are guaranteed. Signatories to the Trade Related Aspects of Intellectual Property Rights (TRIPS) Agreement may adopt measures necessary for the protection of public health and nutrition and undertake appropriate measures to prevent the abuse of intellectual property rights by right holders and practices that might unreasonably restrain trade or adversely affect the international technology transfer (Article 8 of TRIPS Agreement). The types of intellectual property in the Agreement include copyrights and related rights, trademarks, geographical indications, industrial designs, patents, and trade secrets.

Figure 9.3: Share of vaccine volumes by manufacturer WHO region (%), 2023



Data source: World Health Organization data

While local African vaccine manufacturing supplies are estimated at 1.0 per cent of the total continent’s demand, Southeast Asian region’s local vaccine production is estimated at 93 per cent (African Union and Africa CDC, 2022). Generally, the African and Eastern

Mediterranean regions tend to be the most dependent on imports from other regions for their vaccine supplies. Nonetheless, global vaccine manufacturing is concentrated in Southeast Asia.

Table 9.4: Vaccine manufacturing capacity in Africa

	Country	Vaccine manufacturing facilities	Year of establishment	Manufacturing stage
1.	Egypt	VACSERA	1881	Fill and finish Pack and label
		Biogeneric Pharma	2005	Research
		Minapharm	1958	Research Fill and finish
2.	Tunisia	Institut Pasteur Tunis	1958	Drug substance manufacturing Fill and finish
3.	Algeria	Saidal	1982	Drug substance manufacturing Import for distribution
4.	Morocco	Sensyo Pharmatech	2024	Fill and finish
		Institut Pasteur Du Maroc	1929	Import for distribution
		Galenica	1978	Drug substance production Fill and finish Pack and label
		Sothema	1976	Pharmaceutical manufacturing company
5.	Senegal	Institut Pastuer De Dakar	2009	Drug substance manufacturing Fill and finish Pack and label
6.	Nigeria	Innovative Biotech Ltd	2005	Research and development
		Biovaccines Nigeria Limited	2005	Research Pack and label
7.	Ethiopia	Ethiopian Public Health Institute	1995	Pack and label Import for distribution
8.	Ghana	Ghana Health Ministry	2024	Drug substance manufacturing
9.	Kenya	Afrigen	2022	Drug substance manufacturing
10.	Uganda	Dei Biopharma	2022	Drug substance manufacturing
11.	Rwanda	Rwanda Biomedical Centre	2023	Drug substance manufacturing
12.	Botswana	Botswana Baylor Children’s Clinic	2026	Drug substance manufacturing
13.	South Africa	Aspen	1997	Fill and finish
		Biovac	2003	Research and development Drug substance manufacturing Fill and finish Pack and label Import for distribution

Source: Saied (2022)

African vaccine manufacturers are in thirteen (13) African countries with varying degrees of capacity (Table 9.4). Two major vaccine manufacturing are drug substance production or manufacturing and drug product production (Path et al., 2023). While drug substance production entails producing active vaccine components (antigen), drug product production involves producing the final vaccine product, including formulation, fill, and finish. Drug substance production or manufacturing is the most cost-intensive and technically challenging stage. Most human vaccine facilities in Africa engage in fill, finish, pack, and label. Among 13 operational vaccine firms and organizations in the continent, ten (10) have developed fill and finish (F&F) capacity, five have drug substance (DS) production or manufacturing, and three engage in Research and Development (R&D).

Notably, many African countries have developed manufacturing capabilities for other biologics such as veterinary vaccines, monoclonal antibodies, and sera (Wellcome Trust et al., 2023). Veterinary vaccines are manufactured in 16 African countries, including Kenya, Tanzania, Ethiopia, South Africa, Egypt, Zimbabwe, Malawi, Botswana, Nigeria, Morocco, Senegal, Democratic Republic of Congo, Niger, Burkina Faso and Mauritius. Africa could optimize on synergy between the production of human vaccines and the production of other biologics.

In response to the immense global inequities in the COVID-19 vaccine distribution, the African Union and major stakeholders in the global health sector launched various initiatives, including the continental COVID-19 Vaccine Development and Access Strategy, which are central in the AU's call for a new public health order. The AU also established the African Medicines Agency with the main objective of enhancing the capacity of State Parties and RECs to regulate medical products to improve access to quality, safe, and efficacious medical products in Africa (African Union, 2019). The Partnerships for African Vaccine Manufacturing (PAVM) framework aims to enable the African vaccine manufacturing industry to develop,

produce, and supply over 60 per cent of the total vaccine doses in Africa by 2040 (African Union and Africa CDC, 2022). The strategy will be adapted to regional specifics through a Framework for Action (FFA), which is anchored on the premise that the continent should adopt a fully integrated ecosystem to generate investments that could support all steps of the vaccine manufacturing supply chain, including research and development (R&D); drug substance (DS) production or manufacturing; and fill and finish (F&F). Successful implementation of FFA is expected to deliver multiple benefits to Africa, including sovereign health security, regional regulatory and trade policy harmonization, technological expertise, and economic impact. Africa can deepen cooperation with other developing countries including China, India, Brazil, Argentina, and Cuba that have significant capacity in vaccine production (Correa, 2023).

The establishment of an mRNA tech transfer hub in the continent at Afrigen Biologics and Vaccines in South Africa to support Low and Middle-Income Countries (LMICs) to produce their vaccines is central to tech transfer and technical know-how. In February 2022, six African countries including Egypt, Kenya, Nigeria, Senegal, South Africa, and Tunisia were chosen as recipients of mRNA technology by the WHO (2022). The emerging hub and spoke model is expected to share technology and technical knowledge for the development and licensing of mRNA vaccines with local firms. The establishment of mRNA hubs is a critical strategy for present and future health challenges by ensuring that LMICs get access to medicines and vaccines.

The reforms for the IPRs regime are necessary to enable developing economies to develop their infant industries and for the adoption of green innovation and growth that are critical for enhanced productivity in the Global South. During their meeting in Indonesia in November 2022, the G20 recognized the need to strengthen local and regional health product manufacturing capacities and cooperation

in addition to sustainable global and regional research and development networks to facilitate better access to vaccines, therapeutics, and diagnostics (VTDs) across the world, especially in developing countries. The G20 also underscored the importance of technology transfer and knowledge sharing on voluntary and mutually agreed terms. Further, the G20 supports the WHO mRNA Vaccine Technology Transfer and the spokes in all the world's regions to share technology and technical know-how. The role of the G20+ and BRICS+ is critical for negotiating a pandemic treaty that will provide an inclusive and equitable framework and responses to future pandemics while the AU still collaborates with other G20 members through North-South Cooperation, South-South Cooperation, and Triangular Cooperation.

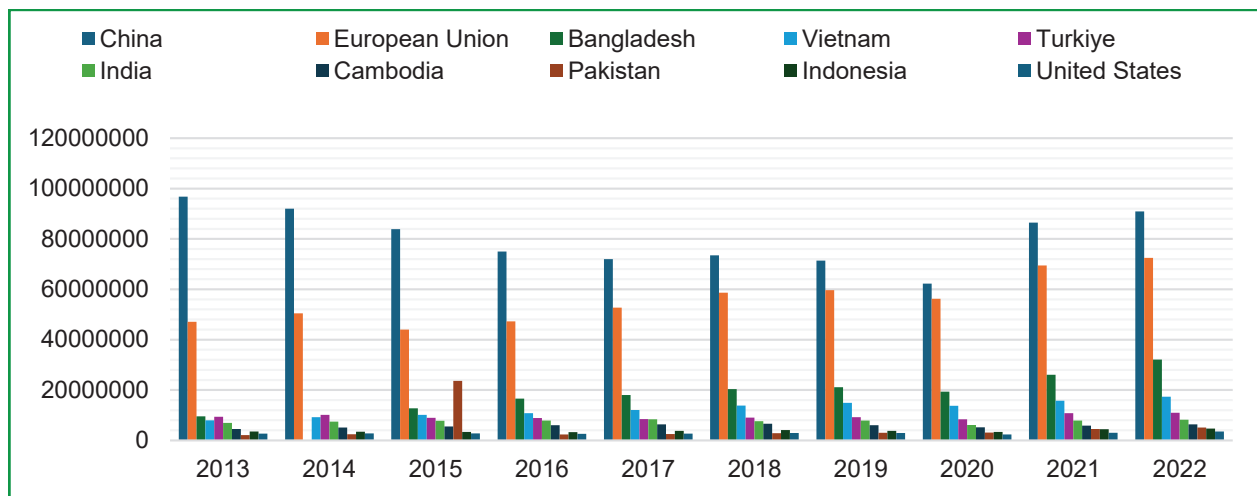
The COVID-19 pandemic was a turning point for African countries and the African Union in terms of rethinking better measures to ensure that public health is protected and improved through local manufacturing of vaccines and other diagnostics. It is also important to revisit TRIPs reforms to unlock technology for low-income and least-developed countries. This will need concerted efforts from the World Health Organization, United Nations agencies, G7, G20, and other stakeholders to support health

ecosystems in developing countries through international cooperation, solidarity, and strategic partnerships at various levels.

9.4 Textile Industry and Clothing Sector

Asian countries are major players in the global textile and clothing industry. China, Bangladesh, Vietnam, and India are strategically positioned in the apparel global supply chains, whereas the largest apparel consumer markets are largely concentrated in Europe, North America, and other high-income countries such as Japan (Whitfield and Triki, 2023; Ayoki, 2017). China's ascension to the World Trade Organization (WTO), and various preferential trade agreements saw the shift to the geography of textile production as Asia emerged as the main source of textile and clothing exports (Fernández-Stark et al., 2022). Moreover, the 1995 phasing out of the Multifibre Arrangement (MFA) that imposed quotas on the amount of clothing and textiles developing countries could export to developed economies opened opportunities for countries in the Global South including China, Bangladesh and Vietnam to expand their respective textile and apparel industries.

Figure 9.4: Values of exports of apparel and clothing, 2013-2022 (US dollar in thousands), 2013-2022



Data source: International Trade Centre (2023)

China's predominance in the textile and apparel sector is visible between 2013 and 2022 as shown in Figure 9.4. This could largely be attributed to low-cost labour, economies

of scale, and strong logistical services. China and other Asian countries such as India, Bangladesh, and Vietnam might have also benefitted from the phase-out of the quotas.

Table 9.5: Africa's top exporters of apparel and clothing, US dollar million, 2013-2022

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Global	207,727	232,521	217,985	215,729	224,340	235,397	234,082	206,256	233,767	255,767
Morocco	2,261	2,401	2,060	2,238	2,401	2,533	2,424	1,911	2,518	2,726
Tunisia	2,037	2,010	1,552	1,580	1,610	1,808	1,709	1,454	1,668	2,726
Egypt	867	781	865	889	989	106	1,100	891	1,264	1,658
Madagascar	190	243	192	239	291	268	268	266	266	301
Kenya	140	201	183	206	190	218	231	198	231	225
South Africa	229	217	204	186	195	198	198	166	219	203
Mauritius	327	361	350	322	299	318	282	201	179	195
Eswatini	76	97	95	105	133	151	157	117	149	157
Lesotho	62	107	93	159	178	151	128	149	167	150
Ethiopia	10	11	25	20	27	51	85	48	62	49

Data source: International Trade Centre (2023)

Africa's major apparel and clothing exports are from Morocco, Tunisia, and Egypt (Table 9.5). Despite being recognized as a critical economic pillar for Africa's industrialization, the textile industry has stagnated in several countries since the early 1980s (Brooks and Simon, 2012). The current structural trends in the global value chains of the textile industry present an opportunity for Africa to rebuild its textile industry as sustainability, circularity, and climate crisis become critical in the production processes (Whitfield and Triki, 2023). Understanding the trends in the global textile and apparel industry is crucial for Africa to explore new opportunities that support the sector's growth.

Second-hand clothing (SHC) is growing in response to the increasing demand for affordable clothing products (Dissanayake and Pal, 2023). The phenomenon of SHC and its supply chain is highly globalized, diverse, complex, fragmented, and it is not limited to North-South relationship due to the spread of the trade across various geographic regions in the world (Hernandez, 2019; Dissanayake and Pal, 2023). While historically major exporters of SHC were in the Global North, there is an increasing trend in which countries in the Global South are emerging as major exporters, especially from Asia. For instance, China's SHC exports have increased significantly in the past decade. Other top exporters from the Global South are from Asia and include India, Pakistan, and Vietnam as shown in Table 9.6.

Table 9.6: Top ten world's exporters of second-hand clothing (US dollar million), 2013-2022

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Global	62,481	66,518	61,098	60,498	63,421	66,830	66,833	122,932	91,558	85,211
China	26,825	28,472	26,954	25,724	26,469	27,848	27,890	75,584	41,857	37,667
India	4,712	4,613	4,616	4,564	4,962	5,240	5,163	4,771	6,677	6,020
Pakistan	3,685	3,906	3,759	3,803	3,961	4,076	4,070	4,277	5,515	5,638
Germany	2,835	3,083	2,772	2,823	2,803	3,134	3,091	4,193	4,080	3,505
Turkiye	2,462	2,530	1,899	1,954	2,016	2,052	1,815	3,188	2,038	2,771
US	2,166	2,226	2,182	2,001	2,138	2,179	2,227	2,458	2,892	2,939
Vietnam	1,172	1,302	1,370	1,359	1,449	1,579	1,815	3,188	2,038	2,086
UK	1,142	1,146	1,034	1,009	1,048	1,112	1,087	1,098	948	883
Netherlands	1,108	1,231	1,031	1,120	1,120	1,279	1,329	1,729	1,916	1,652
Belgium	1,023	1,084	968	1,010	1,028	1,083	1,045	1,345	1,246	1,152

Data source: International Trade Centre (2023)

In 2022, the major importers of second-hand clothing were Pakistan, Guatemala, United Arab Emirates (UAE), Kenya, Ghana, Democratic

Republic of Congo (DRC), Ukraine, India, United Kingdom (UK), India and Tanzania.

Table 9.7: Major importers of second-hand clothing (US dollar million), 2013-2022

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Pakistan	159	182	209	239	240	284	230	204	402	422
Guatemala	64	65	97	98	107	107	121	98	157	209
UAE	21	36	15	15	58	76	100	81	110	176
Kenya	96	100	103	126	126	167	173	114	172	169
Ghana	72	65	79	80	85	90	72	183	214	164
DRC			109	94	100	113	117	81	128	141
Ukraine	128	104	97	127	154	154	183	158	176	133
India	121	122	113	87	99	93	98	72	81	109
UK	28	29	20	11	61	75	72	54	76	108
Tanzania	61	74	62	61	47	81	106	106	105	108

Data source: International Trade Centre

The growth of the SHC sector in the past three decades reflects the demand for SHC among Kenyan households (Institute of Economic Affairs, 2021). Globally, Kenya was among the top ten importing countries for the SHC between 2013 and 2022, as shown in Table 9.7. The value of Kenya's second-hand clothing steadily rose from US\$ 96 million to US\$ 173

million in 2019, slowing down to US\$114 million and increasing to US\$ 172 million in 2021. However, Kenya's SHC imports experienced a slight drop in 2022. Nonetheless, it is notable that the SHC sector contributed Ksh 1 billion in revenue to the government through import tax (Institute of Economic Affairs, 2021).

Currently, there are no 'international' instruments guiding the SHC trade. States tend to rely on bilateral agreements on the governance and management of the SHC sector. In an asymmetric bilateral or bi-multilateral relationship, the powerful State is likely to impose its will on other partner(s), despite the laid down procedures in the bilateral agreement. The reaction of the United States on the planned three-year phase-out of SHC imports by the East African Community (EAC) partner States in 2016 illustrated how asymmetric partnership could adversely affect development policy choices of regional economic communities (RECs) in Africa. While the EAC Heads of States' directive in March 2016 was aimed at arresting the decline of indigenous textile and clothing (T&C) industry by exercising their collective agency through the implementation of a coordinated trade and industrial strategy, the Secondary Material and Recycled Textiles (SMART) industry filed a petition with the Office of the United States Trade Representative (USTR) demanding the withdrawal of the EAC's eligibility for the AGOA preference scheme (O'Reilly and Heron, 2022).

The second-hand clothes in Kenya and the wider EAC region are deemed to be cheaper and of better quality in some circumstances than new clothing, hence the increasing demand (Katende-Magezi, 2017). In Kenya, over two million people are engaged in the SHC sub-sector, which covers handling, alterations, refinements, and distribution (Institute of Economic Affairs, 2021). While the availability of second-hand clothes offers households a wide range of choice of products, technology transfer is yet to be established as the clothes are largely imported as finished goods.

Africa's textile and apparel industry has faced numerous challenges in the past three decades, as Asian countries especially China, Bangladesh, India, and Vietnam emerge as the main exporters of textile products. During the same period, the African market has been targeted by exporters of second-hand clothing and other merchandise. The trend has

increasingly suffocated the infant textile industry in Africa. Despite intervention measures to revitalize the textile industry, African countries are yet to have a breakthrough like their Asian counterparts. With the emergence of trends that are beginning to focus on sustainable textile development, African countries could explore opportunities that might enable them to modernize the textile sector by adopting affordable technologies that can be effective from the production of fibre to the manufacturing of apparel.

9.5 Infrastructure Development: Belt and Road Initiative

Infrastructure sectors' technical performance has been inadequate in developing countries due to State monopolies, weak regulatory framework, and poor maintenance. Moreover, investment in the infrastructure sectors has been a challenge due to several factors, including a need for huge investment, large land acquisition, government regulation, weak institutions, and State fragility and instabilities, hence increasing investment risks (Jiaoe et al., 2021). To respond to the poor performance of technology transfer in the infrastructure sector, developing countries are increasingly implementing and restructuring regulatory reforms. Kenya aims at cost-effective, world-class infrastructure facilities and services, as infrastructure is critical in facilitating and accelerating socio-economic development in the country (Republic of Kenya, 2007; 2018). Similarly, infrastructure is a crucial enabler for the realization of the objectives of the government's Bottom-up Economic and Transformation Agenda.

China's Belt and Road Initiative (BRI) aims to promote the connectivity of Asia, Europe, and Africa and their adjacent seas, to establish and strengthen partnerships among countries along the Belt and Road (The State Council, 2015). In addition, the BRI had stretched to Latin America and other regions, with more than 150 countries and more than 30 international organizations having signed the

Belt and Road cooperation with China by 2023 (Chair's Statement, 2023). The BRI is critical in transforming the construction industry and built environment in Africa (Shukra et al., 2021). Two main components of the BRI are the New Silk Road Economic Belt and the 21st Century Maritime Silk Road (Irandu and Owilla, 2020).

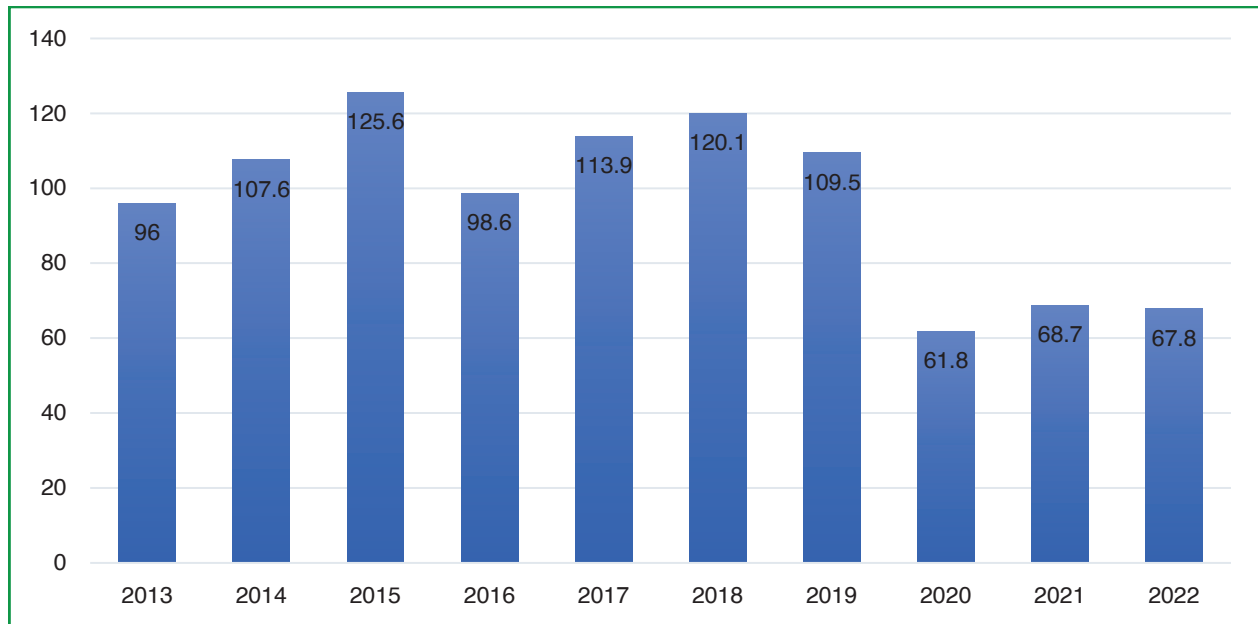
The BRI has five major routes, namely: the Silk Road Economic Belt, which comprises Northwest China and Northeast China to Europe and the Baltic Sea through Central Asia and Russia; Northwest China to the Persian Gulf and the Mediterranean Sea passing through Central Asia and West Asia; and Southwest China through the Indochina Peninsula to the Indian Ocean. The 21st Century Maritime Silk Road comprises two routes, namely from coastal ports of China crossing the South China Sea, passing through the Malacca Strait and reaching the Indian Ocean, eastern African coast, extending to Europe; and from coastal ports of China, crossing the South China Sea and extending to the South Pacific (People's Republic of China, 2017).

The third component of the BRI is the Digital Silk Road, which includes digital technological development, the development of digital standards, and the expansion of the digital infrastructure. China has signed bilateral agreements for digital cooperation and infrastructural development, with approximately 40 countries by early 2024 (Patil and Gupta, 2024). The BRI aims to build infrastructure such as roads, railways, ports, and power plants to increase connectivity between Asia, Africa, and Europe and their adjacent seas (Zhang, 2018). From a geopolitical and strategic perspective, the BRI enables China to consolidate economic and diplomatic relations with the participating countries and diversify China's imports of energy and other resources through economic corridors

(Dollar, 2019). By January 2024, there were over 150 countries and over 30 international organizations participating in the BRI. Almost all African countries have signed MoUs with China on BRI. Kenya is a key partner in the BRI as its ports and other transport infrastructure are crucial BRI linkages to landlocked countries in the region (Komakech and Ombati, 2023). Kenya and China signed a BRI Memorandum of Understanding on the sidelines of the Forum on China-Africa Cooperation (FOCAC) summit held in September 2018 in Beijing, China. Similarly, Kenya's top leadership has participated in the Belt and Road forums in 2017, 2019, and 2023.

Since it was launched in 2013, the BRI has witnessed concrete and steady achievements in infrastructure building, trade, and investment promotion, joint construction of industrial parks and free trade zones, financial cooperation, and cultural exchange that are expected to benefit both China and participating countries (Zhang, 2018). The Government of Kenya undertook various measures, including an overhaul of the institutional and policy framework related to the railway transport system, and land appropriation to ensure the SGR's completion (Jiaoe et al., 2021). A large-scale infrastructure investment such as the Standard Gauge Railway (SGR) is highly dependent on the specific institutional and cultural environment of the transferor state (China) and, therefore, a comprehensive consideration of technology, institution, and culture of both transferor and transferee (Kenya) is key in technology transfer. Customization and modification are key in ensuring that technology transfer fits within the internal cultural structure of the transferee country. In other words, considering the intimate knowledge of local cultural systems and factors is important for the effective adoption of technologies from other countries.

Figure 9.5: Chinese investments in the Belt and Road countries, 2013-2022, US dollar billions



Data source: China's Belt and Road Portal (various reports)

The five pillars of BRI are: policy coordination, facilities connectivity, unimpeded trade, financial integration, and people-to-people bonds as articulated in the document *Vision and Actions of Jointly Building Silk Road Economic Belt and 21st Century Maritime Silk Road* (The State Council, 2015). Cooperation in science and technology entails the establishment of joint laboratories/research centres, international technology transfer centres and maritime cooperation centres; promotion of science-tech personnel exchange, cooperation in tackling key science-tech problem and working together to improve science-tech innovation capabilities. To enhance cooperation in science and technology under the BRI, China has established China-ASEAN Mariculture Technology Joint Research and Promotion Centre, China-South Asia Technology Transfer Centre and China-Arab Nations Technology Transfer Centre (People's Republic of China, 2017).

China's collaboration with African countries in technology transfer has been critical in

promoting technological development and advancement in Africa. Through initiatives such as the China-Africa Science and Technology Partnership Plan (CASTPP) and the China-Africa Renewable Energy Cooperation, China has provided funding and technical support for various projects in African countries. Launched in 2009, the CASTPP aims to promote technology transfer and collaboration between China and African countries. The strategy intends to strengthen Africa's technological capability and promote sustainable development across several industries, including infrastructure, agriculture, and health.

Due to the greater difference between China and Kenya regarding technology foundations, political systems, and cultural environments, technology transfer could be realized through technology localization, institutional improvements, and cultural integration. Technology adoption and re-invention is central to technology transfer and spill-over (Shukra et al., 2021). The SGR largely contributed to technology transfer to unskilled labourers

through learning by doing (Wissenback and Wang (2017)). The concept of technology localization and cultural integration is like customization and translative adaptation that has been championed by *Kaizen* methodologies in which the transferor country is supposed to understand the indigenous values and proactively accept views and proposals by the transferee country (Jin and Ohno, 2022). Technology transfer under development cooperation tends to be organized under the asymmetric power balance between the transferor (outsider) and transferee (insider). As a result, the transferee might be hesitant to propose alternative models despite having intimate knowledge of the local cultural systems. It is, therefore, imperative that both sides should pay attention to the value structure and institutions of the recipient country to ensure successful technology transfer.

Infrastructure development and connectivity have emerged as key enablers for economic growth and enhancing productivity. Kenya's Vision 2030, medium-term plans, and the Bottom-up Economic and Transformation Agenda have identified infrastructure as a key facilitator for accelerating socio-economic growth and development. Since its launch in 2013, China's Belt and Road Initiative has increasingly played a major role in connecting regions and continents through comprehensive infrastructure investment and development. Kenya is a pivotal state in the region due to its location as a littoral state of the Indian Ocean. Through collaboration and cooperation with

regional countries and development partners, Kenya could explore how to tap into available technology that can enhance the country's physical and digital infrastructure. Similarly, the government should invest in institutions and programmes such as the Kenya Industrial Research and Development Institute (KIRDI), Kenya Industrial Property Institute (KIPI), Kenya National Innovation Agency (KENIA), Technology Transfer and Extension Services (TTES), Technology and Innovation Support Centres (TISCs) to play a major role in technology and innovation development and transfers. Their active participation in infrastructure development could be crucial in integrating transferred technologies from other countries with relevant indigenous technologies.

9.6 International higher education and technology transfer

a. Inbound international students

Since the beginning of the 21st century, international student mobility has experienced a three-fold increase as more students pursue higher education outside their home countries as shown in Table 9.8. Alternative destinations have also emerged in other world regions (Glass and Cruz, 2022). While Northern America and Western Europe are still a major destination for many international students, other countries especially in East Asia, and Central and Eastern Europe are increasingly positioning themselves as new education hubs for overseas higher education (Bhandari, et al 2018).

Table 9.8: Inbound International Students, 2000-2021

	2000	2005	2010	2015	2020	2021
World	2,106,938	2,798,376	3,801,061	4,811,182	6,376,355	6,387,487
Arab states	-	156,637	231,751	330,207	469,527	496,040
Central and Eastern Europe	145,725	222,228	348,198	566,577	822,948	891,228
Central Asia	27,568	42,717	43,869	40,103	108,807	136,305
East Asia and Pacific	297,878	460,727	736,285	920,306	1,327,318	1,248,024
Latin America and Caribbean	58,561	95,721	160,319	170,106	269,538	280,405
North America and Western Europe	1,330,276	1,703,097	2,110,212	2,555,088	3,135,036	3,092,122

South and West Asia	9,711	14,908	30,248	59,150	77,703	76,383
Sub-Saharan Africa	-	102,338	140,176	169,642	165,475	166,977
Small Island developing countries	-	85,073	115,837	101,683	106,329	111,316

Data source: UNESCO Institute of Statistics

The proportion of international students pursuing studies in Northern America and Western Europe has steadily reduced from 63.13 per cent in 2000 to 48.4 per cent in 2021 (Table 9.8). On the other hand, the proportion of international students studying in East Asia and Pacific, and Central and Eastern Europe regions have progressively increased from 14.13 and 6.91 per cent in 2000 to 19.53 and 13.95 per cent in 2021, respectively. Further, the share of international students seeking tertiary education in the Arab states has made modest progress from 5.59 per cent in 2005 to 7.76 per cent in 2021. Latin America and the Caribbean region have also experienced a modest growth from 2.77 per cent in 2000 to 4.38 per cent in 2021.

b. Outbound international students

The origin of mobile students is also important in understanding the dynamics of international higher education and the factors that determine the choice of their destinations. In 2000, North America and Western Europe, East Asia (23.24%), and Pacific regions (23.03%) had almost the same numbers of outbound international students (Table 9.9). Two decades later, East Asia and Pacific has emerged as a leading region for outbound students accounting for 24.42 per cent of the world's international students. The share of outbound students from Arab states and South and West Asia regions has increased significantly between 2000 and 2021.

Table 9.9: Outbound international students, 2000-2021

	2000	2005	2010	2015	2020	2021
World	2,106,938	2,798,376	3,801,061	4,811,182	6,376,355	6,387,487
Arab states	176,193 (8.36%)	216,260 (7.72%)	292,184 (7.68%)	440,810 (9.16%)	564,767 (8.85%)	588,648 (9.21%)
Central and Eastern Europe	205,704 (9.76%)	273,146 (9.76%)	390,598 (10.27%)	441,708 (9.18%)	453,610 (7.11%)	473,913 (7.41%)
Central Asia	58,161 (2.76%)	81,532 (2.91%)	131,283 (3.45%)	248,742 (5.17%)	362,504 (5.68%)	391,169 (6.12%)
East Asia and Pacific	485,257 (23.03%)	745,855 (26.65%)	1,047,347 (27.55%)	1,296,484 (26.94%)	1,670,861 (26.20%)	1,560,368 (24.42%)
Latin America and Caribbean	128,953 (6.12%)	187,855 (6.71%)	260,357 (6.84%)	290,373 (6.03%)	410,755 (9.38%)	408,018 (6.38%)
North America and Western Europe	489,753 (23.24%)	488,613 (17.46%)	577,818 (15.20%)	692,846 (14.40%)	836,281 (13.11%)	827,444 (12.95%)
South and West Asia	129,521 (6.14%)	235,649 (8.42%)	355,299 (9.34%)	501,342 (10.42%)	867,220 (13.60%)	862,976 (13.51%)
Sub-Saharan Africa	184,590 (8.76%)	251,466 (8.98%)	309,393 (8.13%)	370,879 (7.70%)	416,343 (6.52%)	441,537 (6.91%)
Small Island developing countries	73,198 (3.37%)	87,697 (3.13%)	98,962 (2.60%)	99,036 (2.05%)	110,228 (1.72%)	108,507 (1.69%)

Data source: UNESCO Institute of Statistics

Factors that have contributed to the diversification of student mobility destinations include the global financial recession in 2008/09; tight visa restrictions and stringent immigration policies; the rise of Asian economic powerhouses; the establishment of strategic education hubs across several countries; the introduction of English-taught programmes in other countries (Kirloskar and Inamdar, 2021). The appeal of alternative destinations for international education is also strengthened by their cultural, linguistic, and geographic proximity as well as the growing number of internationally ranked universities found in other world regions (Glass and Cruz, 2022). This has led to the growth of regional mobility as several countries invest capital in education infrastructure to establish themselves as the destination for international students. While traditional Western countries remain a top destination for international education, the emerging trend in the past two decades of the 21st century shows that their relative influence could be on the decline with the rise of planned and emerging international education hubs in Asia, Eastern Europe, and the Gulf (Cui et al., 2022; Glass and Cruz, 2022).

Geopolitics of knowledge production provides insights into transnational flows of knowledge in a multidirectional process as an agency in knowledge and technology disperses to other political geographies (Wang and Zhang, 2020). Increasingly, the world is experiencing a dynamic power shift in global research as non-Western knowledge systems and science are getting recognized (Shen et al., 2022). Students and faculty engaged in cross-border mobility are steadily described as knowledge agents who have the agency to acquire, circulate, and produce knowledge and can navigate through knowledge networks and geopolitics of knowledge.

With knowledge/education hubs emerging in other world's regions, international mobility's agency could be critical in facilitating not only knowledge and technology transfer but also knowledge circulation. To overcome challenges

of knowledge transfers across borders, governments in developing countries should consider facilitating international academic mobility through targeted policies and strategies that benefit countries of origin of outbound mobile students. The emerging multipolar geography of international student mobility could be an opportunity for knowledge sharing and technology cooperation in the students' home countries.

9.7 Key Messages and Policy Recommendations

9.7.1 Key messages

1. The emergence of major economic powers especially from the East has contributed to the reconfiguration of the global economic order as agency of countries in the Global South increase through the BRICS alliance. The revitalization of South-South and Triangular Cooperation in the past two decades has led to increased trade, investment, and cooperation in several sectors including energy, agriculture, health, climate action, and renewed development cooperation among developing countries. Increasingly, countries are adopting strategic partnership frameworks for their bilateral, trilateral, and multilateral relationships. The dynamics of emerging global governance could offer opportunities for new forms of cooperation in technology acquisition, innovation, and knowledge sharing.
2. The growth of frontier technologies in the last two decades is an important milestone in technological invention and advancement. However, the use, adoption, and adaptation of these technologies are concentrated largely in high-income countries and some advanced emerging countries. Nonetheless, frontier technologies could offer a window of opportunities

for developing countries to leapfrog to sustainable development and acceleration of industrial growth if countries that lack new technologies strategically invest in capacity development and develop appropriate policies and strategies.

3. Reliable and effective healthcare systems with adequate healthcare personnel, infrastructure, and local manufacturing of vaccines and other biologics are crucial for public health. The outbreak of the COVID-19 pandemic in 2020 was a turning point for developing countries to prioritize the development of sustainable healthcare ecosystems. The current political economy of the TRIPS regime and the corporate power of global pharmaceuticals call for international cooperation in reforming institutions that might undermine public health and human welfare across the globe, especially from less developed countries.
4. The textile sector not only plays an important role in industrialization but also contributes to job creation and poverty reduction. However, the sector has stagnated in the past three decades due to inadequate policies and neglect. Increasingly, new trends in the textile and apparel industry are progressively focusing on sustainable textile development. A better understanding of dynamism in the sector could be critical for African countries in their plans for reviving the textile industry. The revival of the sector should be a priority in the country's external engagement as the acquisition of appropriate technology and innovation cooperation are key for future growth and progress in the sector.
5. Infrastructure is a key enabler for accelerating socio-economic growth and development. The launch of China's Belt and Road Initiative has offered

opportunities for countries that have signed MoUs with China to participate in the Initiative. Nonetheless, technology transfer has been minimal in mega infrastructure development projects such as the Standard Gauge Railway. Successful infrastructure development cooperation could require the input of professionals in negotiations to ensure measures to attract technology and skills for the locals.

6. International academic mobility has the potential for technology transfer, knowledge circulation, and skills development that could benefit the country of origin of international students and academics. Through targeted policies and strategies, Kenya could benefit from its diaspora's expertise, skills, and technical know-how. There is a need to consider incentives that might enable citizens abroad to contribute to the country's development through knowledge remittances.

9.7.2 Policy recommendations

1. To benefit from the emerging multipolar world, strengthen strategic partnerships with both emerging economies and developed economies through enhanced bilateral cooperation, South-South Cooperation, and Triangular Cooperation: This may involve rethinking diplomatic tools of engagement to target critical technologies for the digital economy and overall inclusive growth and development. Establish South-South and Triangular frameworks to enable the country to benefit from new global governance.
2. To harness frontier technologies, and improve policy environment that suits the use, adoption, and adaptation of the new technologies. This might involve policy and institutional reforms to support public-private partnerships and improve

the business environment that will attract investors of frontier technologies to the domestic market. Other reforms should target the development of digital infrastructure, improvement of skills at all levels of education, and enhancing financial inclusion to improve domestic credit availability.

3. Optimize on the opportunity offered through the nomination of Kenya as one of the six African countries to benefit from mRNA technology by investing in technological absorptive capabilities and policy frameworks that could accelerate local vaccine manufacturing and other therapeutics within the country. Further, consolidate and implement the AU-led reforms and initiatives to strengthen national and regional healthcare systems.
4. To revive the textile industry, there is a need to strengthen the capacity development of farmers who are key in the production of raw materials such as cotton, wool, and other forms of fibres. Through strategic partnerships, conduct an elaborate survey and benchmarking in selected Asian countries and in African countries that have made progress in the textile industry. In addition, invest in new and affordable technology, new machines, and policy reforms that will enable two levels of government and the private sector to establish a sustainable textile industry.
5. To optimize benefits from BRI and other infrastructure development supported by other development partners, the government needs to ensure that state negotiators understand the implications of such infrastructure development cooperation for Kenya's national interests. There is a need to involve engineers and other professionals in the negotiations of infrastructure development projects to ensure that every strategic partnership enhances technology cooperation and transfer.
6. To benefit from international academic mobility, documentation of students and faculty abroad might be crucial for planning purposes. Targeted policies and strategies are critical in tapping their skills and knowledge for the betterment of the country.



The introduction of a devolved system of government in 2013 significantly transformed the country's public service, leading to adjustments in employment practices as functions were decentralized to the county level. Despite this, freezes in public service recruitment and disruptions from the COVID-19 pandemic disrupted labour dynamics. Variations among counties underscore the importance of strategic policies, infrastructure, human capital investments, and governance reforms in stimulating productivity and economic growth. While there has been an increase in national productivity, disparities persist across counties, necessitating targeted interventions in technology access, personnel quality, infrastructure, and governance. Enhancing public service delivery requires a holistic approach involving capacity building, performance management contracting, technology integration, and oversight body establishment. Challenges in budgetary and financial management, including revenue target shortfalls and low allocations to wages and salaries, operational and maintenance spending and capital expenditure, and increased pending bills affect public service quality. Public satisfaction hinges on creating a conducive business environment, promoting national values, and upholding good governance practices. There is a need for a coordinated and strategic approach to capacity building and human resource management across all government levels. This includes the development of standardized training programmes, streamlining recruitment processes, offering competitive salaries, and implementing performance management systems. Targeted interventions focusing on technology access, personnel quality, infrastructure development, and governance practices are recommended to enhance productivity. In addition, a comprehensive approach to public service delivery should involve expanding training programmes, leveraging technology for digitization and automation, and promoting citizen engagement. Strengthening budgetary and financial management practices is crucial, including improving revenue collection strategies, enhancing budget execution, and addressing pending bills. Creating an enabling environment for businesses, promoting national values, and upholding good governance practices are also crucial in improving public satisfaction and enhancing productivity.

10.1 Introduction

Enhancing productivity in public service delivery is crucial in producing environmentally sustainable, high-quality, and cost-effective goods and services. Productivity in the public sector

entails efficient use of public funds, increased citizen satisfaction, public trust, accountability, cost reduction, and value for money (World Bank, 2021). The focus on productivity aligns with the national goals outlined in Kenya Vision 2030, the Constitution (2010), and the Bottom-up Economic Transformation Agenda (BETA),

emphasizing the importance of progressive enhancement of public service efficiency.

The government has undertaken various interventions to enhance productivity in public service since independence. This includes initiatives outlined in the initial National Development Plan (1964-1970), Wage Guidelines (1973-2005), Sessional Paper No. 1 of 1986 on Renewed Economic Growth, National Development Plan (1997-2001), Economic Recovery Strategy for Wealth and Employment Creation (2003-2007) and Kenya Vision 2030. Some of these initiatives include training and capacity building through the Kenya School of Government and other relevant agencies, technology and ICT infrastructure development, performance management contracting, transparency and accountability, and the establishment of huduma centres. These initiatives were aimed to create an environment that fosters productivity, efficiency, and effectiveness in the public service, ultimately benefiting both employees and the citizens they serve.

Additionally, in 2018, the government launched a Framework for Recognising Productivity and Performance in the Public Service. The Framework is a comprehensive guide to improve productivity in the public sector by linking financial rewards to measurable productivity and performance, stakeholder engagement and collaboration, alignment with national development goals, and recognition as a driver of productivity. By incentivizing employees to enhance their productivity and performance, aligning with national objectives, and emphasizing the role of recognition in driving performance, the framework represents a shift towards a more comprehensive and collaborative approach to improving productivity in the public sector.

Despite past interventions to boost productivity, labour productivity was low at 2.01 in 2022 compared to the standard benchmark productivity index of at least five (5) for global competitiveness. This implies that the level

of competitiveness is low. For instance, in 2019, Kenya held the 95th position out of 140 countries in global competitiveness. In terms of governance effectiveness, Kenya's estimates have ranged from approximately -0.3 to -0.54 from 2012 to 2022, falling within the lower range of the governance performance scale of -2.5 (weak) to 2.5 (strong). Furthermore, performance on Transparency International's Corruption Perceptions Index (CPI) has consistently remained low over the past two decades, with the country ranking 123 out of 180 countries in the 2022 report.

While progress has been made in areas such as Ease of Doing Business with the score rising from 56.0 per cent in 2012 to 73.2 per cent in 2020, there is still work to be done to meet global competitiveness standards. Thus, by focusing on productivity enhancement strategies and aligning with national development goals, the country can work towards a more efficient, productive, and effective public service that benefits both employees and citizens.

10.2 Performance of the Public Service

Delivery of public service involves a broad field of activities and functions aimed at providing essential services to the public, key among them healthcare, education, infrastructure, social services, and administrative functions at both national and county levels. This encompasses ensuring access to quality services for all citizens, promoting transparency and accountability in governance, implementing effective policies and programmes to address societal needs, and upholding integrity and ethical standards in public institutions.

Public service in Kenya is structured through governmental activities typically managed by public administration. This includes creating and interpreting laws, implementing programmes, national defense, public order and safety, immigration services, foreign affairs, and compulsory social security activities (UN(ISIC), 2008). As such, public administration plays a vital role in the effective functioning of

government institutions and the delivery of public services, in ensuring the wellbeing of society. Therefore, public administration is used as a proxy for measuring productivity in public service.

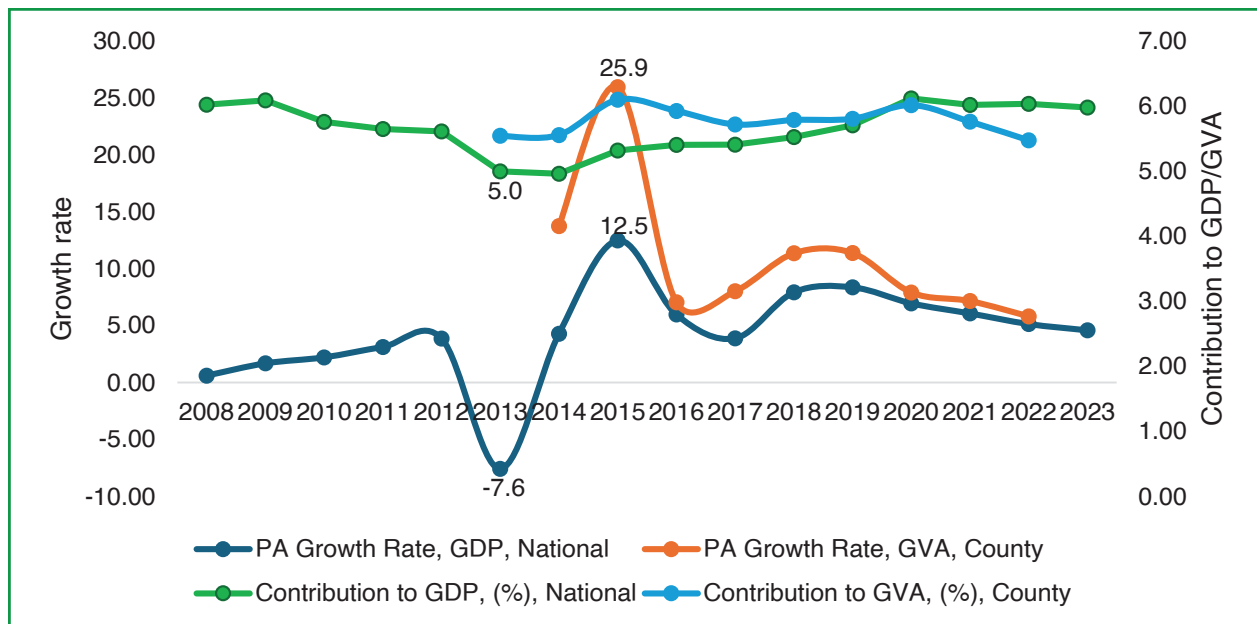
(a) Public administration growth and contribution to GDP

The growth of national and county public administration contribution to GDP peaked in 2015 at 12.5 per cent and 25.9 per cent respectively (Figure 10.1). This reflects a bounce from the significant decline in 2013, which followed the introduction of the devolved system of government. The growth path was disrupted by the heightened political risk in 2017 and the COVID-19 pandemic in 2020. As such, since 2019, growth in public administration has been on a decline both at the national

and county levels. For the counties, the public administration growth rate averaged 13.7 in 2013- 2017 compared to 8.7 in 2018-2022.

The contribution of public administration to GDP, both nationally and at the county level, has been relatively stable. In the period before devolution (2008-2012), in the first medium-term plan (MTP I), public administration contributed 5.8 per cent to GDP. The contribution decreased to 5.2 per cent with the second medium-term plan (MTP II) and increased to 5.9 per cent in the third medium-term plan (MTP III). For the counties, the public administration contribution to GCP averaged 5.8 per cent across all the counties in both the first and second generation of county governments. Important to note is that the contributions were susceptible to political risks, the COVID-19 pandemic, and weather shocks.

Figure 10.1: Public administration growth rate and contribution to GDP/GVA (%), national and county, 2012-2022

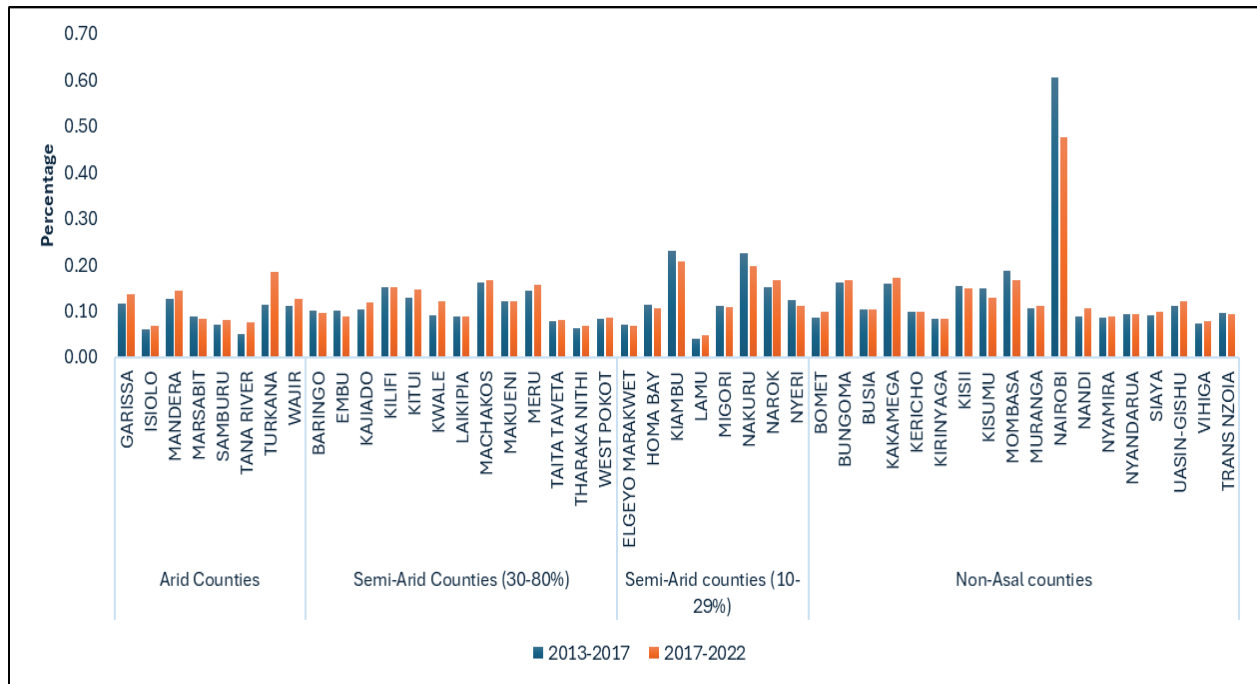


Data source: KNBS, Economic Survey (various years), and Report of the Revised and Rebased National Accounts

Experience varied across the counties on the contribution of public administration to GCP (Figure 10.2). Among the counties that improved included Kitui, Machakos, Turkana, and Lamu possibly due to strategic policy implementations, investments in infrastructure and human capital, and governance reforms. These efforts boosted productivity and economic output in these regions. Counties with cities such as Nairobi, Mombasa, and Nakuru experienced a

decline. Counties with larger populations and urban centres tend to have higher demands for public services and administrative functions. As such, Nairobi, Mombasa, and Nakuru counties, are likely to exhibit higher contributions of public administration to GCP. Counties with smaller populations and less urbanized areas such as Lamu, Isiolo, Tana River, and Tharaka Nithi have a lower share of public administration to GCP.

Figure 10.2: Counties public administration contribution to GCP (%), 2013-2022



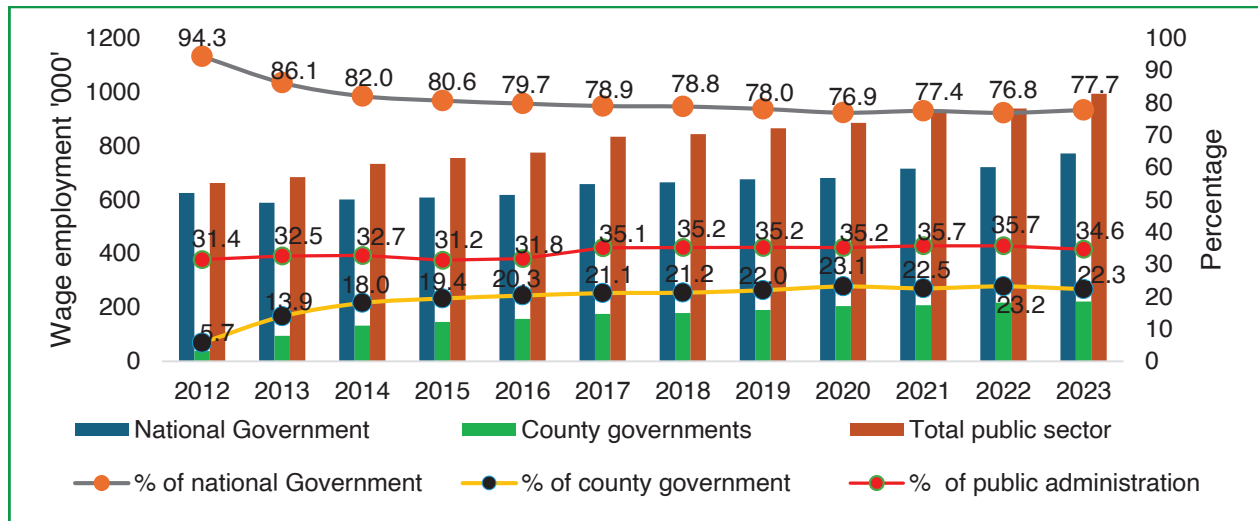
Data source: KNBS, GCP 2023

(b) Growth in employment in the public service

Public sector wage employment increased from 662.1 thousand jobs in 2012 to 992.8 thousand jobs in 2023 (Figure 10.3). This translates to an average of 31.6 per cent of the total wage employment. Employment in the national government also experienced growth, rising from 624.4 thousand jobs in 2012 to 771,500 jobs in 2023. The percentage of total public service employment attributed to the national government gradually declined

from 94.3 per cent in 2012 to 77.7 per cent in 2023. In contrast, employment in county governments has shown a significant increase over the years, with a substantial rise from 37.7 thousand jobs in 2012 to 221.4 thousand jobs in 2023. The share of county government employment to total public sector employment notably increased, from 5.7 per cent in 2012 to 22.3 per cent in 2022. The percentage of public administration employment as a share of total public sector employment was relatively stable, ranging from 31.2 per cent to 35.7 per cent over the years.

Figure 10.3: Trends and composition of employment in the public service, national and county governments, 2012-2022

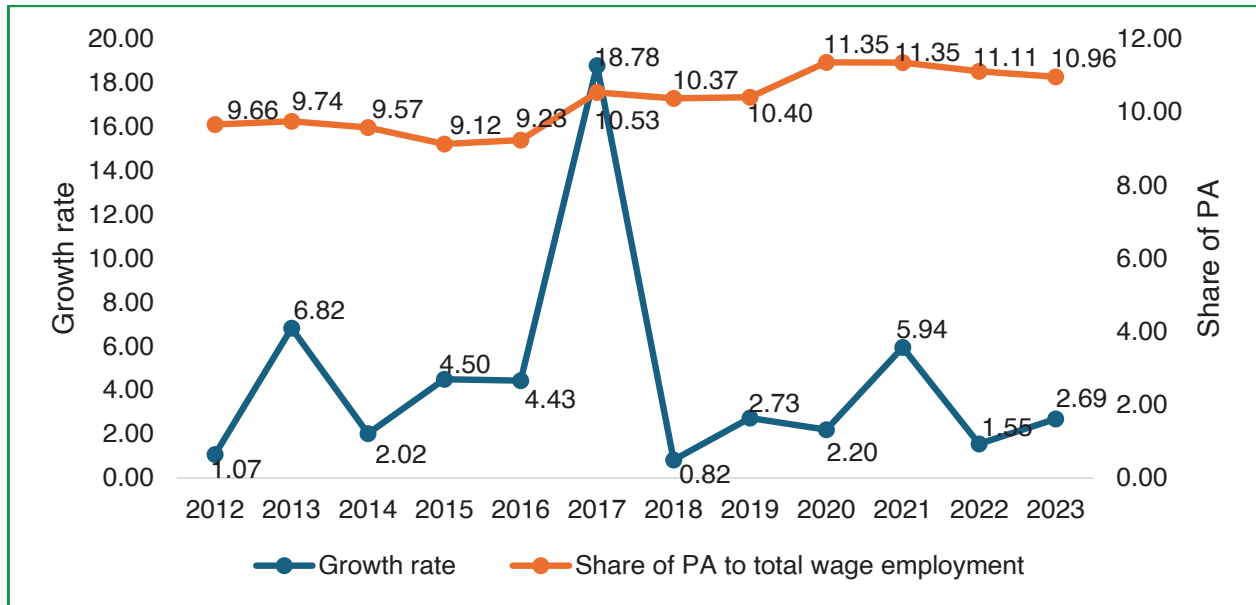


Data source: KNBS, Economic Survey 2023 (various years)

The national government public service employment rate witnessed a decline in 2013 (Figure 10.4) due to the devolution of certain functions to the counties, resulting in a redistribution of public service positions to the county level. Devolution transferred 14 functions to the county governments. As a result, county governments have had to increase their workforce to effectively deliver services at the local level.

In the period 2014 to 2016, public service recruitment was frozen, which means gaps existing were not filled and this had implications on productivity. In 2017, the freeze on hiring was lifted, allowing for the recruitment of employees in the national public service. Between 2018 and 2020, there was a reinstatement of the freeze on labour force recruitment, and this was exacerbated in 2020 by the COVID-19 pandemic. However, in 2021, there was an increase in the recruitment of new employees in the public service sector.

Figure 10.4: Labour force in the public service growth rate at the national level, (2012 - 2022)

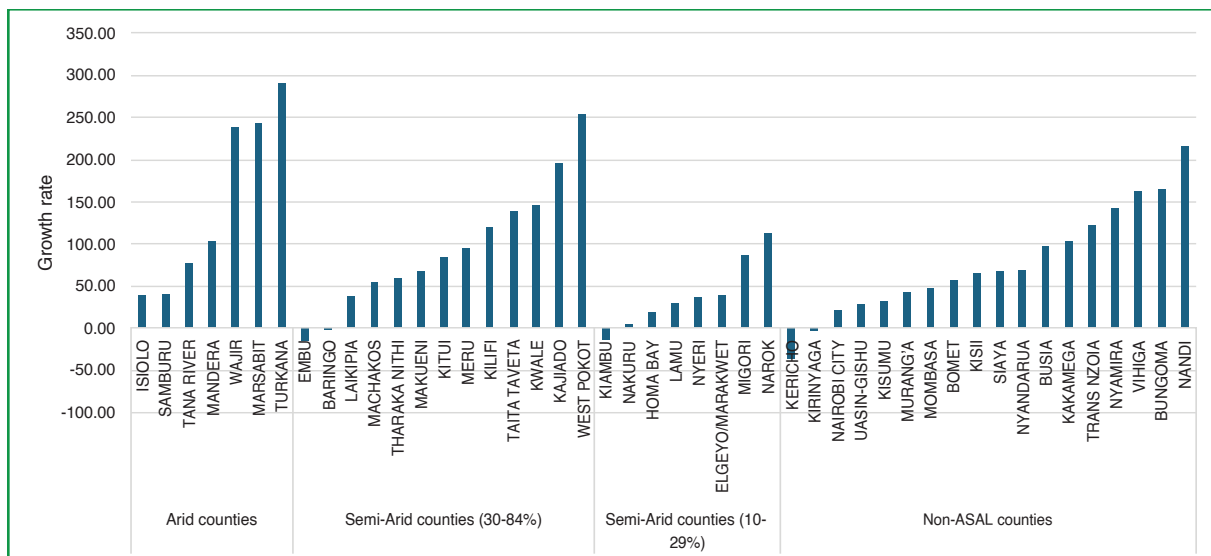


Data source: KNBS, Economic Survey 2023 (various years)

The workforce in the majority of the ASAL counties such as Wajir, Marsabit, Turkana, West Pokot, and Kajiado grew from 2016 to 2023 (Figure 10.5). This growth in the labour force in ASAL counties may be attributed to various factors such as government initiatives to promote development in these regions, increased investment in public services, and

efforts to address socio-economic challenges unique to ASAL areas. However, counties such as Lamu, Kiambu, and Kericho have experienced a decline in the same period. The workforce decline in these counties could have been influenced by factors such as changes in economic activities, shifts in employment opportunities, and migration patterns.

Figure 10.5: Labour force in the public service growth rate at county level (2016-2023)



Data source: Ethnic and Diversity 2023 of the County Public Service and Author's computation

10.3 Productivity in Public Service

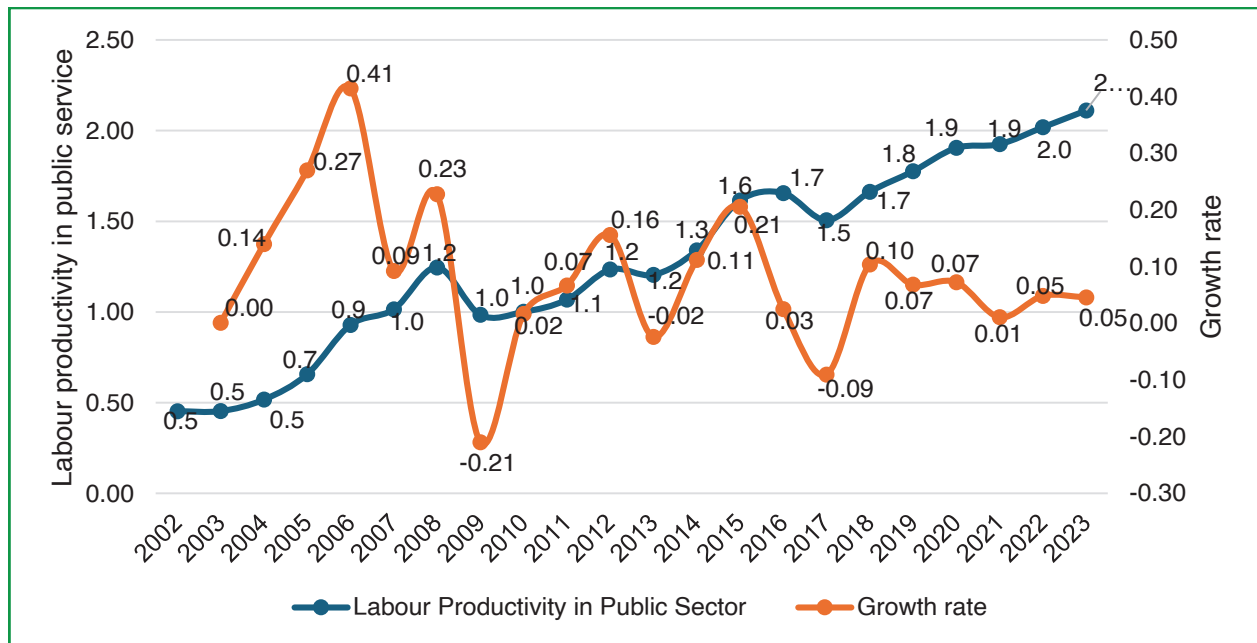
To assess productivity in public service, various measures were used including labour productivity in public administration, Public Affairs Index (PAI), the Country Policy and Institutional Assessment (CPIA), and the governance effectiveness perceptions. All aimed to bring out areas that require policy attention in improving the efficiency and effectiveness of public service delivery. Labour productivity serves as a fundamental measure of output per unit of labour input, reflecting the efficiency of service delivery. The Public Affairs Index provides a framework for monitoring public service delivery at the county level, offering insights into fiscal management, economic performance, and transparency. The CPIA evaluates governance structures, policy implementation, and institutional capacity, while the governance effectiveness reflects perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political

pressures, the quality of policy formulation and implementation, and the credibility of the government’s commitment to such policies.

a) Public administration labour productivity

Public administration productivity was computed as the public administration gross value added per worker. At the national level, productivity in public administration increased gradually from 0.5 in 2002 to 2.1 in 2023 (Figure 10.6). In the period before devolution (2002-2012) labour productivity in public administration averaged 0.87. The productivity increased steadily to an average of 1.11 during the first MTP, 1.46 in the second MTP, and 1.86 in the third MTP. The increase in productivity is attributed to the emphasis on the need for improved service delivery, efficiency, and effectiveness in the public sector. Also, prioritization of productivity and performance improvement in the public service.

Figure 10.6: Labour productivity in public service (public administration), national level (2002-2022)



Data source: KNBS (Various), Economic Surveys, Report of The Revised and Rebased National Accounts, and Authors’ computation

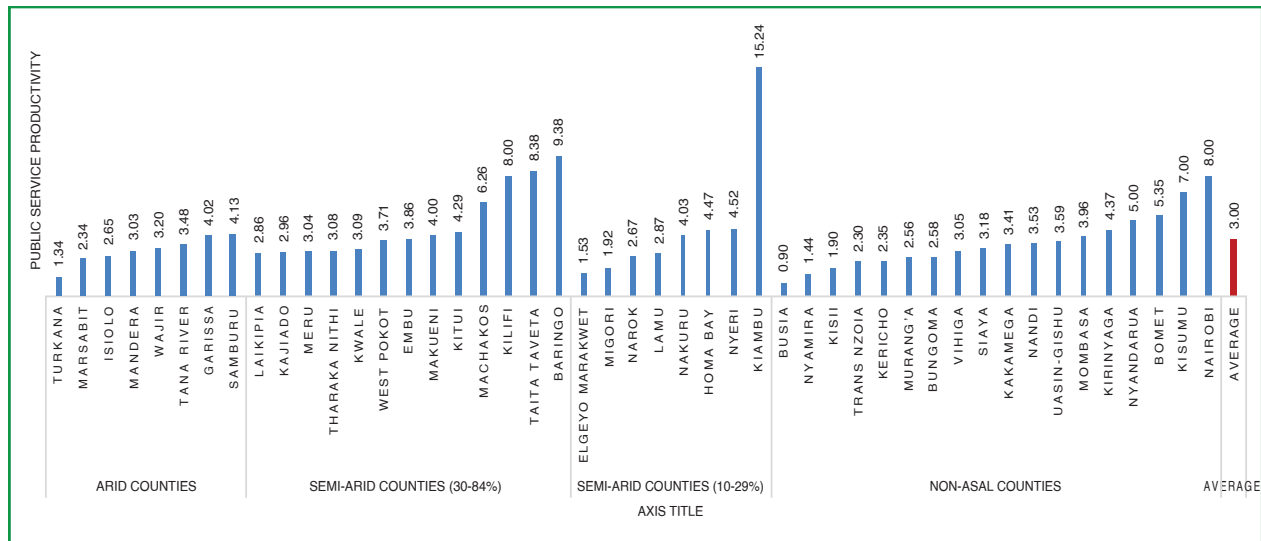
Public administration labour productivity varied across the counties ranging from 0.90 to 15.24 with an average of 3.88 in 2021 (Figure 10.7). Out of the 47 counties, 31 counties had public administration productivity below the average level of 3.88, while 16 counties exhibited productivity levels above the average. The counties of Busia, Turkana, Nyamira, Elgeyo Marakwet, Kisii, Migori, Trans Nzoia, Kericho, Marsabit, and Murang'a were identified as part of the bottom 10 counties with the lowest public administration productivity. Conversely, Nyeri, Nyandarua, Bomet, Machakos, Kisumu, Nairobi, Kilifi, Taita Taveta, Baringo, and Kiambu counties were among the top 10 counties with the highest public administration productivity.

The differences in public administration productivity among these counties could be attributed to various factors such as access to technology, quality of personnel, infrastructure development, transparency and accountability mechanisms, efficiency in project implementation, and overall governance practices. Counties with higher productivity levels

invested more in human capital development, implemented effective governance structures, and prioritized transparency and accountability in their operations.

In addition, the data indicates that labour productivity in public administration is lowest in arid counties at 3.0, followed by non-ASAL counties at 3.6 and semi-arid counties at 4.75. This variation in labour productivity across different types of counties could be influenced by factors such as access to resources, infrastructure development, human capital investment, climate conditions, and overall economic development. Arid counties face challenges related to limited resources, harsh environmental conditions, and lower levels of economic activity, which can impact productivity levels. Conversely, non-arid counties have better access to resources, infrastructure, and economic opportunities, leading to higher labour productivity in public administration.

Figure 10.7: Public service productivity (GVA (millions) per person employed) at the county level, 2021



Data source: County GCP 2021, Kenya Continuous Household Survey (KCHS) 2021 and Author's Computation

b) Public Affairs Index

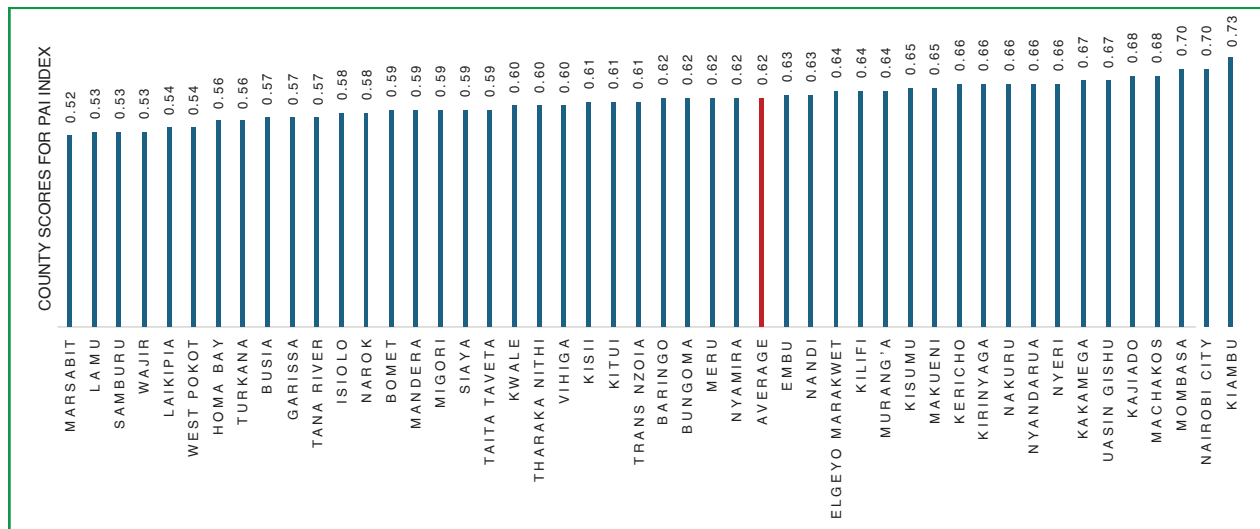
The Public Affairs Index (PAI) serves as a framework for monitoring the delivery of public services at the county level in Kenya. With the average scores ranging from 0.52 to 0.73 in 2022 (Figure 10.8), the PAI offers a comprehensive assessment across various pillars such as fiscal management, economic performance, human capital development, infrastructure, transparency, accountability, and more. Among the pillars making up the index, the highest average scores were on transparency and accountability (0.74), and human capital development (0.71) while the lowest average scores were on environmental management (0.47), crime and justice (0.53) and economic growth (0.56) (Lutta et al., 2022).

Out of the 47 counties, 28 counties had a public affairs index below the average level

of 0.62, while 19 counties exhibited scores above this average. The counties of Marsabit, Lamu, Samburu, Wajir, Laikipia, West Pokot, Homa Bay, Turkana, Busia, and Garissa were identified among the bottom 10 counties with the lowest public affairs index scores. Conversely, Kiambu, Nairobi, Mombasa, Machakos, Kajiado, Kisumu, Uasin Gishu, Kakamega, Nyeri, and Nyandarua were among the top 10 counties with the highest public affairs index scores.

The disparities in public affairs index scores among these counties may be attributed to factors such as economic opportunities, fiscal management, human capital development, infrastructure quality, transparency, and accountability practices. Counties with higher index scores have stronger governance structures, better fiscal management, and more efficient public service delivery mechanisms.

Figure 10.8: County scores for public affairs index, 2022, Kenya

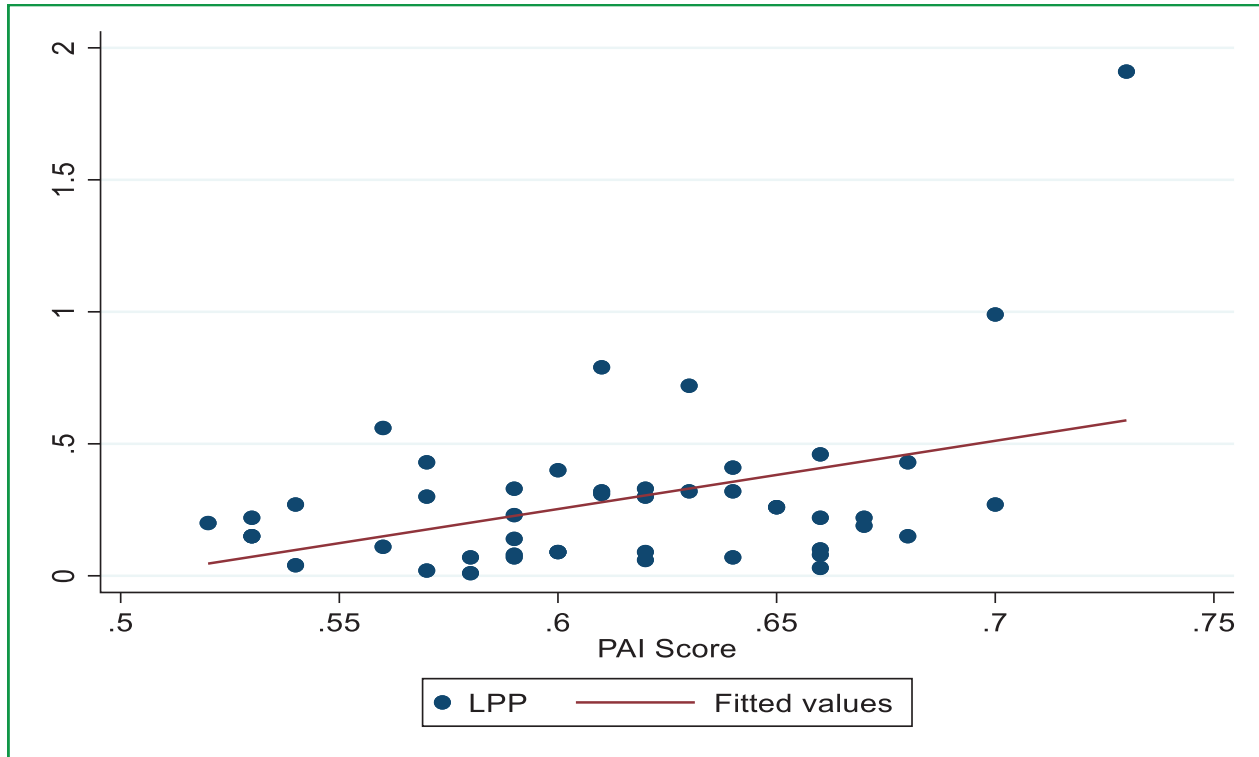


Data source: KIPPRA Public Affairs Index, 2022

A positive correlation between the Public Affairs Index (PAI) and labour productivity in the public service at the county level (Figure 10.9), indicates that delivery of public service is linked to labour productivity. This suggests that counties with higher scores in human capital development, economic management,

fiscal management, essential infrastructure, transparency and accountability, environmental management, crime, law and order, and WASH (Water, Sanitation, and Hygiene) tend to be associated with higher labour productivity in public administration.

Figure 10.9: Correlation between labour productivity in public administration and public affairs index at county level



Data source: KIPPRA Public Affair Index, 2022 and Author’s computations

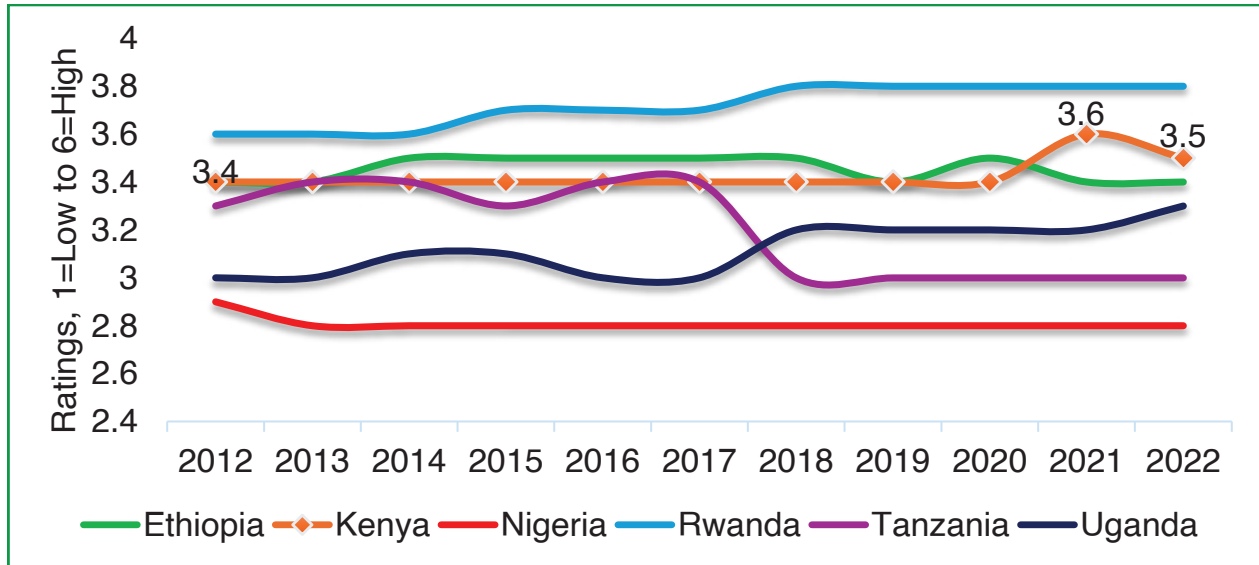
c) Country Policy and Institutional Assessment (CPIA) public sector management and institutions cluster ratings

The analysis of CPIA public sector management and institutions cluster focuses on five (5) components that include property rights and rule-based governance, quality of budgetary and financial management efficiency of revenue mobilization, quality of public administration, transparency, accountability, and corruption in the public sector¹. The CPIA ratings for public sector management and institutions have consistently remained at 3.4 from 2012 to 2020. There was a slight increase to 3.6 in 2021 due to the increase in property rights and rule-based governance from 3.0 in 2021 to 3.5 in 2021. There was a slight decrease to 3.5 in 2022 mainly due to the decline in quality of budgetary and financial management

from 3.5 in 2021 to 3.0 in 2022. The average rating across the components was highest on efficiency of revenue mobilization (4.0), followed by quality of public administration (3.5), quality of budgetary and financial management (3.4), property rights and rule-based governance (3.1), and transparency, accountability, and corruption in the public sector (3.1).

When compared to other countries, Kenya’s ratings are generally higher than those for Nigeria, Uganda, and Tanzania, similar to Ethiopia, and slightly lower than Rwanda. For Rwanda, the quality of public administration rating and transparency, accountability, and corruption in the public sector was at an average of 3.7 and 3.5 respectively between 2012 and 2022 as compared to Kenya at an average of 3.5 and 3.1, respectively, between 2012 and 2022.

Figure 10.10: CPIA public sector management and institutions score (1=low to 6=high), 2012-2022, selected African countries

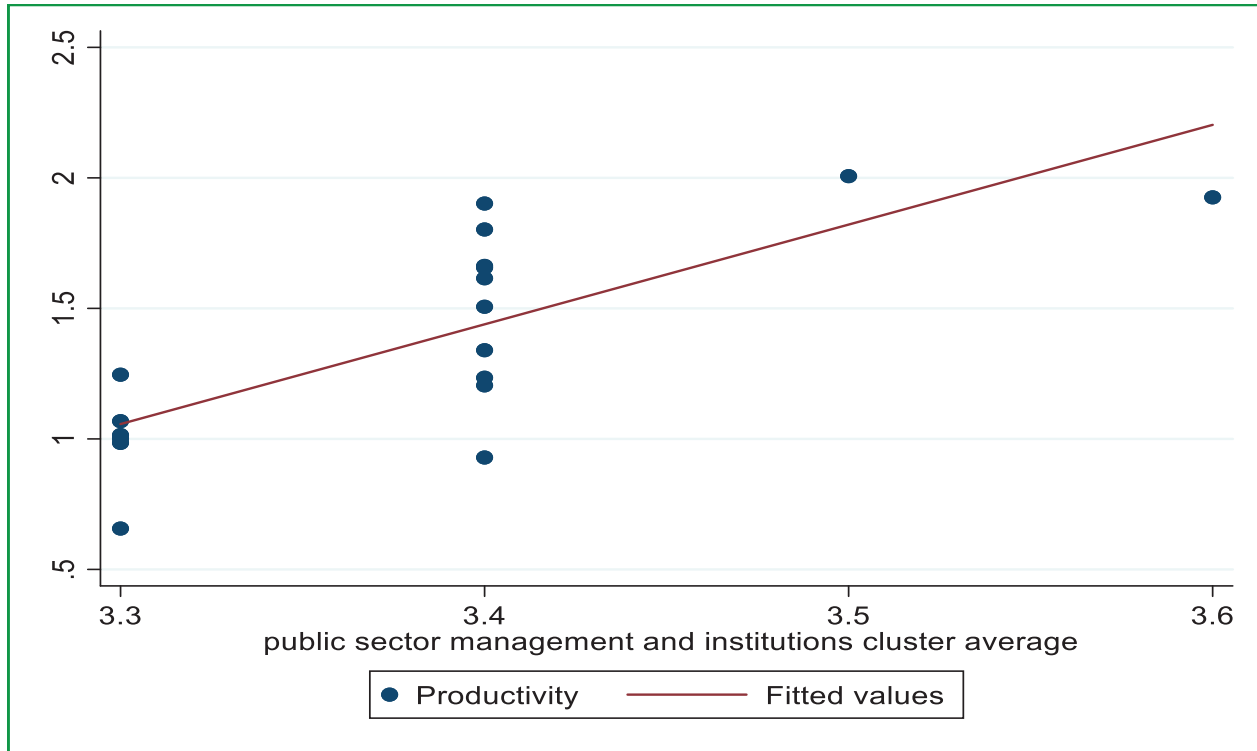


Data Source: World Bank (Various Years)

A positive correlation between the Country Policy and Institutional Assessment (CPIA) public sector management and institutions score and public administration productivity at the county level (Figure 10.11), indicates that public sector management and institutions is associated with labour productivity. This suggests that

improvements in property rights and rule-based governance, quality of budgetary and financial management efficiency of revenue mobilization, quality of public administration, transparency, accountability, and corruption is linked to increased productivity in the public sector.

Figure 10.11: Correlation between labour productivity and CPIA public sector management and institutions score, national level, 2012-2022



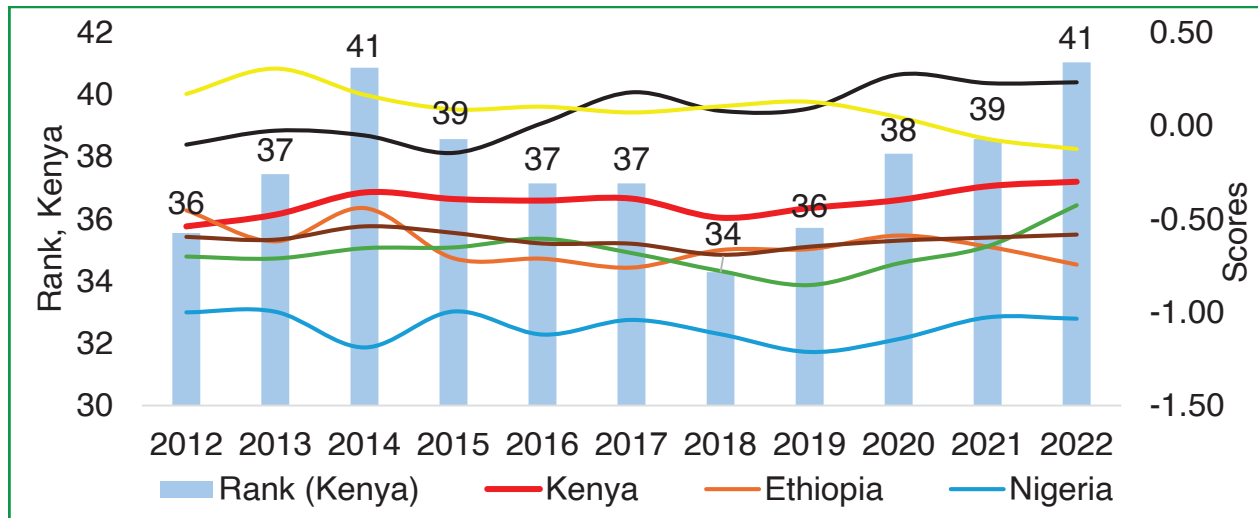
Data source: World Bank (Various Years), and Author's computations

d) Governance effectiveness

Governance effectiveness reflects perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. Governance effectiveness estimates for Kenya fluctuated between -0.54 to -0.3 in the period 2012 and 2022 (Figure 10.12) falling in the range of poor governance performance. The prolonged elections in 2017 led to the decline of the score.

Comparatively, countries such as Rwanda consistently outperformed Kenya in governance effectiveness, while South Africa also demonstrated relatively stronger governance performance. In contrast, countries such as Nigeria, Ethiopia, Tanzania, and Uganda exhibited weaker governance performance estimates compared to Kenya. Rwanda's outperformance of Kenya in governance effectiveness is attributed to its strong anti-corruption measures, efficient public service delivery, investments in human capital and infrastructure, leadership commitment to development goals, and emphasis on accountability and performance-based management.

Figure 10.12: Estimate of governance effectiveness (-2.5 (weak) to 2.5 (strong) governance performance) in selected African Countries, 2012-2022

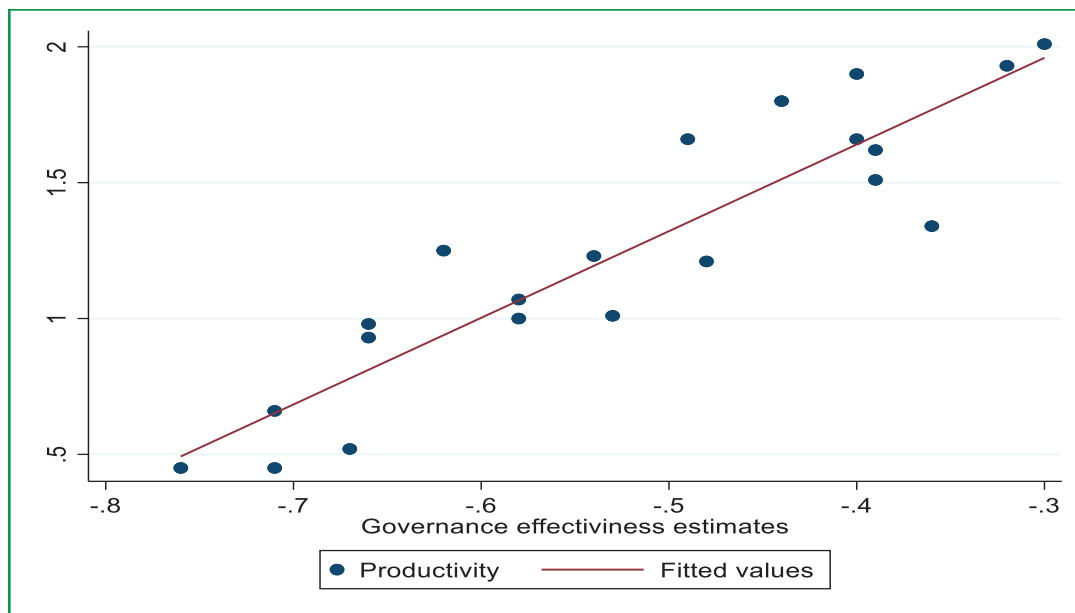


Data source: World Bank (2023)

With a positive correlation (Figure 10.13) between governance effectiveness and public administration productivity, this indicates that as governance effectiveness increases, this is associated with increased labour productivity. This suggests that perceptions of the quality of

public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the of the government’s commitment to such policies tend to be associated with increased productivity in the public sector.

Figure 10.13: Correlation between labour productivity and governance effectiveness, national level, 2012-2022



Data Source: World Bank (2023), and Author’s Computations

10.4 Improving Public Service Delivery

In Kenya, the public service has experienced a significant transformation in productivity, due to the following interventions: capacity building and training programmes; performance management; technology integration; setting up of institutions such as the Civil Service Commission (CSC), which was renamed Public Service Commission (PSC), Judicial Service Commission (JSC), Ethics and Anti-Corruption Commission (EACC), Salaries and Remuneration Commission (SRC), National Productivity and Competitiveness Centre (NPCC) and Commission On Administrative Justice - Office of the Ombudsman.

10.4.1 Capacity building and training programmes

Capacity building and training programmes play a crucial role in enhancing productivity in the public service by equipping employees with the necessary skills, knowledge, and competencies to perform their roles effectively. These programmes help employees stay updated on best practices, new technologies, and changing regulations, leading to improved job performance and service delivery. Additionally, capacity building initiatives foster a culture of continuous learning and development, empowering employees to adapt to evolving challenges and contribute more effectively to the organization's goals and objectives.

This section covers important government efforts towards building capacity and training programmes, including KSG's capacity building, on-the-job training, scholarship programmes, and internship programmes.

Kenya School of Government capacity building

The Kenya Vision 2030 advocated for the creation of the Kenya School of Government (KSG), underscoring the government's strategic vision for building a competent and ethical public service. The primary intention behind the creation of the KSG is multi-faceted and aligns with the core principles of the Vision 2030 agenda.

Firstly, the government aims to encourage public servants with a strong sense of values and ethics pertaining to public service. Secondly, the KSG is designed to enhance the skills and competencies of public servants across all levels of government. Through a comprehensive collection of training programmes, the KSG endeavours to equip public officials with the requisite knowledge, tools, and capabilities to effectively deliver public service. The courses offered cover such aspects as integrity, performance management, leadership, productivity, management of assets and liabilities, and public finance management (Table 10.1).

Table 10.1: Courses designed to cater to different levels and areas of expertise in the public service

Course title	Targeted cadre	Skill/knowledge being impacted
Executive leadership programmes		
Coaching and mentoring in the public service	Heads of departments	Competencies to institutionalize coaching and mentorship
Strategic leadership development programme	Officers in leadership and policy making roles, typically in Job Grades N and above, and their equivalent	Strategic thinking, decision-making, and leadership skills
Corporate governance	Officers in leadership positions or those preparing to take up such positions in the public sector	Appropriate governance practices
Public service values and ethics programme for senior officers	Senior officials in public and private sector organizations	Integrity for all staff

Management development programmes		
Senior management course	Middle-level managers in the public service typically in Job Grades K	Leadership and management
Governance and management of urban areas and cities	HoDs in municipalities and city authorities	Management affairs of decentralized units
Essentials of counselling in the public service	HRM officers, counsellors, and heads of departments	Technical, personal, and emotional adjustments
Communication management programmes		
Customer care course	Front office staff, secretaries, and personal assistants	Customer service
Communication skills for public service officers	Officers in county and national governments responsible for packaging and disseminating information	Communication
Public prosecution course	Officers responsible for enforcement of various laws and regulations	Legal and investigative skills
Productivity improvement and measurement	Human resource directors and managers, development officers, and quality assurance officers	Productivity
Salary administration and payroll management	Payroll managers, officers responsible for payroll management, HR directors, HR managers, accountants, and finance officers responsible for payroll management	Salary administration
Public finance management course	Officers responsible for budgeting, revenue policy, financial reporting, and the financial advisory functions in county and national governments	Public finance management
Audit committee course	Members of audit committees, ministries, and public sector agencies	Audit
Asset management course	Officers responsible for the development and management of assets and liabilities, and maintenance of asset registers	Management of assets and liabilities
Results-based monitoring and evaluation	Officers responsible for project development and management from all sectors	Project development and management
Grant proposal writing	Managers/officers responsible for resource mobilization, planning, and managing projects in both national and county governments as well as the private sector	Project proposals
Performance contracting in the public service	All managers in the public sector	Performance management
Staff performance appraisal system	Officers holding supervisory positions	Performance management
Job evaluation in the public service	Heads of HR function/ HR managers, members of public service boards, line managers, supervisors/ heads of departments, job analysts, and members of job description analysis committees	Job evaluation
Dispute mediation in the public service	Middle and senior-level managers	Dispute resolution
Performance management systems	Managers	Performance management systems

Financial reporting under IPSAS accrual	The programme targets officers and managers involved in public finance management; these include finance officers, accountants, and auditors	International public sector accounting standards
International public sector accounting standards	Accountants, finance officers, asset managers, and auditors	International accounting standards
Financial accounting, reporting and analysis	Accounts, finance, and treasury officers in the public sector	Financial accounting
Public sector finance management	Officers responsible for public finance management	Public finance management
Fraud investigation, detection and prevention	Law enforcement agents, internal auditors, treasurers, accountants, and fund managers in all sectors	Fraud investigation and prevention
Audit and risk assurance	Heads of audit and internal auditors	Risk management
Revenue enhancements skills course	Officers in MDACs responsible for revenue generation, collection, and control	Revenue generation
eLearning ICT programmes		
Performance management systems	Managers across all functions	Performance management
Advanced Excel for data modelling	Managers/ officers	Excel tool

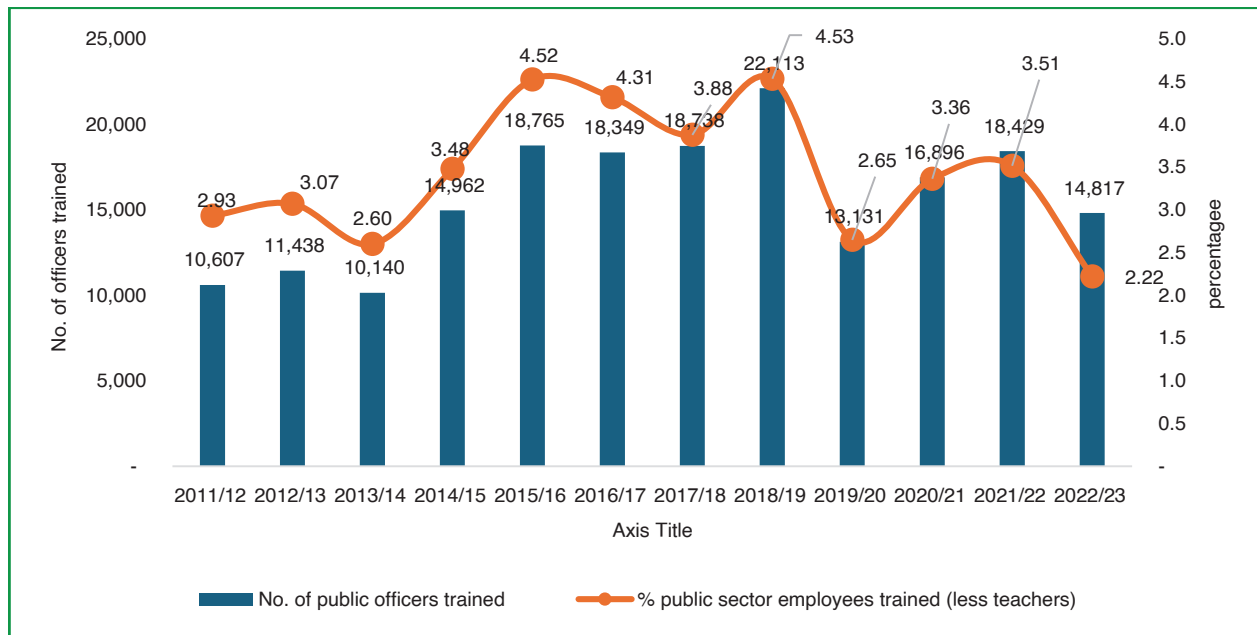
Data source: Kenya School of Government

There has been a gradual increase in the number of trained officers (Figure 10.14). However, a sharp drop in the number of trained officers was evident in 2019/20 and 2020/21, with only 13,131 and 16,896 officers, respectively, due to disruptions caused by the COVID-19 pandemic. Following the enactment of the act establishing Kenya School of Government in 2012, during the second MTP (2013-2017), the focus was to have competency-based training and capacity building for improved service delivery. The Kenya School of Government (KSG), therefore, put a lot of effort into the

development of infrastructural facilities and curriculum for training both national and county government officials.

However, the KSG trains below 5.0 per cent of public servants annually, both in national and county governments (Figure 10.14). This means that there could be training programmes outside KSG that attract public servants. Further, there are gaps between available knowledge and decision making especially at the county level (Auditor General's report, June 2022).

Figure 10.14: Number of public officers trained and certified in the KSG 2011/12-2022/23



Data source: Kenya School of Government (Various Years)

Scholarship programmes

Scholarship programmes play a significant role in the government’s efforts to enhance productivity in the public service. These programmes are designed to provide government officers with opportunities to pursue advanced degrees, acquire specialized skills, and enhance their expertise in various fields relevant to public service, both locally and internationally. Scholarships are typically awarded based on merit, performance, and the strategic needs of the government in specific sectors. Partnerships with countries such as Japan, Korea, and Australia, often involve agreements where these countries provide scholarships to Kenyan government officers. These partnerships are mutually beneficial, as they allow officers to access high-quality education and training opportunities abroad, while also strengthening diplomatic and economic ties between Kenya and the partner countries.

One key aspect of many scholarship programmes is the requirement for recipients

to serve a ‘bonding’ period upon completion of their studies. Bonding typically involves a commitment to work for the government for a specified period, usually equal to the length of the scholarship. This ensures that the skills and expertise acquired through the scholarship are utilized for the benefit of the government and the public service. However, the effectiveness of bonding can vary depending on various factors such as the enforcement of the bond, the availability of suitable positions upon completion of the studies, and the incentives provided to scholars to fulfil their bond obligations.

Scholarship programmes remain a valuable tool for enhancing productivity in public service. By providing government officers with opportunities for advanced education and training, these programmes help to develop a skilled and knowledgeable workforce capable of driving innovation and delivering high-quality services to the public.

On-the-job training

Job training is a crucial component of the

government's efforts to enhance productivity in public service. It refers to the process of providing employees with the knowledge, skills, and competencies required to perform their jobs effectively. Job training programmes in the public service are designed to improve employees' performance, increase their job satisfaction, and ultimately enhance the overall productivity of the public service.

One of the key aspects of job training in the public service is the focus on continuous learning and development. This includes both formal training programmes, such as workshops, seminars, and certification courses, as well as informal learning opportunities, such as on-the-job training, mentoring, and coaching. These programmes are designed to ensure that employees have the skills and knowledge needed to meet the evolving demands of their roles and contribute effectively to the achievement of organizational goals. Job training programmes in the public service also play a critical role in addressing skills gaps and improving the overall quality of services delivered to the public. By providing employees with opportunities to acquire new skills and competencies, these programmes help to ensure that the public service remains responsive to the needs of citizens and can deliver high-quality services efficiently and effectively.

Despite the benefits of job training programmes, there are several challenges associated with their implementation in public service. One challenge is the limited availability of resources, including funding and trained personnel to deliver training programmes effectively. This can result in training programmes that are not adequately tailored to the needs of employees or that do not address critical skills gaps within the public service. Another challenge is the need to ensure that training programmes are relevant and up to date. The rapid pace of technological change and evolving job roles require that training programmes be regularly reviewed and updated to ensure that they remain effective and meet the needs of employees. Additionally, there may be challenges related to the uptake

of training programmes by employees. Factors such as lack of awareness, competing priorities, and resistance to change can impact employees' willingness to participate in training programmes and apply the knowledge and skills gained to their work.

Despite these challenges, job training remains a critical component of the government's efforts to enhance productivity in public service. By investing in the skills and competencies of its employees, the government can ensure that its workforce remains capable, motivated, and equipped to deliver high-quality services to the public.

Internship programmes

Internship programmes are a critical part of the government's efforts to enhance productivity in the public service. Internships are structured training programmes that provide recent graduates with practical work experience, enhancing their employability and preparing them for future careers. These programmes also help organizations meet their workforce needs by providing a pool of skilled and motivated individuals.

The government has implemented various internship programmes aimed at different groups, including graduates from universities, colleges, and technical training institutes. These programmes offer interns the opportunity to gain hands-on experience in their field of study and develop valuable skills such as communication, teamwork, and problem-solving. One of the key internship provisions in Kenya is the Internship Policy and Guidelines for the Public Service, 2016. This policy provides a framework for the implementation of internship programmes across government institutions. It outlines the objectives of the internship programmes, the eligibility criteria for interns, and the roles and responsibilities of both the interns and the host institutions.

Under this policy, interns are required to undergo a structured training programme for a specific

period, typically ranging from three to twelve months. During this time, interns work under the supervision of experienced professionals, gaining practical skills and knowledge relevant to their field. Upon successful completion of the internship programme, interns are awarded a certificate as proof of their participation. This certificate can be valuable when seeking employment, as it demonstrates to potential employers that the individual has acquired practical work experience in addition to their academic qualifications. By providing young graduates with practical work experience, these programmes help to develop a skilled and competent workforce, which is essential for enhancing productivity and driving economic growth and development.

Despite their benefits, internship programmes face challenges. One challenge is ensuring that interns are given meaningful tasks that contribute to their professional development. Another challenge is the transition from internship to permanent employment, as some interns may struggle to secure long-term positions after completing their internships. Additionally, there may be challenges related to the availability of resources and funding for internship programmes, as well as ensuring that internships are accessible to a diverse range of candidates. Addressing these challenges is essential for ensuring the effectiveness and sustainability of internship programmes in enhancing productivity in the public service.

10.4.2 Performance management contracting

Performance management contracting is one of several reform initiatives that the government has introduced in its efforts to enhance service delivery. A Performance Contract (PC) is a management tool employed to prioritize an organization's annual objectives and measure performance against agreed targets. It outlines the shared performance commitments and responsibilities of the parties involved (PSC, 2023).

Performance contracting was first introduced in Kenya through the Parastatal Reform Strategy Paper in 1991, with initial pilot projects at Kenya Railways and the National Cereals and Produce Board. The positive outcomes observed in these pilot projects, such as improved administrative and financial performance and enhanced service delivery, led to the decision to expand performance contracting to all ministries, departments, and agencies (MDAs). This expansion aimed to foster a performance-oriented culture in the public sector and to establish accountability for outcomes. To support the implementation of performance contracting, the Kenyan government established a Performance Contract Steering Committee in 2003 and issued State Corporations (Performance Contracting) Regulations in 2004. These regulations defined performance as the assessed outcomes of achieving agreed-upon performance targets. The government also mandated all permanent secretaries/accounting officers and chief executive officers of state corporations to have performance contracts.

A monitoring and reporting system was established to ensure systematic and ongoing evaluation of performance. Public agencies were mandated to submit quarterly and annual performance reports in specified formats. The assessment of each public agency's performance was based on the performance contract they signed and their annual performance report (Government of Kenya, 2010). Public organizations were mandated to establish Performance Management Committees in accordance with Regulation 15 of the Public Service Commission (Performance Management) Regulations, 2021. The primary responsibility of the performance management committees is to oversee and assess the execution of performance contracts.

On performance management contracting, 42.8 per cent of organizations had aligned their strategic plans to BETA, 48.8 per cent had constituted performance management contracting committees and 46.4 per cent

signed performance contracts with the government during 2022-2023. In addition, out of the 145,967 officers who set targets, less than half, 62,898 (43.1%) were appraised while the rest were not. This indicated that the implementation of performance management was still not effective in most public organizations, negatively impacting service delivery (PSC, 2023). The Public Service Commission found that in 2021-2022 some of the reasons provided by organizations for not signing performance contracts included: delay in the Cabinet Secretary signing the PC; board members being in transition; and the organization not being fully operationalized.

10.4.3 Technology integration

The government has recognized the importance of technology integration as a key strategy to enhance productivity in the public service sector. By actively promoting the use of Information and Communication Technology (ICT) in public service, e-government was initiated in 2003 with the primary objective of reducing corruption and improving public sector performance. The subsequent establishment of the E-Government Strategy in 2004 and the creation of the E-Government Unit aimed to provide guidelines for harmonizing government ICT initiatives, further emphasizing the commitment to leveraging technology for enhancing productivity in public service.

Further to this, the government took proactive steps by establishing a task force on blockchain and artificial intelligence via Kenya Gazette Notice Number 2095 of 2018. This task force was tasked with developing strategies for the effective application of these emerging technologies. The World Economic Forum in 2018 highlighted that blockchain and artificial intelligence offer an unparalleled level of integrity, security, and reliability to the information they handle, thereby reducing the risks associated with a single point of failure.

The digital economy blueprint of 2019 guides e-government development in the country as

part of its overall digital transformation. The digital government goal is to improve access, quality, transparency, equity, efficiency, and effectiveness of government services. The blueprint outlines outcomes such as improved efficiency and productivity of government, improved citizen services with e-government, accelerated achievement of SDG and social agenda, cost savings, promoted transparency and reduced corruption, and improved ease of doing business (Republic of Kenya, 2019).

The second pillar of the 2022-2032 Information Communication Technology (ICT) Digital Masterplan underscores the importance of digitizing and automating government records. It also advocates for enhancing the integration and interoperability of government services, as well as reviewing and automating all essential government services.

The Public Service Commission in 2023 revealed that 415 (79.3%) of organizations reported having digitized 4,532 services, documented 3,388 (74.8%) services, and automated 1,378 (30.4%), showing a low uptake of automation.

Government-to-Citizen (G2C)

E-citizen, the main e-government platform in Kenya, serves as a government-to-citizen (G2C) portal, providing various services online, including business name search and registration, marriage-related services, driving licenses, land searches, clearances, passport and visa applications. The e-citizen platform enables citizens to sign up, apply for government services, and conveniently pay using mobile money, credit cards, debit cards, and online banking. Another key G2C platform is the KRA iTax system. With the COVID-19 pandemic, the government accelerated the provision of online public services. The Judiciary responded to the pandemic by launching the electronic case management system in 2020, limiting physical access to justice. Currently, the government offers 120 public services online on the e-citizen platform and other government websites. New

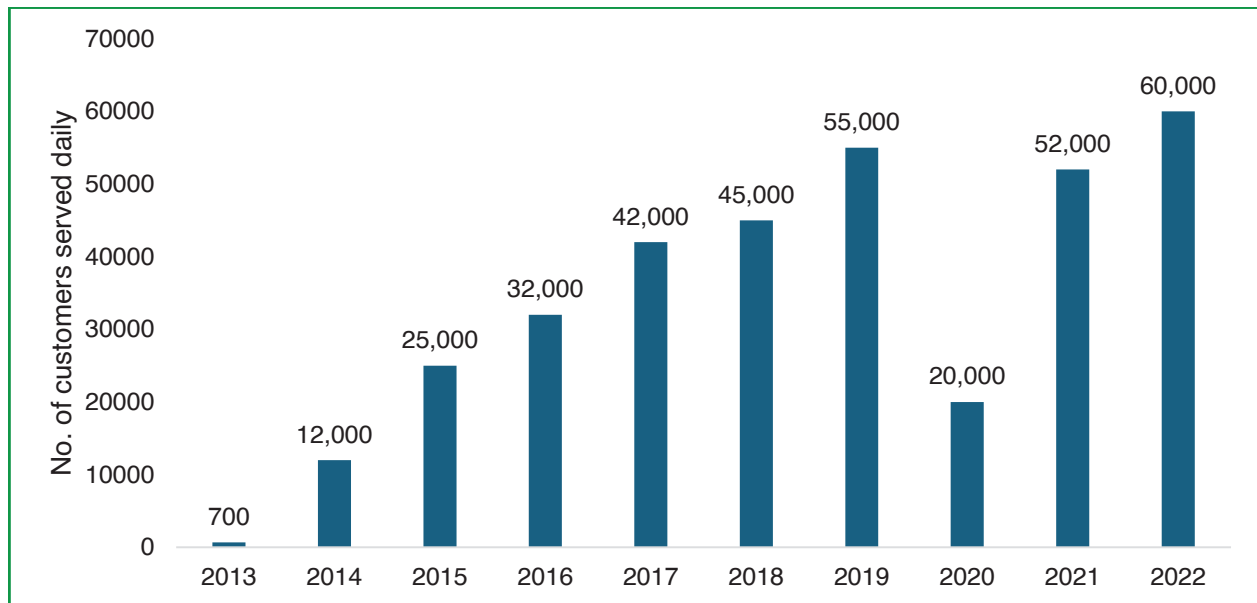
online services, such as Ardhi Sasa (the National Land Information Management System) and Chanjo Kenya (the COVID-19 vaccination registration and certification system), were launched in 2021.

In 2014 the government established Huduma Kenya Service Delivery Programme mandated to transform public service delivery to access to efficient, effective, and citizen-centric services through one-stop-shop platforms. Before the establishment of the programme (before 2013), the public service was characterised by long queues; lengthy and manual processes; poor customer care; inaccessible, unavailable, inaccurate, and delayed information across the country. This was heightened by multiple entry points for any single service leading to high costs in providing and accessing services, which caused numerous public complaints (Republic of Kenya, 2023). Huduma Kenya Service Delivery platform has operationalized service delivery platform, including Huduma centres;

Huduma mashinani outreach programme; Huduma contact centre, and Huduma E & M service. Looking at the Huduma of customers served daily (Figure 10.15), a gradual increase in the number of customers served daily was observed from 2013 to 2022, reaching a peak of 60,000 customers served daily. However, a sharp drop in the number of customers served daily was evident in 2020, with only 20,000. This decline is due to disruptions caused by the COVID-19 pandemic.

The distribution of Huduma Centres across the country ensures equal access to services for all citizens. With 52 centres located in various counties, these centres serve as accessible points where citizens can efficiently access a wide range of government services. This distribution strategy aims to reduce the need for citizens to travel long distances or incur high costs to access government services, aligning with the goal of providing equitable service delivery nationwide.

Figure 10.15: Number of customers served daily at Huduma centres, 2013-2022



Data source: Kenya School of Government (Various Years)

Government-to-Business (G2B)

Under the Government-to-Business (G2B) function, the government has implemented several key initiatives to enhance business operations and promote economic growth. The State Department of Trade initiated the Electronic Single Window System, a significant ICT infrastructure project aimed at enhancing efficiencies, optimizing port space, and reducing corruption in alignment with the goals of the Kenya Vision 2030. This system streamlines processes for businesses involved in international trade, making it easier to comply with regulatory requirements and facilitating smoother transactions. In 2002, the government launched the Integrated Financial Management Information System (IFMIS) to promote transparency in the utilization of public financial resources. IFMIS has played a crucial role in improving financial management practices, ensuring accountability, and enhancing the efficiency of financial transactions within the public sector. By providing a centralized platform for financial operations, IFMIS has contributed to greater fiscal discipline and oversight.

Additionally, the government established Konza Technopolis, a strategic initiative aimed at advancing effective links between the public and commercial sectors. Konza Technopolis seeks to streamline business operations both domestically and internationally, encourage the adoption of Information and Communication Technology (ICT) within the country, and promote sound ICT governance. Positioned as a technology powerhouse in the region, Konza Technopolis plays a pivotal role in driving innovation and economic development through technology. Furthermore, the National Fibre Optic Broadband Infrastructure (NOFBI) Project was proposed to establish a national public broadband network with access points in every county. This project aims to attract and stimulate private sector participation in the provision of rural telecommunications services, thereby enhancing connectivity and promoting economic growth across the country. By expanding access to high-speed Internet

services, NOFBI contributes to bridging the digital divide and fostering digital inclusion.

Moreover, the Kenya Trade Portal serves as an online platform that provides businesses with essential information on trade regulations, procedures, and requirements for importing and exporting goods. By offering a centralized source of trade-related information, the portal enhances transparency, reduces trade barriers, and facilitates cross-border trade activities. This initiative plays a critical role in promoting international trade, enhancing market access, and supporting business growth in Kenya.

Lastly, the Business Registration Service (BRS) is a G2B initiative designed to simplify the process of business registration and licensing in Kenya. By providing a one-stop shop for business registration services, the BRS streamlines procedures, reduces bureaucracy, and promotes ease of doing business in the country. This initiative aims to create a more business-friendly environment, attract investment, and support the growth of enterprises across various sectors of the economy.

Government-to-Government (G2G)

For Government-to-Government (G2G) interactions, IFMIS is utilized by both the national and county governments and has been integrated with other government agencies. The Uadilifu Case Management System, developed by the Office of Director of Public Prosecutions (ODPP) in 2020 and integrated into the Independent Police Oversight Authority (IPOA) system and the Judiciary e-filing system, aims to enhance effectiveness and efficiency within the criminal justice system (Ministry of ICT, Innovation and Youth Affairs, 2020). The Integrated Population Registration System is also a G2G initiative that aims to modernize and streamline the process of registering and managing population data in Kenya. By integrating data from various government agencies, such as the National Registration Bureau and the Department of Immigration, the

IPRS enhances data accuracy, security, and interoperability. In addition, the Kenya TradeNet System is an electronic platform that facilitates trade processes and documentation for importers, exporters, and government agencies involved in trade facilitation. By automating trade procedures and reducing paperwork, the system enhances efficiency, transparency, and compliance in cross-border trade activities.

E-participation

E-participation in Kenya primarily occurs through government websites offering online information and participatory tools such as social media, websites, and emails for citizen interaction with ministries, departments, and agencies (MDAs) and county governments. The Public Service Commission report (2023) revealed that out of the 478 public organizations that reported to have functional websites, 432 (90%) were confirmed to be functional. Article 232(1) of Chapter 13 of the Constitution of Kenya 2010 highlights transparency and the provision of accurate and timely information as key principles of public service. E-participation contributes to transparency, accountability, and citizen participation, principles entrenched in the Constitution (UNESCO, 2014). The budgetary process is open to citizen participation, as the National Treasury has been publishing financial budgets online since 2007. The Office of the Controller of Budget regularly publishes online expenditure figures, allowing Kenyans to compare budgets against actual financial figures and raise queries in case of discrepancies.

Status of e-government and e-participation

From 2012 to 2022, Kenya has shown consistent growth in e-government development, online service provision, and the quality of its telecommunication infrastructure (Figure 10.16). This progress is attributed to advancements in digital government services, including the development of e-information on policies, laws, and archives on portals and websites. Kenya's

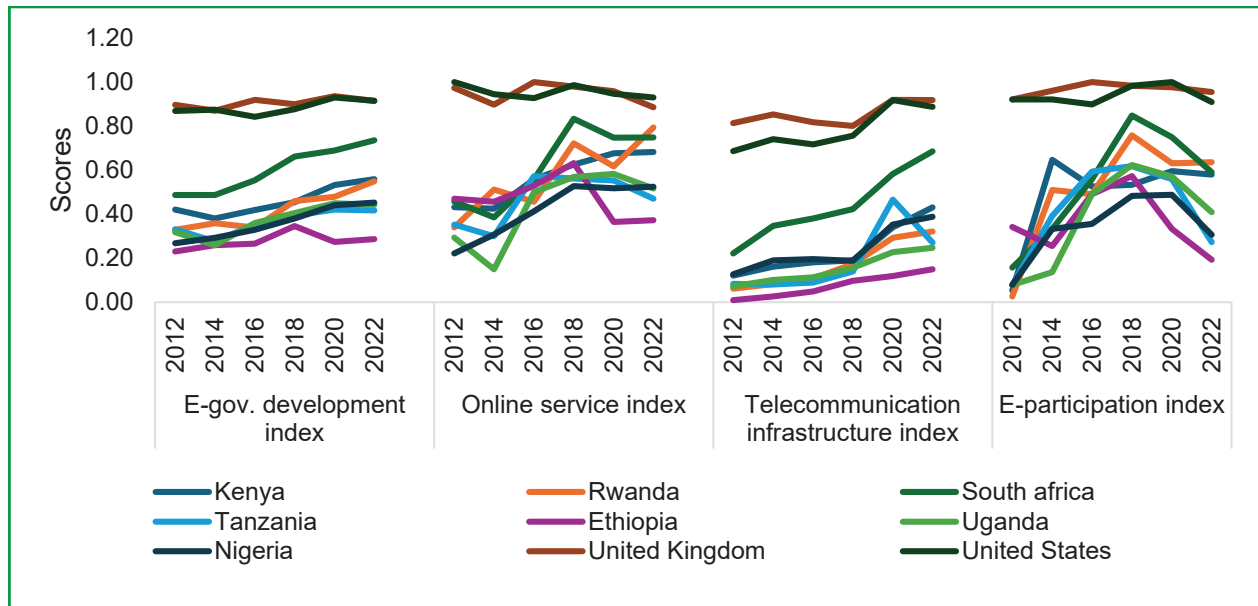
average scores for e-government, online service index, telecommunication infrastructure index, and e-participation index were 0.23, 0.28, 0.24, and 0.49, respectively, during this period.

Comparing Kenya to other African countries, Kenya's ratings are generally higher than Nigeria, Uganda, Ethiopia, and Tanzania, but lower than South Africa and Rwanda in all components. Rwanda, for example, had an average score for e-government of 0.21, an online service index of 0.29, a telecommunication infrastructure index of 0.17, and an e-participation index of 0.51 between 2012 and 2022. On the other hand, South Africa had an average score for e-government of 0.30, an online service index of 0.31, a telecommunication infrastructure index of 0.44, and an e-participation index of 0.77 during the same period.

Rwanda stands out for its remarkable progress in e-participation, indicating a strong emphasis on citizen engagement in governance. South Africa, on the other hand, demonstrates a high online service index and telecommunication infrastructure index, highlighting its robust online service offerings and well-developed telecommunication networks.

For the countries outside Africa, the United Kingdom had an average score for e-government of 0.91, an online service index of 0.95, a telecommunication infrastructure index of 0.85, and an e-participation index of 0.97 between 2012 and 2022. The United States had an average score for e-government of 0.88, an online service index of 0.96, a telecommunication infrastructure index of 0.78, and an e-participation index of 0.94 during the same period. Both the United Kingdom and the United States demonstrate exceptional performance across various indices, characterized by their advanced online services, well-established telecommunications infrastructure, and a strong focus on citizen participation in governance.

Figure 10.16: The e-government development index and e-participation index in selected African countries and aspirator countries outside Africa, 2012-2022



Data source: United Nations, E-government surveys (various years)

The government under BETA has committed to increase and fast-track broadband connectivity across the country by constructing 100,000km of national fibre optic connectivity network. This is aimed to enhance government service delivery through digitization and automation of critical processes, making 80 per cent of government services available online (BETA, 2022). According to ICT Authority, a total of 8,900kms national fibre optic connectivity network across the country has been built.ⁱⁱ

10.4.4 Setting up of oversight bodies

Over time, the government has set up various bodies as part of its intervention measures to strengthen public service delivery. The bodies focus on various aspects of public service including human resource management; operations; behavioural-integrity; remuneration; productivity; and administrative justice (Table 10.2).

Table 10.2: Oversight bodies strengthening public service delivery

Year	Body	Area of focus	Core mandate
1954	Civil Service Commission (CSC) renamed Public Service Commission (PSC) in 1963	Human resource management	Provide competent human resources
1955	Auditor General Office	Operations compliance	Identify areas of improvement and recommend corrective actions
2009	State Corporations Advisory Committee	Remuneration	Foster efficiency in remuneration practices. Review and investigate affairs of State Corporations
2010	Judicial Service Commission	Behavioural integrity	Uphold high ethical standards

2010	Office of the Director of Public Prosecutions	Behavioural integrity	Prosecute cases of corruption and malpractice
2010	Salaries and Remuneration Commission	Remuneration	Advice on salaries and remuneration
2011	Ethics and Anti-Corruption Commission	Behavioural integrity	Prevent and address corrupt practices
2011	The Commission on Administrative Justice (Office of the Ombudsman)	Administrative justice	Safeguarding the rights of citizens and ensuring transparency and fairness
2016	National Productivity and Competitiveness Centre	Productivity	Guide on productivity management strategies

Public Service Commission

The PSC is tasked with overseeing human resource management, recruitment, and performance evaluation in the public sector. It ensures that public servants are appointed based on merit and performance criteria. The mechanisms, measures, and tools to guarantee a transparent and accountable recruitment and promotion process is through consideration of merit and ability, taking into account qualifications, experience, and performance. Furthermore, the Commission supervises recruitment, maintains a confidential report system for employees, and follows procedures and principles for selection in acting promotions and appointments. The Commission also ensures that appointments, promotions, and transfers are conducted based on job-related criteria and legitimate position requirements. Through the performance appraisal results, the commission can objectively and fairly promote employees.¹

In addition, various requirements have been demanded by the PSC, particularly regarding the integrity and ethical conduct of each individual who applies for advertised positions. Individuals applying for positions in the public service must meet several requirements, including providing specific certificates to validate their eligibility. These certificates include a recent certificate of good conduct from the Directorate of Criminal Investigations (DCI), clearance certificates from the Higher Education Loans Board (HELB), Credit Rating Bureau (CRB), Kenya Revenue

Authority (KRA), tax compliance and Ethics and Anti-Corruption Commission (EACC). The purpose of submitting these certificates is to demonstrate the ethical standing of the applicants, ensuring only individuals with impeccable professionalism are admitted to the public service. Moreover, candidates entering professional roles within the public service must provide a subscription certificate from their respective professional bodies to confirm their good standing with these organizations.

Ministries, Departments, and Agencies (MDA's) report to the PSC quarterly providing updates on various aspects of public sector operations. This reporting mechanism enhances accountability and allows for effective oversight of human resource management practices. The reports spell out adherence to the Commission's guidelines, policies, and regulations for recruitment, training, promotion, and disciplinary procedures within the MDA's.² To monitor compliance, the commission conducts audits, reviews, and assessments to ensure that human resource management practices align with established standards and regulations.

The commission also provides training and capacity-building initiatives to enhance the human resource management capabilities within MDAs. This includes training programmes for human resource (HR) personnel or workshops to disseminate best practices. The establishment of service Level Agreements with MDAs has also been instrumental in

¹ Public Service Commission Act.pdf

² Guidelines for Development and Review of Human Resource Management Instruments for State Corporations.

determining adherence to commitments in their service charters. Where non-compliance or malpractice is reported, the PSC may conduct investigations and take enforcement actions against implicated individuals or entities. This could involve disciplinary measures, corrective actions, or recommendations for organizational restructuring.

For accountability purposes, the Commission regularly publishes reports summarizing its findings, recommendations, and actions taken regarding human resource management across MDAs. These reports serve to enhance transparency, accountability, and continuous improvement within the public service. Further, the commission fosters strategic collaboration and engagement with relevant stakeholders including civil society organizations, and international partners, which is crucial for effective oversight of human resource management practices. Regular engagement facilitates information sharing, problem-solving, and the exchange of best practices as part of the efforts to promote professionalism, efficiency, and integrity within the public service of Kenya.²

At the county level, County Public Service Boards (CPSBs) mirror the PSC's functions that is, overseeing human resource management within county governments. These boards play a crucial role in maintaining accountability and transparency in the county's public service operations. Through their role in recruitment, promotions, and disciplinary processes (Njagi Ileri, M. E., and Guyo, W., 2018), CPSBs have brought services closer to the people and promoted accountability in county government operations.

Although PSC has initiated such reforms as skills development, fostering of values, and promotion of equity and equality through the Human Resource Strategy Framework for the Public Service, the real need to professionalize, inspire, and improve staff morale within the public service in the country is not well functioning. It has been noted even though professionalism issues within the public

service are not easy to measure, issues such as morale and motivation which are easily measurable still do not have any measurable goal baseline. As a result, the actual impact of the strategies being employed currently is not well known (Ong'era, A., and Musili, B. M., 2019). Some of the emerging issues affecting human resources include employee wellbeing and increased prevalence of mental issues. The need for the development of policies and guidelines for the adoption of remote working and flexibility, which was accelerated by the COVID-19 pandemic to reduce commuting time and enhance productivity is also one of the issues that should be addressed. To keep pace with the rapid advancements in technology to transform the way work is done and to aid in mainstreaming disability issues, encouraging regular skills gaps analysis among MDAs, upskilling employees to meet technological demands is crucial, and redefining job roles to align with emerging technologies has been upheld in the country just like other comparator countries.

In Singapore for instance, there has been massive investment in technology to streamline processes, automate tasks, and enhance efficiency in public service delivery. Ensuring competency recruitment and training of top talent and continuous training has been elemental. The Civil Service College (CSC) of Singapore provides a wide range of training and development programmes tailored to the needs of public servants. In Denmark, there is an emphasis on flexible working hours to accommodate the needs of employees to allow employees to balance work and personal life effectively to enhance wellness. South Korea has rapidly adopted technology and innovation in public service management, leveraging advancements such as AI, big data, and automation to enhance productivity.

State Corporations Advisory Committee

The State Corporations Advisory Committee (SCAC) was established under section 26 of the State Corporations Act, Cap. 446.

It was formed to advise the President on various matters related to state corporations, including reviewing, and investigating their affairs, recommending necessary actions, advising on appointments and staff matters, and examining proposals for new business ventures.³ In addition, the State Corporations Advisory Committee (SCAC) advises on public servants' terms and conditions in state corporations, ensuring compliance with payroll management policies and promoting efficiency in remuneration practices. By fostering efficiency in remuneration practices and ensuring consistency across state entities, the SCAC has contributed to a more streamlined and accountable public sector.

Auditor General Office

To assess productivity in the public sector, the OAG conducts audits, assessments, and reviews to evaluate the efficiency and effectiveness of productivity within government entities. The office also employs financial audits, budget implementation reviews, and performance audits to ensure public sector transparency and accountability. Additionally, the Auditor General's Office utilizes mechanisms such as financial and performance reports, budget transparency, public participation requirements, and supervision to hold public entities accountable.

Some of the emerging issues regarding public sector productivity include challenges in the implementation, management, and placement of skilled staff within civil service institutions. These challenges impact the overall productivity and efficiency of the public sector workforce, emphasizing the need for improved processes and strategies to enhance productivity in the public sector.⁴

Judicial Service Commission

The Judicial Service Commission (JSC), established in 2010 has been instrumental in safeguarding the independence and integrity

of the Judiciary in Kenya. By overseeing the recruitment, promotion, and discipline of judicial officers, the JSC has upheld high ethical standards and ensured the judiciary's impartiality. Through transparent and merit-based processes, the JSC has promoted accountability and professionalism within the judiciary, contributing to public trust in the legal system. The commission's efforts have led to a more efficient and effective judiciary that upholds the rule of law and delivers justice fairly and impartially.

The JSC employs a productivity index to assess the performance of judges and judicial officers in the country. For performance management, the JSC institutionalized performance management in 2016 to enhance and monitor the effectiveness of judicial staff and judicial officers. For quality assurance, the commission advances continuous judicial education through the Kenya Judiciary Academy to enhance the competence, skills and knowledge of judicial officers, staff and judges. The Judiciary Transformation Framework has been critical in promoting service delivery, which has culminated in decentralization to enhance access to justice for all citizens through magistrate and mobile courts. The commission has supported digital transformations by embracing digitization and automation through e-filing, virtual court proceedings, and the Case Tracking System to increase transparency and accountability, and reduce delays in the dispensation of justice. Through this, the commission has invested in informed decision-making processes by relying on up-to-date data and information to inform staff and judges' deployment.

Ethics and Anti-Corruption Commission

The Ethics and Anti-Corruption Commission (EACC), founded in 2011, has been at the forefront of combating corruption and promoting integrity in public sector operations. Through investigations, prosecutions, and public awareness campaigns, the EACC has worked to prevent and address corrupt practices within government institutions. By holding

³ The State Corporations Advisory Committee (SCAC)

⁴ Report of the Auditor -General on Ministry of Labour for the year ending June 2022.

accountable those engaged in corruption and malpractice, the EACC has sent a strong message that unethical behaviour will not be tolerated. The commission's activities have led to increased transparency, reduced corruption, and improved governance practices in Kenya's public sector creating a more conducive work environment that fosters productivity and excellence among public servants.

Some of the focused initiatives that the commission has recently been involved in include integrity and corruption prevention in Ministries, Departments, and Agencies pilots on performance measurement are ongoing in selected sectors such as health and some agencies; nurturing future professionals through public education programmes to encourage the youth to embrace integrity and intolerance to corruption.

The commission has also collaborated with the Ministry of Education to create awareness through integrity clubs to provide an opportunity to participate in activities promoting diversity and inclusion. The Kenya National Integrated Civic Education Programme (K-NICE) is one of the multi-stakeholder government-led initiatives for creating the necessary civic awareness on issues including corruption and unethical behaviour.

Office of the Director of Public Prosecutions

The Office of the Director of Public Prosecutions (ODPP) was established in 2010 to prosecute cases of corruption and malpractice within the public service. ODPP has been at the forefront of prosecuting cases of corruption and malpractice within the public service. By enforcing the rule of law and holding accountable those engaged in corrupt practices, the ODPP has contributed to fostering a culture of accountability and integrity in public service.

The ODPP emphasizes quality assurance initiatives by ensuring that prosecutions are conducted fairly, effectively, and in accordance with the law. By maintaining high standards

of quality in its operations, the ODPP adds value by promoting trust in the justice system and ensuring public service delivery meets expectations. The ODPP is guided by Excellence Charter 2020, which aims to enhance service delivery through accountable use of public resources.

Salaries and Remuneration Commission

Salaries and Remuneration Commission (SRC) provides guidance on salaries and benefits for public service employees, ensuring fairness and equity in remuneration practices. The commission has helped maintain a level playing field and promote professionalism in the public service.

The performance-based pay concept used by the commission assists in ensuring there is rationality in payment of public and state officers based on their performance and productivity. The commission makes use of Manpower Development and Productivity Management with the necessary skills needed to perform effectively, which translates to better performance and organizational effectiveness leading to high productivity in the public sector.

National Productivity and Competitiveness Centre

The National Productivity and Competitiveness Centre (NPCC) plays a vital role in enhancing productivity and competitiveness within public service in Kenya. By guiding productivity management strategies, the NPCC aims to drive efficiency and effectiveness in public service. Through initiatives such as capacity building programmes, benchmarking exercises, and productivity assessments, the NPCC contributes to fostering a culture of continuous improvements and innovation.

The NPCC focuses on productivity management as part of Kenya's Vision 2030 goals to raise the country's competitiveness and productivity levels. By implementing strategies and programmes such as mainstreaming

productivity training for public servants, the Centre can set performance targets for Ministries, Departments, and Agencies (MDAs) across Kenya, aiming to improve productivity through training and skill development and thus playing a critical role driving economic growth. The NPCC has strategic collaborations with TVETs and partnerships with private entities such as the KCB foundation aimed at manpower and skill development to increase productivity in the public sector.

Commission on Administrative Justice

The Commission on Administrative Justice, commonly known as the Office of the Ombudsman serves as a key oversight body responsible for investigating complaints of maladministration, abuse of power, and violations of rights within the public sector. By providing a mechanism for redress and accountability, the Ombudsman plays a crucial role in safeguarding the rights of citizens and ensuring transparency and fairness in public service. The Commission on Administrative Justice has facilitated the resolution of numerous complaints and grievances related to public services. Through the investigations and recommendations, the Ombudsman has promoted accountability, transparency and good governance practices within government institutions enhancing public trust and confidence in the administration.

To ensure effective public service delivery, by enforcing the right to access information as provided by the Access to Information Act

2016. To enhance the levels of awareness of the public, the Commission investigates and prosecutes violations of the Act, and thus exposes inefficiencies. As a result, this fosters a fair and efficient public sector environment conducive to productivity and effective service delivery.

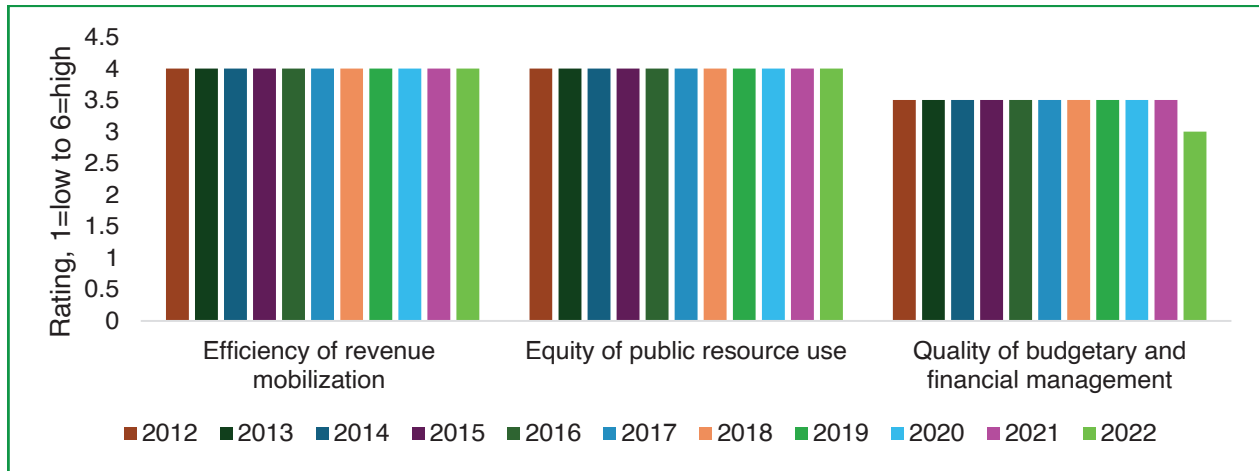
10.5 Productivity and Financial Management

A key factor to consider is how public service productivity is related to the quality of budgetary and financial management including revenue collection and expenditure allocations. This section discusses the quality of budgetary and financial management at both national and county levels.

a) Quality of budgetary and financial management at national and county levels

At the national level, the CPIA index indicates that Kenya's efficiency in revenue mobilization and equity of public resource use has consistently been rated at four (4) out of six (6) from 2012 to 2022 (Figure 10.17), reflecting a moderate to high-quality assessment. However, there has been a decline in the quality of budgetary and financial management practices, with the rating decreasing from 3.5 in 2012 to 3.0 in 2022. This slight decrease in 2022 may be linked to factors such as economic conditions, external shocks, and disruptions from the 2022 elections affecting budget execution and financial management practices.

Figure 10.17: CPIA rating (1=low to 6=high), 2012-2022

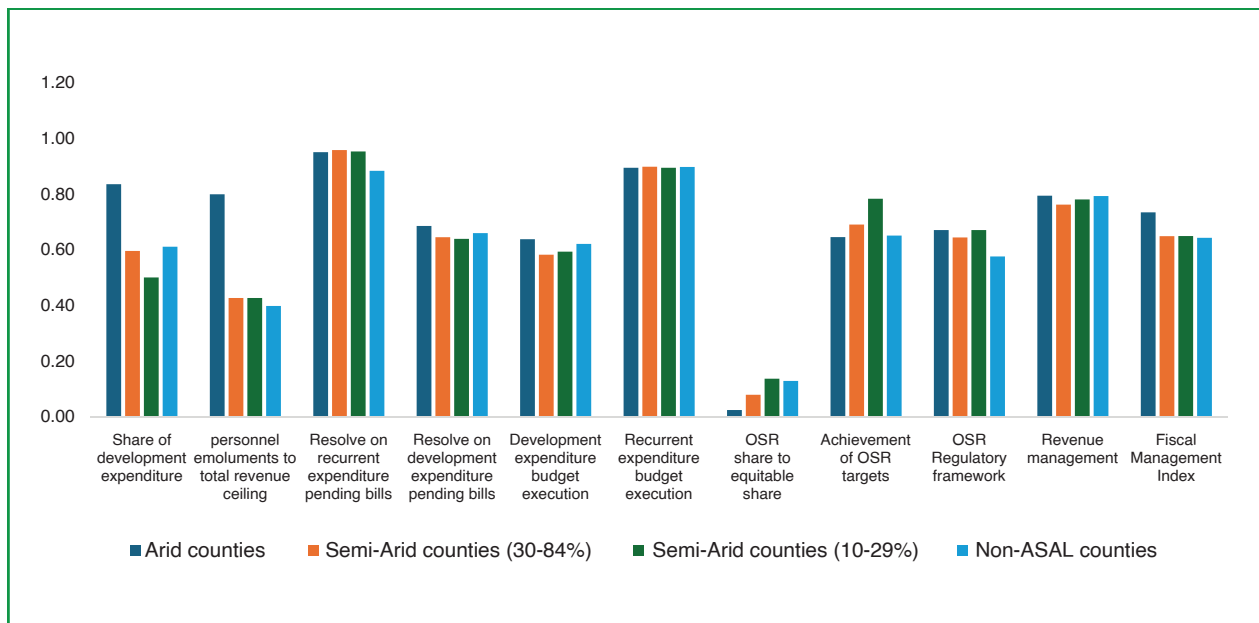


Data source: World Bank (Various Years)

At county level, the public affairs index by KIPPRA, evaluated fiscal management by assessing 10 indicators including development expenditure, recurrent expenditure, personnel emoluments, and own-source revenue. Arid counties recorded the lowest score of an average of 0.73 in fiscal management and the lowest score of an average of 0.02 in revenue

mobilization (Figure 10.18). This is attributed to lack of a system in place and qualified personnel for revenue management. Conversely, levels of automation of revenue collection in non-ASAL counties were particularly high, with counties using electronic payment systems and some counties being completely cashless.

Figure 10.18: Scores for fiscal management indicators, county level, 2022



Data source: KIPPRA Public Affairs Index, 2022

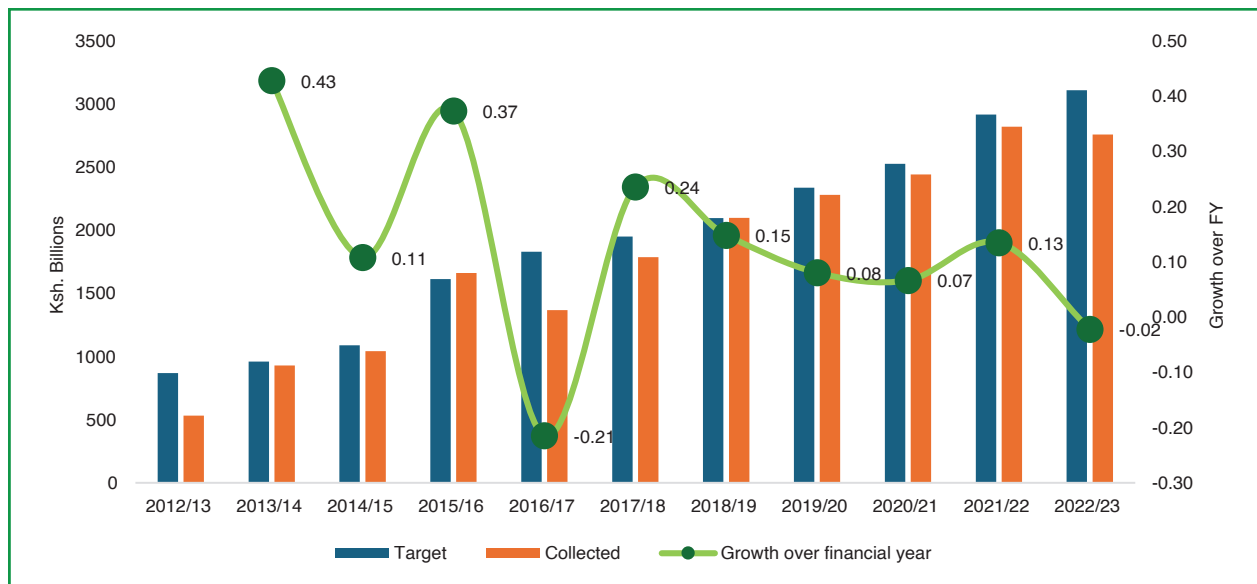
b) Revenue collections

While there has been a steady increase in revenue collection over time, notable revenue collection growth declines occurred in 2014/15 and 2016/17 (Figure 10.19) due to disruptions from the devolved system of governance and heightened political risks. It is worth noting that the tax and non-tax revenue surpassed the revised target at 103.1 per cent in 2015/16. This reflects a bouncing from a significant decline in 2014/15, which followed the introduction of the devolved system of government. Despite

the overall revenue growth, there have been shortfalls in meeting set targets across financial years.

The shortfall in revenue collection and low growth over a financial year may lead to budget constraints, affecting the government’s ability to fund essential services and projects efficiently. This, in turn, can result in delays or limitations in service delivery, reduced capacity for public investments, and constraints on resource allocation for key programmes.

Figure 10.19: Revenue collection, national level, 2012/13-2022/23



Data source: OCOB, Annual National Government Budget Implementation Review Report

At the county level, the growth rate in the amount of own source revenue collected from the first government to the second government varied across the counties ranging from -0.19 to 1.44 with an average of 0.51 (Figure 10.20). Out of the 47 counties, 17 counties had a growth rate in the amount of own source revenue above the average level of 0.51, while 30 counties had a growth rate below the average indicating that most counties performed below the average growth rate. The counties of Wajir, Samburu, Garissa, Meru, Nakuru, Busia, Nairobi, Kisumu, Bomet, and Machakos were identified as part of the bottom 10 counties with the lowest growth rate in the amount of own source revenue showing that that these counties experienced

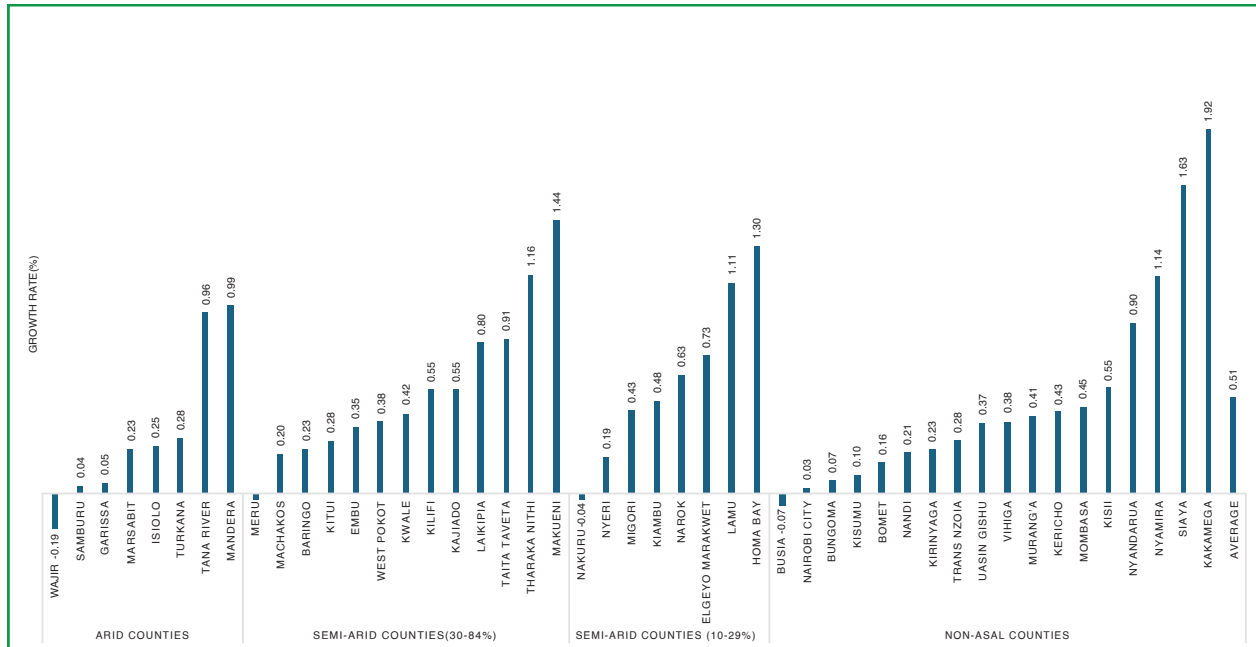
challenges or limitations in revenue generation during the transition period. Conversely, Kakamega, Siaya, Nyamira, Nyandarua, Mandera, Homa Bay, Lamu, Makueni, Tharaka Nithi, Taita Taveta, and Mandera counties were among the top 10 counties with the highest public administration productivity demonstrating strong performance in revenue collection, indicating effective financial management and potentially robust economic activities.

In addition, the data indicates that the growth rate in the amount of own source revenue collected from the first county government to the second county government is lowest in

arid counties at 0.33, followed by non-ASAL counties at 5.1 and semi-arid counties at 0.53. This variation in own source revenue growth rate across different types of counties could be influenced by factors such as automated revenue collection systems in place, favourable policy supporting business, investment, and revenue collection. In addition, counties that invested in infrastructure development projects

may have attracted more economic activities, leading to increased revenue generation from sources such as property taxes, permits, and fees. Arid counties face challenges related to infrastructure, which can impact revenue collection. Conversely, non-arid counties have better access to resources, infrastructure, and economic opportunities, leading to higher revenue collection.

Figure 10.20: Growth rate (%) in the amount of own source revenue collected from the first government to the second government, 2013-2022

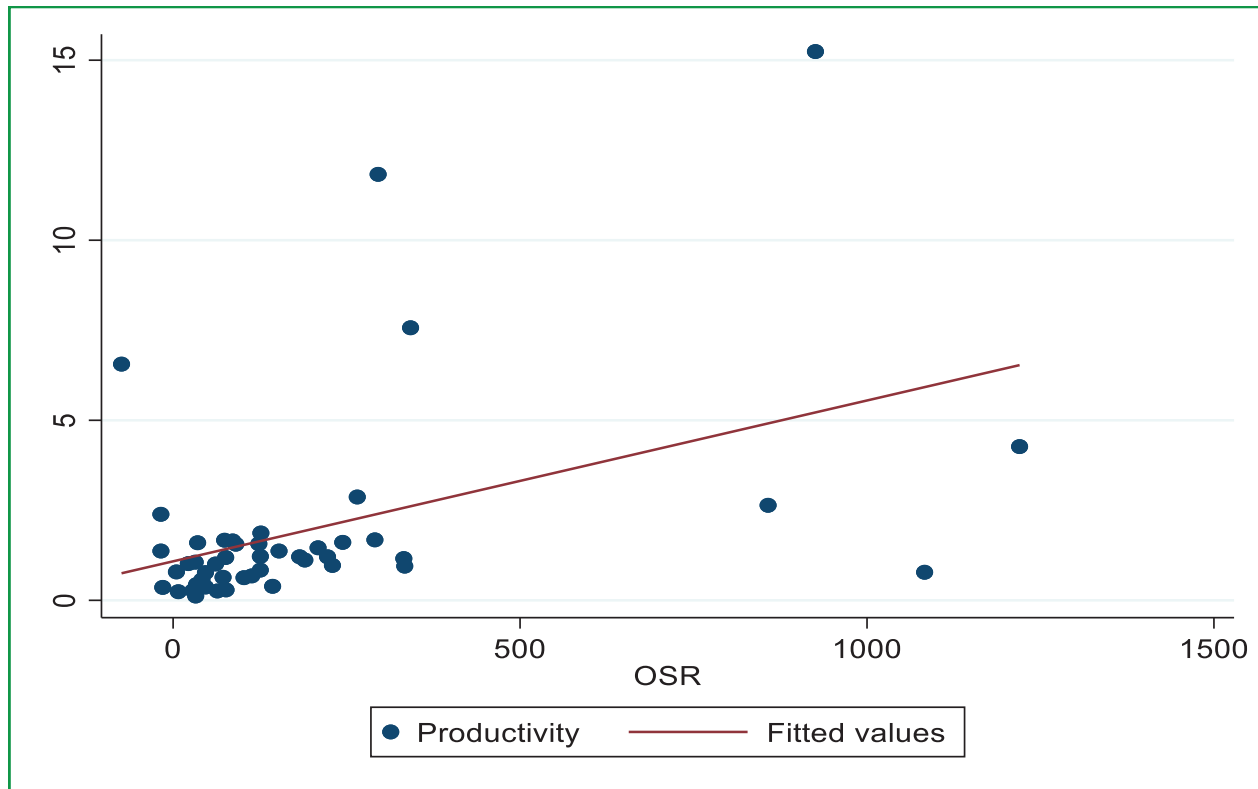


Data source: OCOB, County Governments Annual Budget Implementation Review Report, 2021/22

With a positive correlation (Figure 10.21) between the change in own source revenue collected by counties and labour productivity in the public service, this suggests that increased own source revenue collected is associated

with increased labour productivity. Meaning, increased labour productivity of the workforce is associated with increased revenue collection capacities put in place by the counties and effective delivery of public services.

Figure 10.21: Correlation of labour productivity in public service with the change in own source revenue



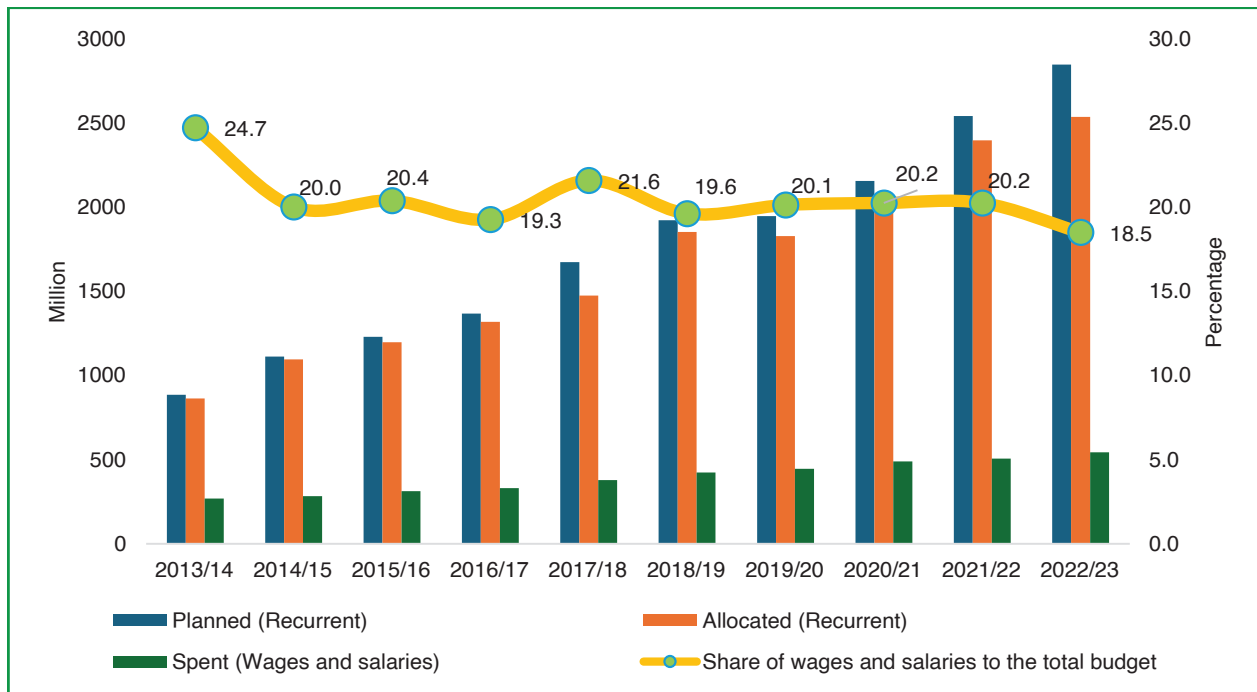
Data source: OCOB, County Governments Annual Budget Implementation Review Report, and Author's computation

c) **Budget allocation to wages and salaries**

The allocated budget for wages and salaries has remained significantly below the stipulated ceiling of 35 per cent (Figure 10.22) set by the Public Finance Management Act 2012, Section 15(2)(b). This section mandates that the national government's expenditure on wages and benefits should not exceed 35 per cent of

the national government's revenue. In addition, the total amount allocated to the recurrent budget including salaries and wages has consistently remained significantly below the planned recurrent budget. Various studies have consistently shown that higher salaries and wages often increase employee motivation and productivity hence the need to increase salaries and wages to enhance labour productivity in public service.

Figure 10.22: Wages and salaries spending, national level, 2013/14-2022/23

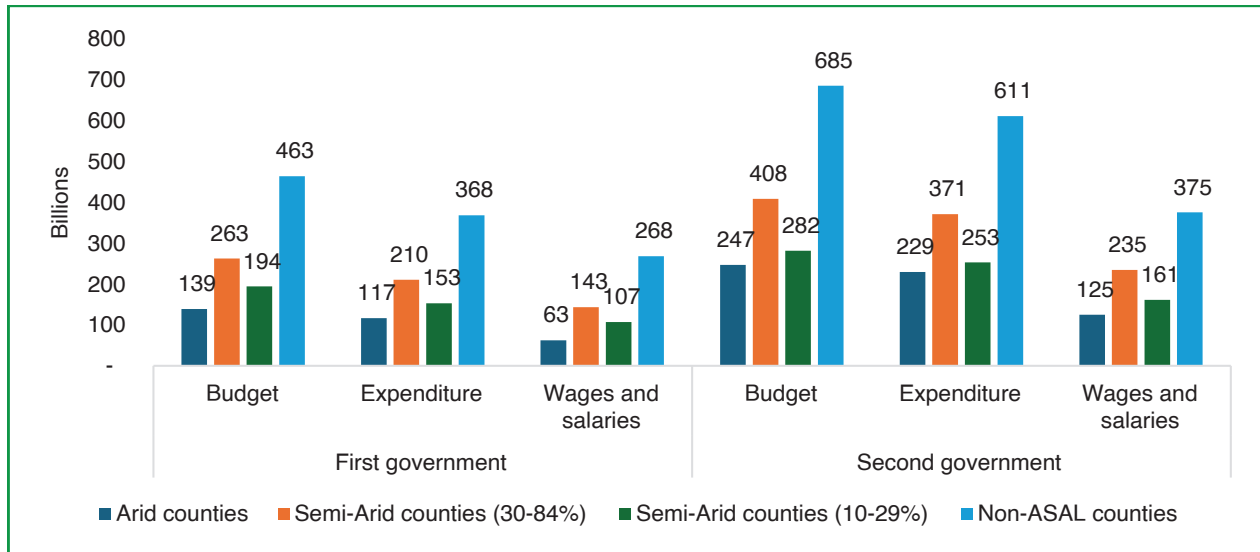


Data source: OCOB, Annual National Government Budget Implementation Review Report

At the county level, the higher wage and salaries spending in the second government compared to the first government (Figure 10.23) is primarily due to increase in workforce in the second government, necessitating increased expenditure to accommodate more employees. The data reveals that the change in wages and salaries from the first county government to

the second county government is lower in arid counties at 62 million, followed by non-ASAL counties at 107 million and semi-arid counties at 146 million. This variation in salaries and wages could be attributed to factors such as workforce composition and administrative structures in each county.

Figure 10.23: Wages and salaries spending, county level

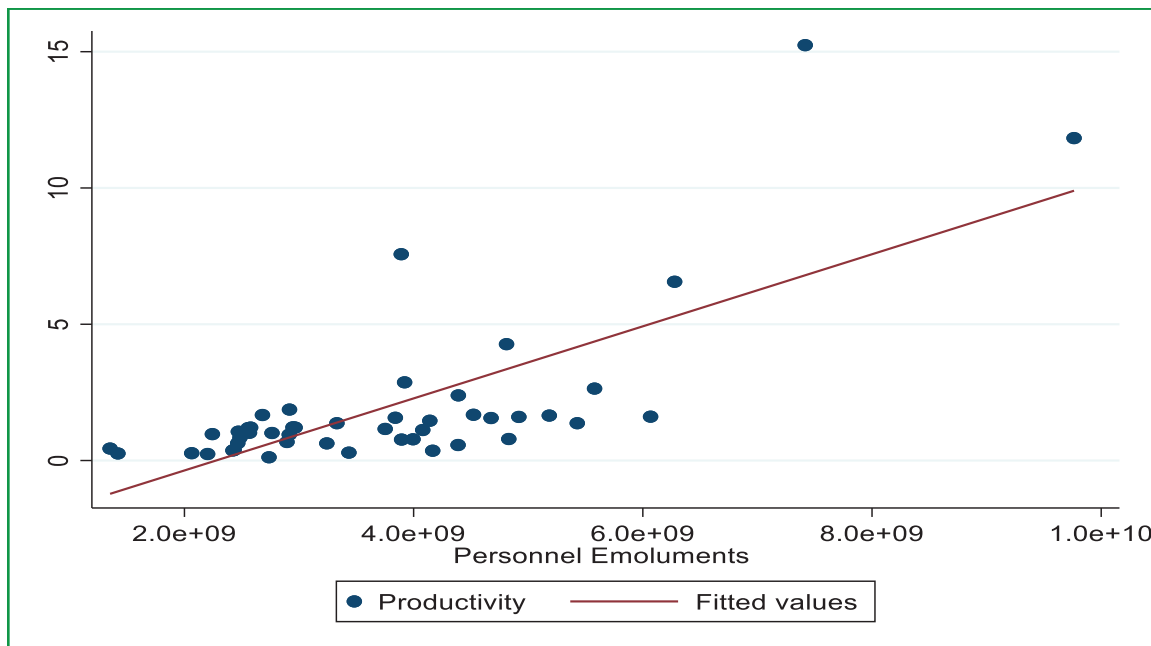


Data source: OCOB, Annual National Government Budget Implementation Review Report

With a positive correlation (Figure 10.24) between the change in salaries and wages and labour productivity in the public service, this indicates that increased salaries and wages are associated with increased labour productivity.

Meaning, an increase in salaries and wages boosts the morale of employees and enhances the productivity of their workforce and delivery of public services more effectively.

Figure 10.24: Correlation of productivity in public service with salaries and wages



Data source: OCOB, County Governments Annual Budget Implementation Review Report, and Author's computation

d) Operational and maintenance spending

National level

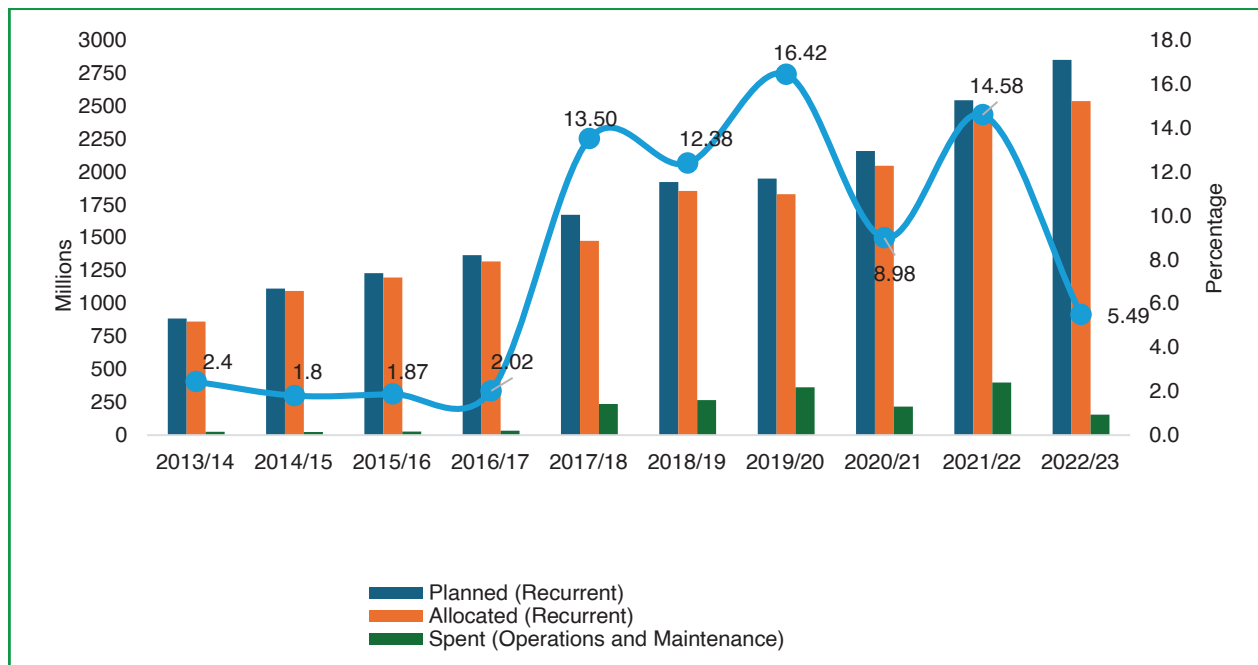
There has been a notable gap between the planned recurrent expenditure, recurrent spending, and the actual allocated amounts to operations and maintenance in government budgets (Figure 10.25) leading to a low share of operational and maintenance to the total government budget. The share of operational and maintenance spending to the total budget remained low between 2013/14 to 2015/16 ranging from 1.8 per cent to 2.4 per cent. The operational and maintenance spending peaked in 2016/17 and declined in 2020/21 due to the impact of the COVID-19 pandemic.

The share of operational and maintenance spending to the total budget peaked in 2016/17 due to a possible increase in infrastructure projects, equipment maintenance, or other operational needs that required higher funding

allocation. This peak could also be attributed to a strategic decision to prioritize maintenance and operational activities to enhance service delivery and efficiency within the public sector. Conversely, the decline in operational and maintenance spending in 2020/21 can be largely attributed to the impact of the COVID-19 pandemic. The pandemic led to budget constraints, reallocations of funds to address urgent healthcare and economic needs, and a shift in priorities towards pandemic response and recovery efforts. This led to reduced allocations for non-essential operational and maintenance activities during this period, leading to the observed decline in spending on operational and maintenance in 2020/21.

Insufficient funding for operational and maintenance needs can have implications for the facilitation of work within the public sector including delays in infrastructure repairs, equipment upgrades, and other essential tasks, ultimately impacting the efficiency and productivity of public services.

Figure 10.25: Operational and maintenance spending, national level, 2013/14-2022/23



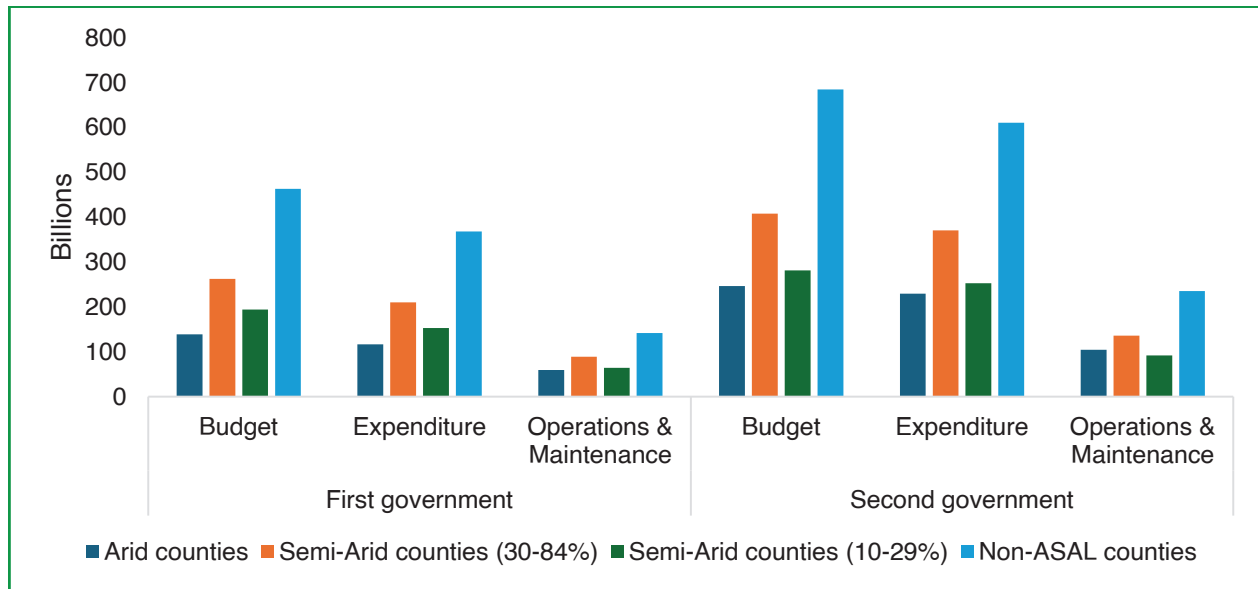
Data source: OCOB, Annual National Government Budget Implementation Review Report (various years)

County level

There is a noticeable increase in operations and maintenance spending in the second government to the first government by Ksh 259 billion, with the highest change observed in non-

ASAL counties (Figure 10.26). This suggests that a higher level of financial resources were directed towards operations and maintenance in the second government, especially in counties with a lower aridity index.

Figure 10.26: Operational and maintenance spending, county level

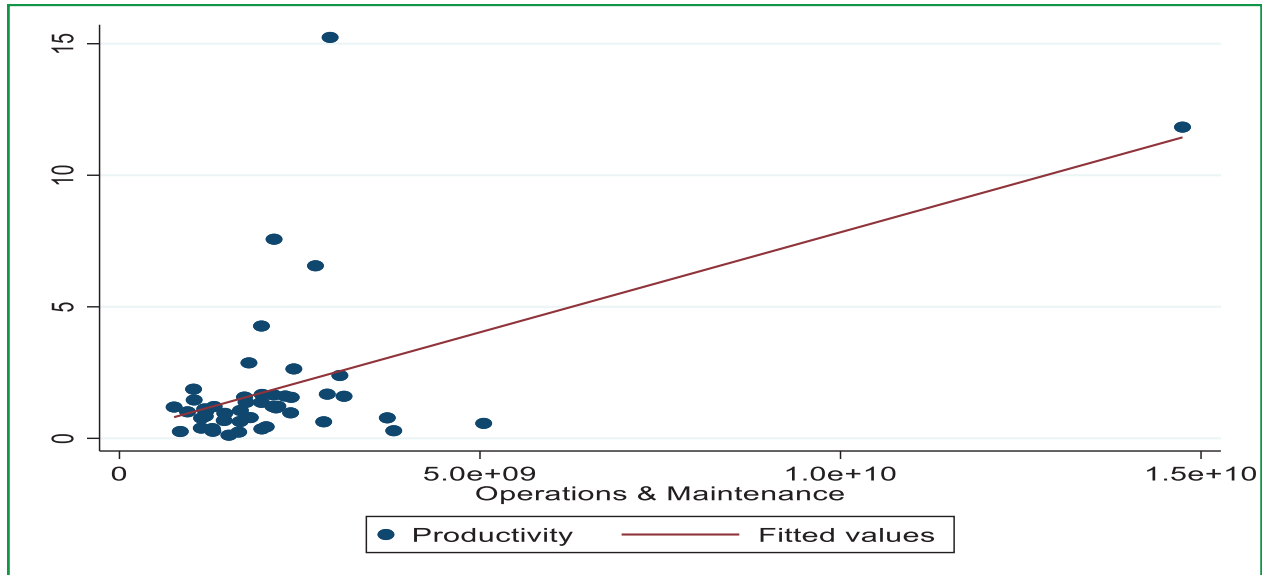


Data source: OCOB, County Governments Annual Budget Implementation Review Report

With a positive correlation (Figure 10.27) between the operational and maintenance and labour productivity in the public service, this indicates that improved operations and maintenance are associated with increased labour productivity. This suggests that maintaining infrastructure to prevent breakdowns and reduce downtime,

ensuring technology systems are up to date for improved performance, facilitating efficient service delivery processes, boosting employee morale and safety, and ensuring long-term cost savings by avoiding unexpected repairs enhances productivity in public service.

Figure 10.27: Correlation of productivity in public service with operational and maintenance spending



Data source: OCOB, County Governments Annual Budget Implementation Review Report, and Author's computation

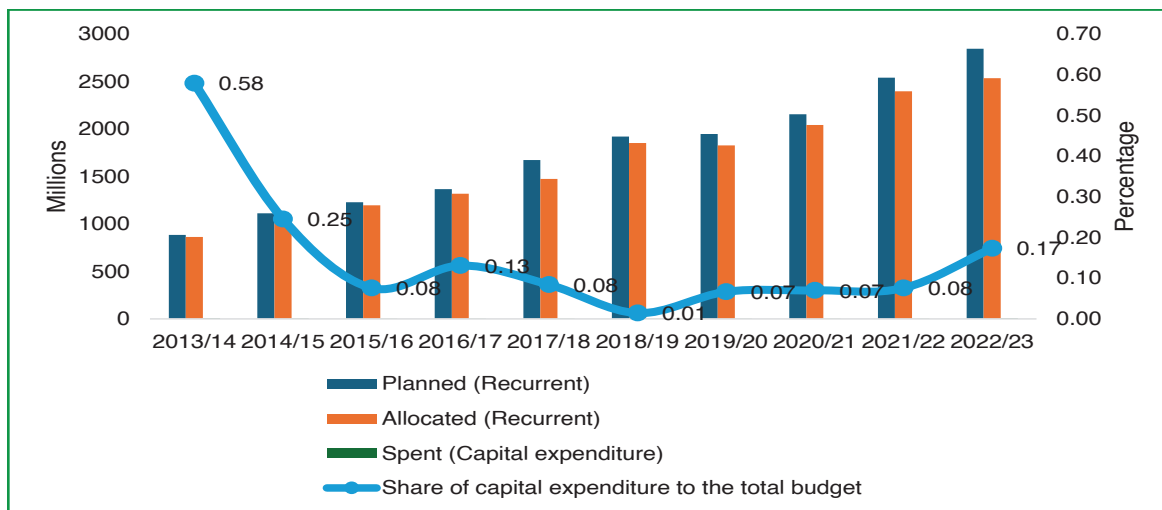
e) Capital expenditure

National level

There has been a low share of capital expenditure in the total government budget (Figure 10.28).

The low budget for capital expenditure can have significant implications for infrastructure development, asset acquisition, and other long-term investments within the public sector affecting the efficiency and effectiveness of service delivery in public service.

Figure 10.28: Capital expenditure spending, national level, 2013/14-2022/23



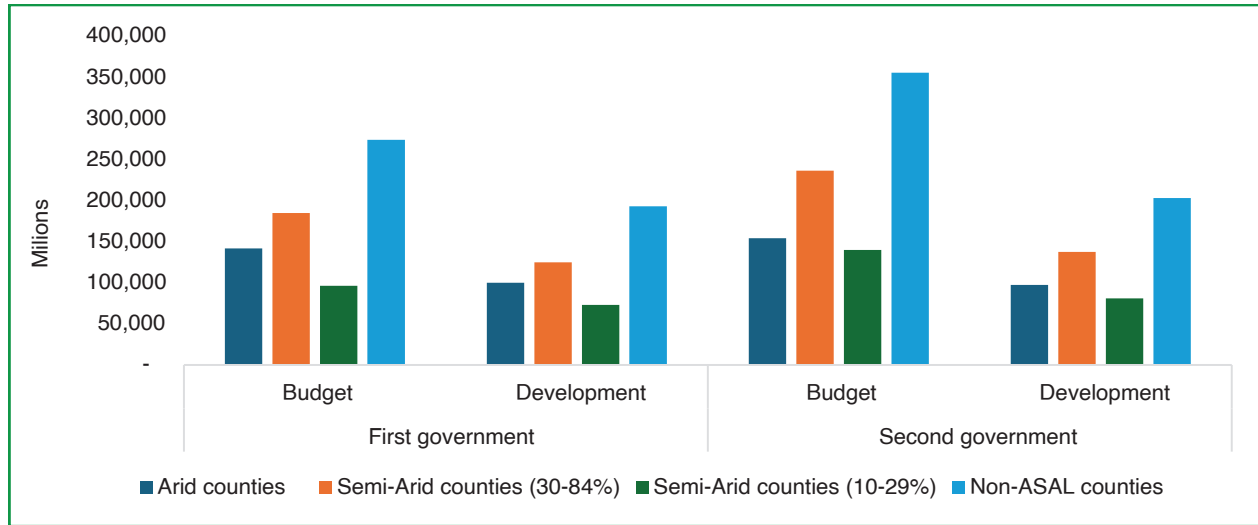
Data source: OCOB, Annual National Government Budget Implementation Review Report (various years)

County level

From the first government to second government, there was a noticeable increase in development budget across counties (Figure 10.29), with the highest development budgets increase observed in non-ASAL counties (81 billion), followed by semi-arid counties (30-

84%) (51 billion), semi-arid counties (10-29%) (43 billion) and arid counties (12 billion) (Figure 10.29). Despite the increase in development budgets, the actual development expenditure in the second government period was lower than the budgeted amounts for most counties, indicating potential challenges in fully utilizing allocated funds for development projects.

Figure 10.29: Development expenditure spending, county level

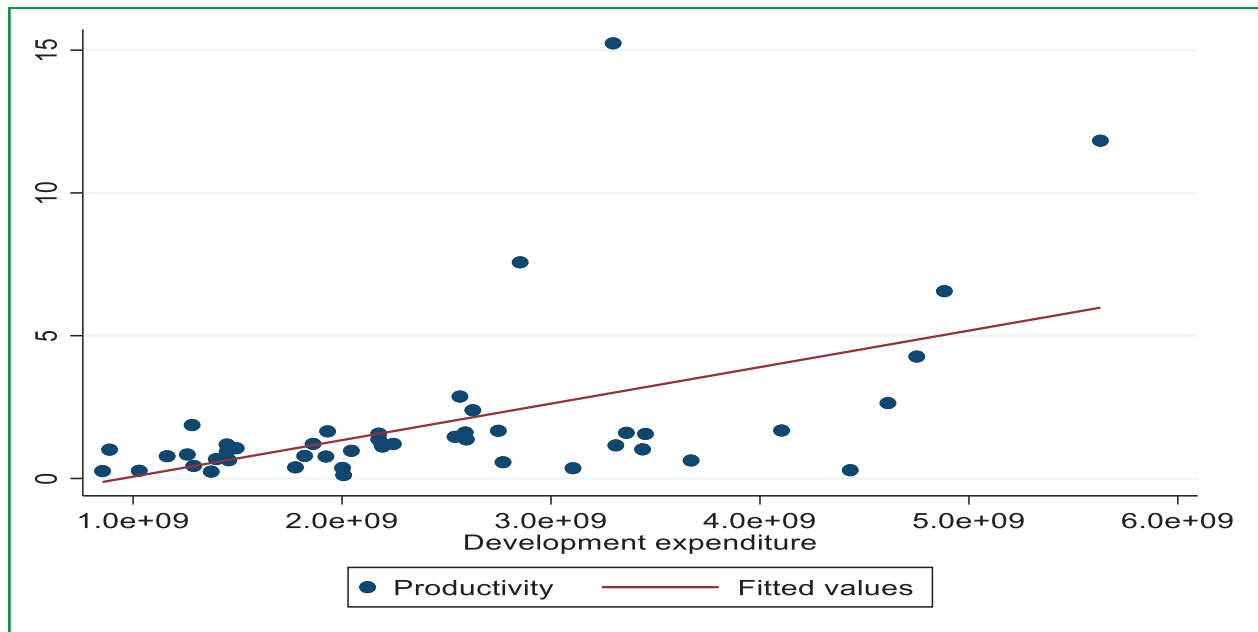


Data source: OCOB, County Governments Annual Budget Implementation Review Report (Various years)

With a positive correlation (Figure 10.30) between the development expenditure and labour productivity in the public service, this indicates that improved development expenditure is associated with increased labour productivity. This suggests improved infrastructure and facilities that make it easier for employees

to perform their duties efficiently, increased access to education, healthcare facilities and training opportunities that enhance employee skills and knowledge, and better healthcare services that contribute to a skilled, healthier and more productive workforce thus enhancing public service.

Figure 10.30: Correlation of productivity in public service with development expenditure



Data source: OCOB, County Governments Annual Budget Implementation Review Report, and Author’s computation

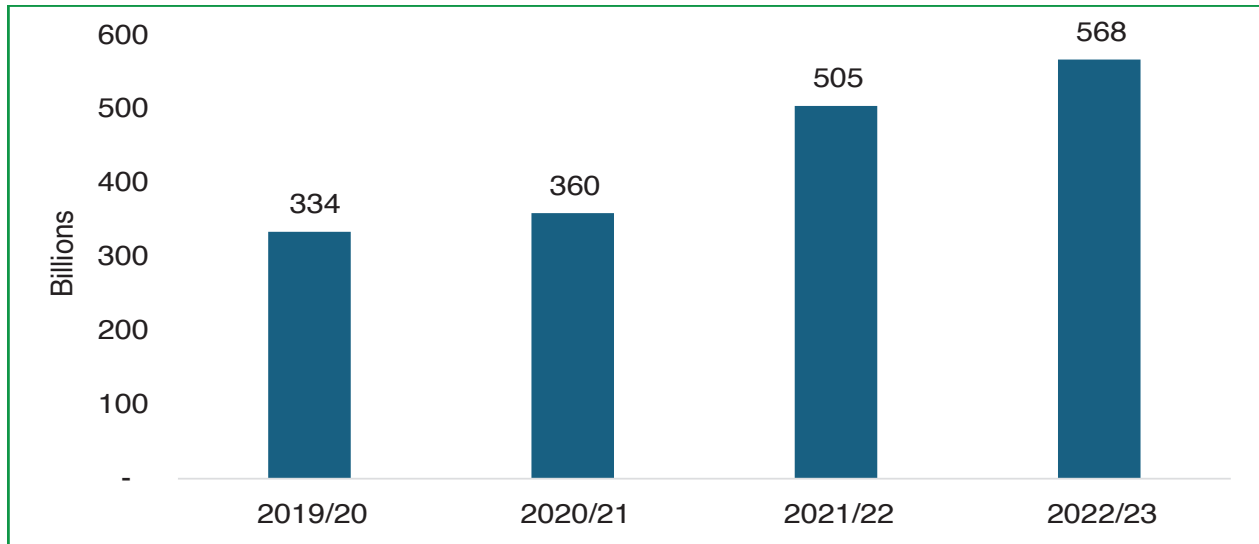
f) Pending bills

Pending bills refer to bills that have not been paid by the government within the agreed payment terms. The accumulation of pending bills can have significant implications for the productivity of public services and service delivery at the national level. When bills remain unpaid, suppliers and service providers may face financial constraints, leading to disruptions in the supply chain and potential delays in the delivery of goods and services to government agencies. This can result in strained relationships with suppliers, reduced trust in the government’s payment processes, and ultimately impact the quality and timeliness

of services provided to the public. Moreover, the presence of a high number of pending bills can create financial uncertainty for businesses and service providers, affecting their cash flow and operational stability. This, in turn, may lead to challenges in meeting their financial obligations, investing in growth opportunities, or maintaining consistent service levels. This section covers pending bills at national and county levels.

The increase in the value of pending bills from Ksh 334 billion in 2019/20 to Ksh 568 billion in 2022/23 (Figure 10.31) indicates a concerning trend of growing financial obligations that have not been settled by the government.

Figure 10.31: Pending bills at the national level, 2019/20-2022/23

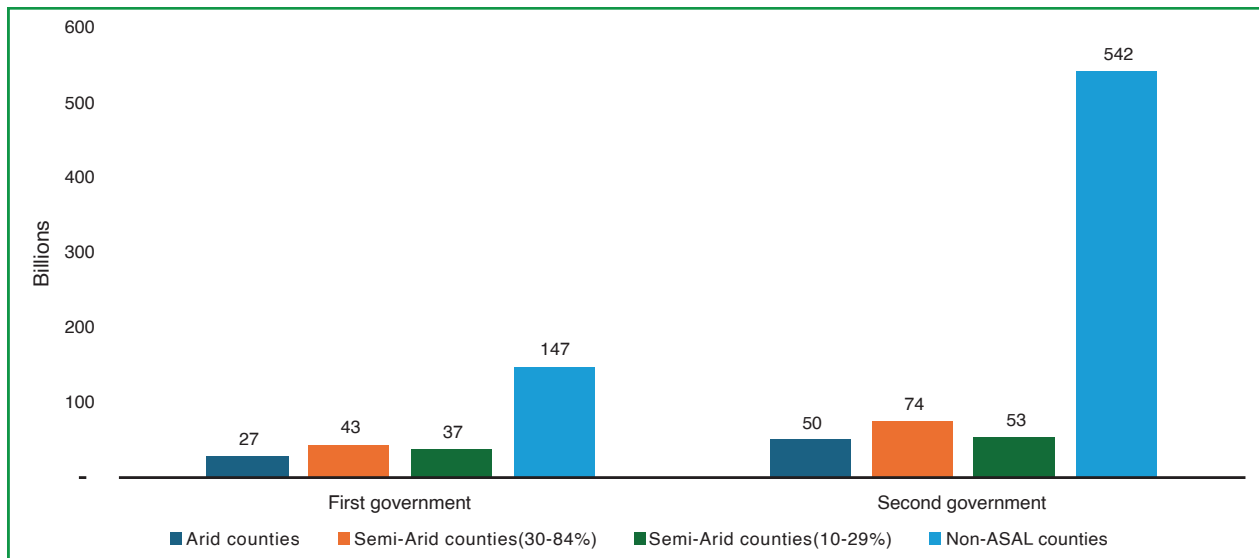


Data source: National Treasury and Planning, Quarterly Economic and Budgetary Review (Various years)

At the county level, the increase in pending bills from the first county government to the second government showed a notable trend across counties, with non-ASAL counties experiencing the most significant rise, followed by semi-arid counties with aridity indices of (30-84%)

and (10-29%) (Figure 10.32). In contrast, arid counties exhibited the smallest increase in pending bills. This increase can be attributed to various factors such as economic challenges, administrative changes and higher project implementation.

Figure 10.32: Pending bills, county level



Data source: OCOB, County Governments Annual Budget Implementation Review Report, and Author’s computation

10.6 Public satisfaction with public service delivery

Public satisfaction with public service delivery is crucial for assessing the effectiveness of government initiatives and programmes. This section delves into key factors influencing public satisfaction with public service delivery, including creating an enabling environment for business, promoting good governance practices, and upholding national values. These elements play a vital role in enhancing productivity within the public service sector, fostering transparency, accountability, and efficiency in service delivery.

a) Creating an enabling environment for business

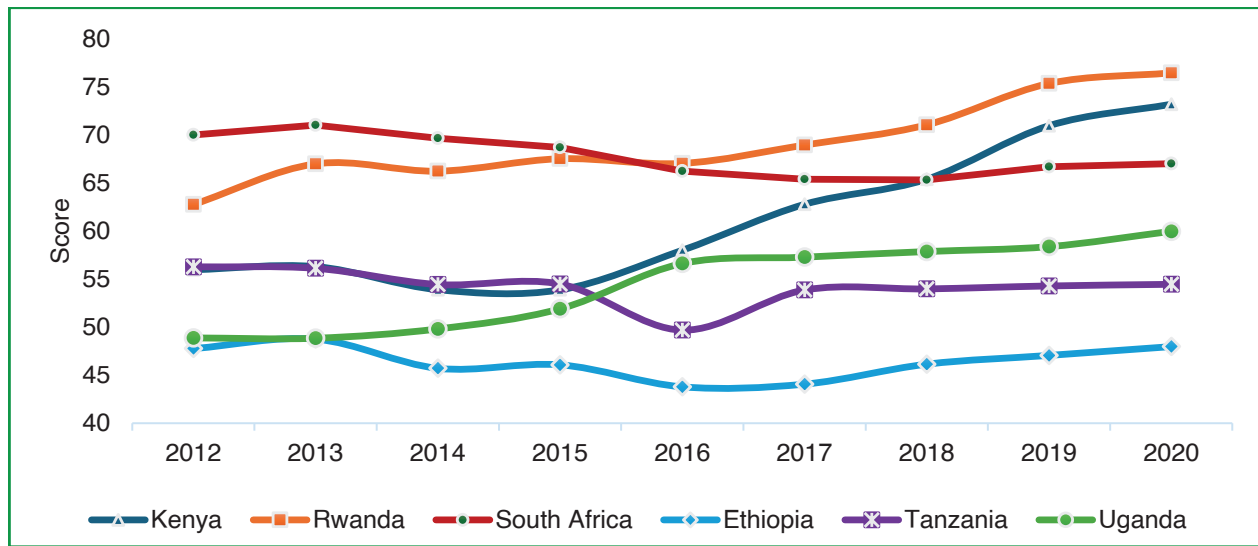
Creating an enabling environment for business is crucial for enhancing productivity in the public service. By fostering a conducive atmosphere for businesses to thrive, the government can stimulate economic growth, attract investments, and generate revenue that can be channelled back into public service delivery. A vibrant business environment not only boosts the economy but also creates opportunities for collaboration between the public and private sectors, leading to innovation, efficiency, and improved service delivery in the public sector. This section highlights the status of creating an enabling environment for businesses at the national and county levels.

The Ease of Doing Business Index plays a crucial role in evaluating the efficiency and effectiveness of government regulations and processes that influence businesses. The Ease of Doing Business score for Kenya has

displayed a consistently positive trend, rising from 56.0 per cent in 2012 to 73.2 per cent in 2020 (Figure 10.33). Kenya has enhanced its business environment through various reforms and policies. These include simplifying business registration processes, improving access to credit through credit information systems and collateral registries, strengthening property rights protection, investing in infrastructure development to improve connectivity, streamlining regulatory processes, facilitating trade through customs procedures, and enhancing investor protection mechanisms, for instance, Public Offers Listing and Disclosures Act and the Investor Compensation fund.

Rwanda emerges as a stand-out performer among selected countries (Figure 10.33). It has made significant strides toward business registration through online registration and the elimination of bureaucratic obstacles that attract investors. Rwanda has heavily invested in infrastructure to promote connectivity to support business operations. The country has a well-maintained road network, a modern airport, a reliable power supply, and the Kigali Innovation City, a technology park supporting innovation and entrepreneurship. Rwanda has committed to providing investors with a wide business network by proactively embracing investment and trade policies to support foreign investment. Other initiatives that have opened the country include agreements such as the African Continental Free Trade Area (AfCFTA). The Business Development Fund and the Rwanda Development Bank are part of a well-regulated and strong business financing mechanism supporting business development and growth.

Figure 10.33: Ease of doing business scores in selected African countries, 2012-2022



Data source: World Bank, 2023

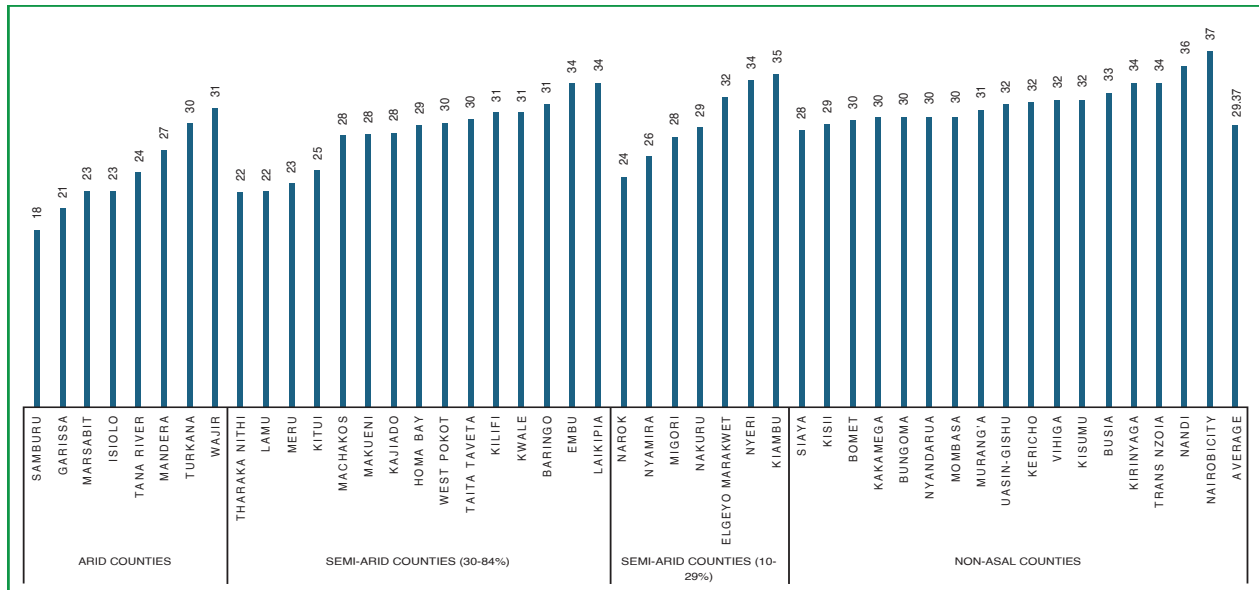
The status of the County Business Environment for Micro and Small Enterprises (MSEs) varies across different counties (Figure 10.34). With an average score of 29.3, the County Business Environment for Micro and Small Enterprises (MSEs) offers a comprehensive assessment across various indicators such as self-regulation, access to markets, crime and public security, licensing and issuance of permits, access to government procurement opportunities, and more. Among the indicators making up County Business Environment for Micro and Small Enterprises (MSEs), the highest scores were on self-regulation (74.2), access to markets (71.2), crime and public (70.8), security, ease of access to road infrastructure (70.5) while the lowest scores were on patenting (0.62), innovation (1.64) and Internet connection (3.94) (Njenga, G., et al.,2022).

Out of the 47 counties, 18 counties have CBEM 2022 scores below the average level of 29.3,

while 29 counties exhibited scores above this average. The counties of Samburu, Garissa, Tharaka Nithi, Lamu, Marsabit, Isiolo, Meru, Narok, Tana River, and Kitui were identified among the bottom 10 counties with the lowest CBEM scores. Conversely, Elgeyo Marakwet, Busia, Embu, Laikipia, Kirinyaga, Trans Nzoia, Nyeri, Kiambu, Nandi, and Nairobi counties were among the top 10 counties with the highest CBEM scores.

The disparities in CBEM scores among these counties may be attributed to factors such as worksite infrastructure, market conditions, technical capacity, governance practices, regulatory framework, financial inclusion, and risk management. Counties with higher CBEM scores have stronger scores in self-regulation, access to markets, crime and public security, licensing and issuance of permits, access to government procurement opportunities and more.

Figure 10.34: The overall county business environment for MSEs score, 2022

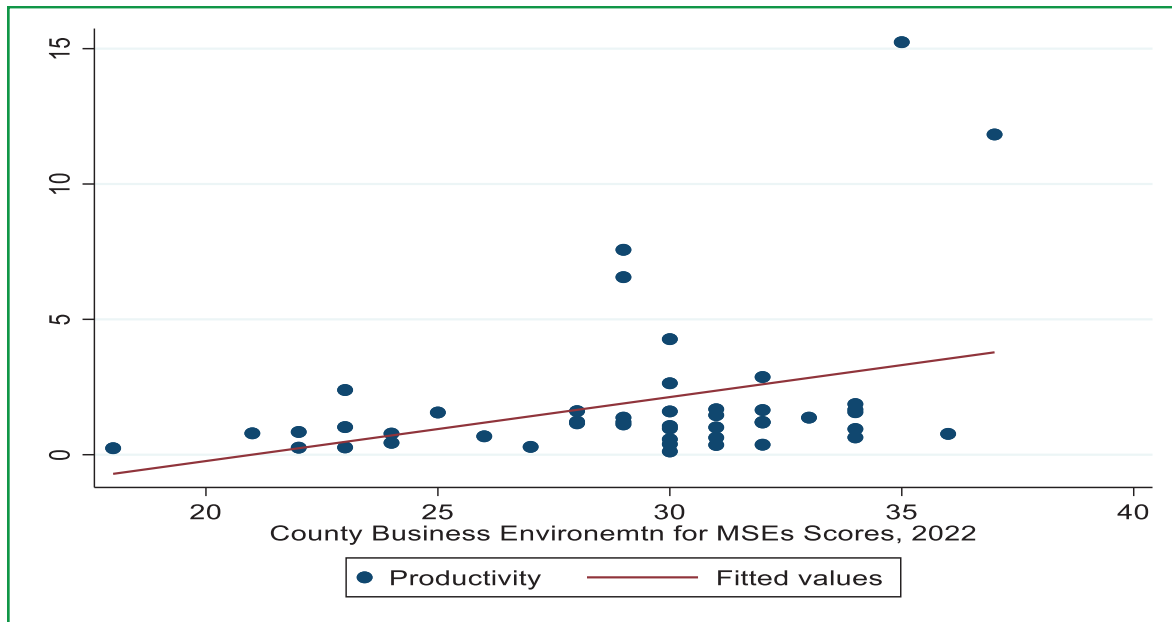


Data source: KIPPRA, 2022 (CBEM)

A positive correlation between the CBEM scores and labour productivity in the public service (Figure 10.35) indicates that the delivery of public service is linked to CBEM. This suggests higher scores in self-regulation, access to

markets, crime and public security, licensing and issuance of permits, access to government procurement opportunities, and more tend to be associated with higher labour productivity in public service.

Figure 10.35: Correlation of productivity in public service with county business environment for MSEs score



Data source: KIPPRA, 2022 (CBEM) and Author's computations

b) National values

National values play a pivotal role in enhancing productivity in the public service by shaping the organizational culture, guiding behaviour and fostering a sense of purpose and commitment among employees. Embracing and upholding national values within public institutions can create a conducive work environment that promotes efficiency, professionalism, and service excellence.

During the second MTP (2013-2017) the Government implemented the Public Service Transformation Strategy aimed at creating an efficient and effective public service with moral and ethical standards and a highly motivated human resource capacity for efficient public service delivery. The strategy aimed to address the global governance environment by enhancing responsible citizenship and value-based public service.

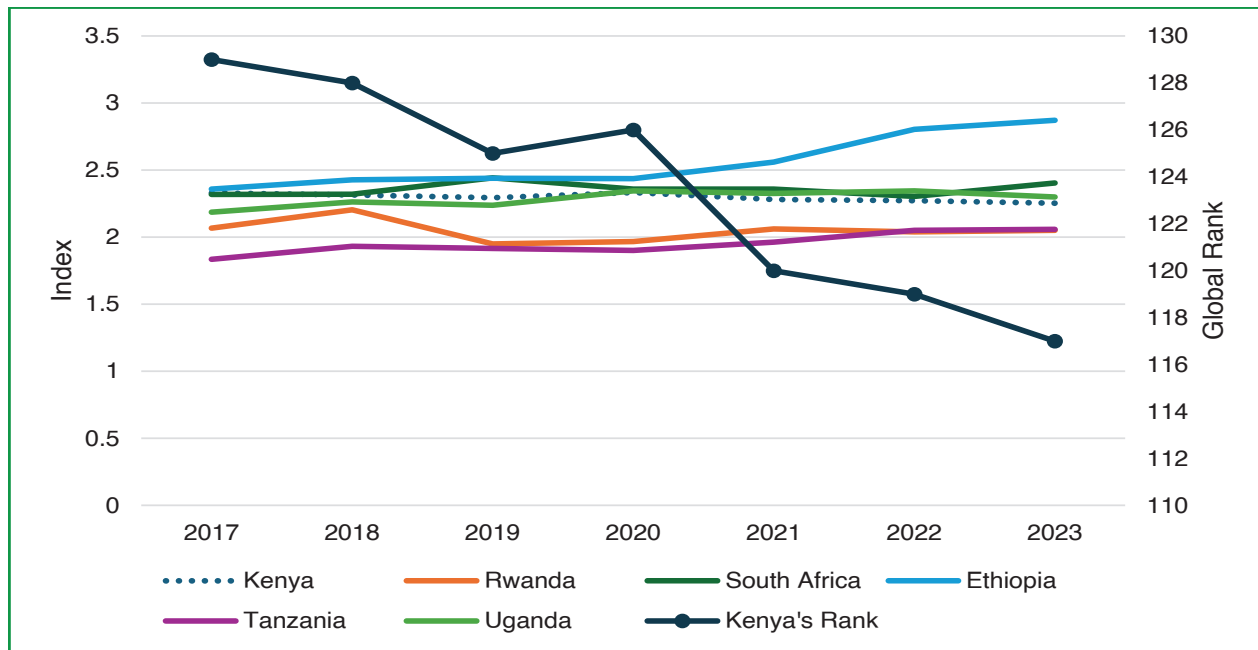
National level

The Global Peace Index (GPI) is used to measure the status of national values. It serves as a reflection of societal values by rating the level of peacefulness among countries,

indicating a society's commitment to harmony, non-violence and cooperation. A higher GPI score indicates a greater level of violence in a country. This index is not only a measure of peace but also an indicator of overall wellbeing and productivity, as peaceful societies tend to be more conducive to economic growth due to the stability.

Kenya's performance in the Global Peace Index from 2017 to 2023 has shown fluctuations, with slight improvements and deteriorations over the years, with a score of 2.25 in 2023 as compared to Rwanda's 2.05 and Tanzania's 2.05 (Figure 10.36). Notably, Kenya had consistently improved in the global ranking from 129 to 117 out of 163 countries in 2017 and 2023, respectively. Comparatively, Rwanda and Tanzania have demonstrated more consistent progress in peacefulness during this period, attributed to proactive policies and initiatives promoting social cohesion, conflict resolution mechanisms, and investments in peacebuilding efforts. These countries' focus on sustainable development, inclusive governance, and community engagement has likely contributed to their better performance in maintaining peace and stability.

Figure 10.36: The Global Peace Index (GPI) scores in selected African countries, 2017-2023



Data source: Global Peace Index (GPI) data sets 2017-2023

The county value systems programme is also aimed at infusing national values within counties by building harmony and cohesion in all the 47 counties. The programme aims to promote in-county unity by aligning the devolved units to the country’s guiding principles.

Diversity regarding ethnicity in public service is a barometer of values since it shows a dedication to justice, equity, and respect for every person, no matter what their background. A county’s commitment to accepting diversity and advancing a society in which all people have equal opportunities and representation is demonstrated by its efforts to promote diversity and inclusion in the public service workforce. The commitment to inclusivity shows a value system that ideals diversity, equity, and the recognition of the unique contributions that individuals from various backgrounds bring to the table.

In Kenya, only 13 counties have complied with the constitutional threshold on ethnic diversity and inclusivity in employment as per the audit report by the National Cohesion and

Integration Commission (NCIC) on the ethnic and diversity of county public service (2023). Nairobi, Mombasa, Nakuru, Busia, Embu, Lamu, Marsabit, Isiolo, Tharaka Nithi, Taita Taveta, Narok, Tana River, and Trans Nzoia are among these counties. By hiring more than 70 per cent of members of the majority ethnic group for county public service, 34 out of 47 counties violated the County Government Act (2012) section 65(1) (e) which requires that the county boards ensure that 30 per cent of entry-level vacancies are filled by candidates that are not from the dominant ethnic community in the county.

10.7 Key Messages and Recommendations

10.7.1 Key messages

1. The introduction of a devolved system of government in 2013 significantly transformed the country’s public service landscape by decentralizing functions to the county level, prompting adjustments in employment practices. Counties were

- compelled to enlarge their workforce to effectively manage devolved functions. Nevertheless, freezes on public service recruitment during 2014-2016 and 2018-2020, coupled with the disruptions caused by the COVID-19 pandemic, disrupted labour force dynamics. The varying experiences among counties highlight the critical role of strategic policies, infrastructure and human capital investments, and governance reforms in stimulating productivity and economic development. Counties with larger populations and urban centres face heightened demands for public services, leading to a greater contribution of public administration to Gross County Product (GCP).
2. There exists an increase in national productivity, but significant disparities exist across counties, indicating the importance of targeted interventions. Policies need to focus on factors such as access to technology, quality of personnel, infrastructure development, and governance practices to address these disparities. Additionally, improvements in human capital development, economic and fiscal management, transparency, and accountability are crucial for enhancing productivity in the public sector.
 3. Improving public service delivery requires a multifaceted approach involving capacity building, performance management contracting, technology integration, and the establishment of oversight bodies. These interventions aim to enhance the skills and competencies of public servants, promote accountability and transparency, and leverage technology for efficient service delivery. Despite progress, challenges such as low training programme uptake and implementation gaps in performance management remain. Addressing these challenges is crucial for achieving the government's goal of providing high-quality services to the public.
 4. While the country has demonstrated efficiency in revenue mobilization and equitable use of public resources, the quality of budgetary and financial management practices has declined. Despite steady growth in revenue collection, there have been shortfalls in meeting set targets, leading to potential budget constraints that affect the government's ability to fund essential services and projects efficiently. Allocated budgets for wages and salaries have consistently remained significantly below the stipulated ceiling of 35 per cent. There is also a notable gap between planned recurrent expenditure and actual allocated amounts to operations and maintenance. This leads to a low share of operational and maintenance spending in the total government budget. In addition, there is a low share of capital expenditure in the total government budget, which can have significant implications for infrastructure development and long-term investments. The accumulation of pending bills at both national and county levels indicates a concerning trend of growing financial obligations that have not been settled by the government, potentially impacting the quality and timeliness of services provided.
 5. Public satisfaction with public service delivery is influenced by creating a favourable environment for businesses, promoting national values, and upholding good governance practices. Improving the business environment, embracing diversity, and ensuring ethical standards in the public service are crucial for enhancing productivity and service delivery.

10.7.2 Policy recommendations

1. Establish a coordinated and strategic approach to capacity building and human resource management across all levels of government. This should involve the development of standardized training programmes tailored to the specific needs of the national and county governments, ensuring that public servants are equipped with the necessary skills and knowledge to deliver services effectively. In addition, efforts should be made to streamline recruitment processes, offer competitive salaries and benefits, and implement performance management systems to enhance accountability and performance.
2. Implement targeted interventions that focus on enhancing the quality of personnel by improving access to technology, investing in infrastructure development, and strengthening governance practices. In addition, there is a need to improve human capital development, enhance economic and fiscal management, and promote transparency and accountability. These measures can help create an enabling environment for enhanced productivity and efficiency in public service delivery.
3. The government needs to prioritize a comprehensive approach to enhance public service delivery. This includes expanding training programmes to improve the skills of public servants, streamlining performance management contracting to align with organizational goals, leveraging technology for digitization and automation, strengthening oversight bodies for monitoring and enforcement, and promoting e-participation for increased citizen engagement. Coordination among government, civil society, and stakeholders is essential for effective implementation, leading to improved accountability, transparency, and service quality.
4. Strengthen budgetary and financial management practices at both national and county levels in Kenya. This involves improving revenue collection strategies, enhancing budget execution and financial management practices, ensuring compliance with the 35 per cent ceiling for wages and salaries spending, increasing allocation to operations and maintenance, prioritizing capital expenditure, and addressing the accumulation of pending bills. These recommendations aim to enhance the quality of budgetary and financial management practices, ultimately improving public service productivity and service delivery in Kenya.
5. There is a need to focus on creating an enabling environment for businesses, promoting national values, and upholding good governance practices. This can be achieved by implementing reforms to simplify business registration processes, improving access to credit, strengthening property rights protection, and investing in infrastructure development. Additionally, efforts should be made to promote diversity and inclusivity in the public service, ensure ethical standards, and enhance conflict resolution mechanisms. These measures can help improve public satisfaction with service delivery and enhance productivity within the public sector.

LEVERAGING DIGITALIZATION TO INCREASE PRODUCTIVITY IN THE INFORMAL ECONOMY

The informal economy contributes over 83 per cent of total employment and only 3.2 per cent of value added to the economy. Establishments using digital tools such as mobile for business, mobile money platforms, computers, and websites in production, processing, and marketing are regarded as digitalized. Consequently, the high level of digitalization is associated with high labour productivity. Digitalization levels dependent on factors such as digital skills, digital literacy levels, cost of digital tools such as smartphones and computers, and digital infrastructure development such as Internet and electricity connectivity. To support digital business, the government is building digital hubs in all 290 constituencies to provide free WIFI that will enhance the uptake of online business. The government also plans to build 100,000 kilometres of optic fibre to accelerate Internet connectivity. Infrastructure development such as the Internet and electricity connection support the adoption of digital tools, which enhances productivity. The government is also supporting informal businesses to develop digital skills through programmes such as Ajira and Jitume. The use of digital tools offers opportunities for improving operational efficiency, expanding market reach, and accessing financial services. To enhance the digitalization of the informal sector, the government needs to expand its investment in digital skills and digital literacy development programmes that target the population in rural and underserved areas as well as underserved sectors such as the MSMEs including by expanding the scope of the universal service fund. Furthermore, the government needs to enhance the affordability, accessibility, and competitiveness of digital infrastructure by fast-tracking the implementation of its programmes on Internet connectivity, broadband fibre, and electricity connectivity in different parts of the country. Also ensuring the county aggregation industrial parks are adequately equipped with such infrastructure. Lastly, the government needs to accelerate the production of locally produced digital tools such as mobile phones to increase the supply of affordable and quality tools. It can do this by subsidizing costs and providing incentives for digital investments in the country.

11.1 Introduction

Leveraging digitalization to increase productivity in the informal economy holds immense potential for driving economic growth, improving livelihoods, and fostering inclusive development. Through digitalization, economic activities such as production, processing, and marketing are

transformed optimizing operations, enhancing customer experiences, and unlocking new opportunities for businesses. The informal economy accounted for approximately 85 per cent of all new jobs created in 2023 (KNBS 2024), which demonstrates the significant role played by informal businesses in providing livelihood opportunities for a large portion of the population. However, the sector is characterized

by low productivity as it accounts for 10.4 per cent of MSME gross value added and contributes 3.2 per cent to the whole economy, KNBS (2016). This is attributed to factors such as limited access to resources such as credit, low level of technology, small-scale operations, and low level of skills.

Integrating digital technologies into the operations of informal businesses can lead to substantial improvements in productivity. Digitalization can streamline business processes and automate tasks and workflows. For instance, adopting digital payment systems can facilitate quicker and more secure transactions, eliminating the reliance on cash and reducing the risk of financial losses. Additionally, digital record-keeping systems can improve data management and enable businesses to track sales, expenses, and inventory more accurately. Digital platforms are also transforming the informal sector by offering quality services and access to work opportunities. Job seekers can also register their profiles on digital platforms such as Ajira and Fundi (KEPSA, 2023). The sector is embracing digital platforms that are coming up and offering digital services. Consequently, big businesses and startups are creating an enabling environment and digital channels that enable informal business owners to gain access to data and services they typically would not access as an unregistered business. This provides a new path for collaboration between big and small informal businesses.

Digital transformation in the informal sector requires the joint efforts of the government, private sector, and enterprises (Raisanen and Tuovinen, 2020). The Government plays a role in promoting the digital processing of informal businesses and enabling digital transformation by raising digital transformation awareness, increasing labour-power competence, providing technical and financial support, and strengthening data communication infrastructure (Mukaila Ayanda and Sidikat Laraba, 2011). This creates an enabling environment for other actors to work and contribute to the

transformation. The private sector also plays a critical role in the digitalization of the informal sector. As demonstrated by the case of Safaricom, which is a giant tech company that has introduced a pricing model for 4G phones where one acquires the phone and pays for as low as Ksh 20 per day until one finishes the payments, and one owns the phone fully. This has enabled the informal sector players who are low-income earners to be able to access digital phones, which contribute to the digitalization of the sector.

The government is partnering with international organizations to mobilize resources to support digital transformation in the country. Recently, Kenya received grants to support the development of the digital economy in Kenya through a project funded by the World Bank in support of digitalization of the economy. Phase one runs from 2023-2028 and the second phase ends in 2030. The grant is supporting digital infrastructure and services, therefore, supporting Kenya's digital economy growth by increasing access to high-speed Internet for government, industries, and individuals. The other area to be supported is investing in digital government services and policies needed to transform government operations. Additionally, the grants aim to support and equip young Kenyans with digital skills and empower them to be able to compete in the international job markets. Most of the young people targeted are found in the informal sector. Therefore, the project will contribute to building digital skills for them, which is one of the challenges hindering transformation in the sector.

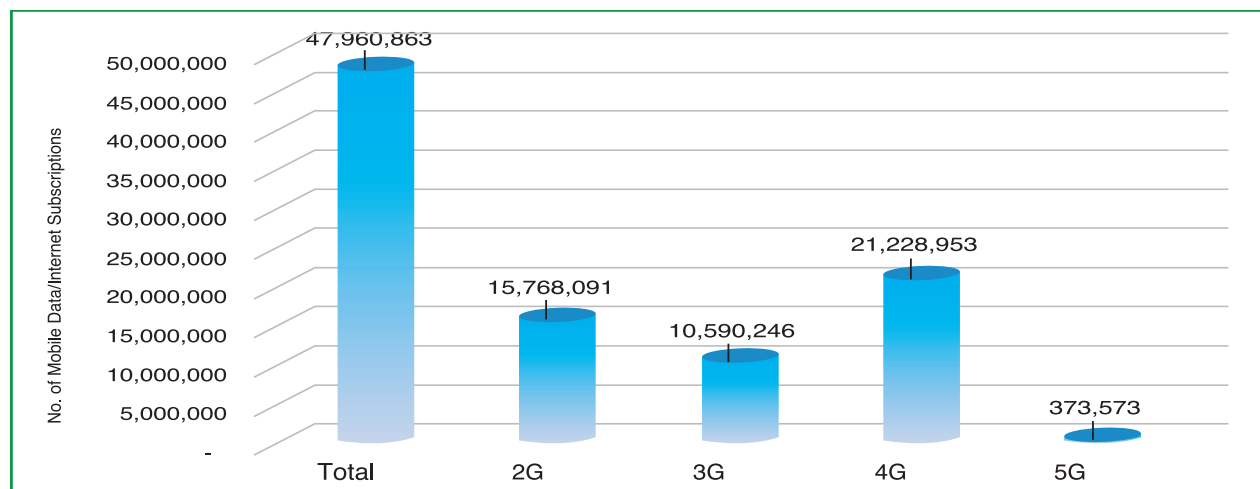
Vision 2030 supports digitalization as it outlines the use of technology and innovations to support different sectors to spur growth and industrialization including the informal sector. Furthermore, it stresses the importance of the development of the informal sector in attaining the goal of industrialization. The National ICT Policy, 2019, is the other framework supporting digitalization. It outlines the ICT development goals and creates a framework for their timely realization. The objective of the policy is among

other things to give every Kenyan access to reliable, affordable, high-speed broadband connectivity. It also aims to give the interests of the private sector top priority to foster entrepreneurship, innovation, investment, and growth. In addition, the policy aims to leverage ICT to promote sustainable development, accelerate human development, bridge the digital divide, and develop a knowledgeable society.

In Africa, Kenya is ranked 5th behind South Africa, Morocco, Algeria, and Egypt by the Huawei Global Connectivity Index in terms of its

preparedness. However, Kenya's connectivity is concentrated in urban areas with rural areas being disadvantaged due to low investment in digital infrastructure, affordability of devices and data bundles, digital illiteracy, and poor access to spectrum. Currently, Kenya has six (6) submarine fibre cables connecting it to the world. Peace cable, DARE1 (Djibouti Africa Regional Express 1), TEAMS (The East African Marine System), EASSy (East African Submarine Cable System) and Lion2. In 2023, total mobile Internet subscriptions in the country was 47.96 million out of which 67.1 per cent were for mobile broadband (Figure 11.1).

Figure 11:1 Internet connectivity in Kenya, 2023



Data source: Communication Authority (CA)

This chapter explores the role of digitalization in increasing productivity in the informal economy. It looks at the characteristics of the firms in the informal sector and identifies the digital tools, digital infrastructure, digital skills; digital services; government policy, and support for digitalization. The chapter attempts to examine empirically the implications of digitalization on labour productivity and provides policy recommendations.

11.2 Overview of Informal Economy

Understanding the informal economy is crucial as it gives a glimpse of its characteristics and

operations. This section gives an overview of the informal economy including the firms and their activities and labour market characteristics.

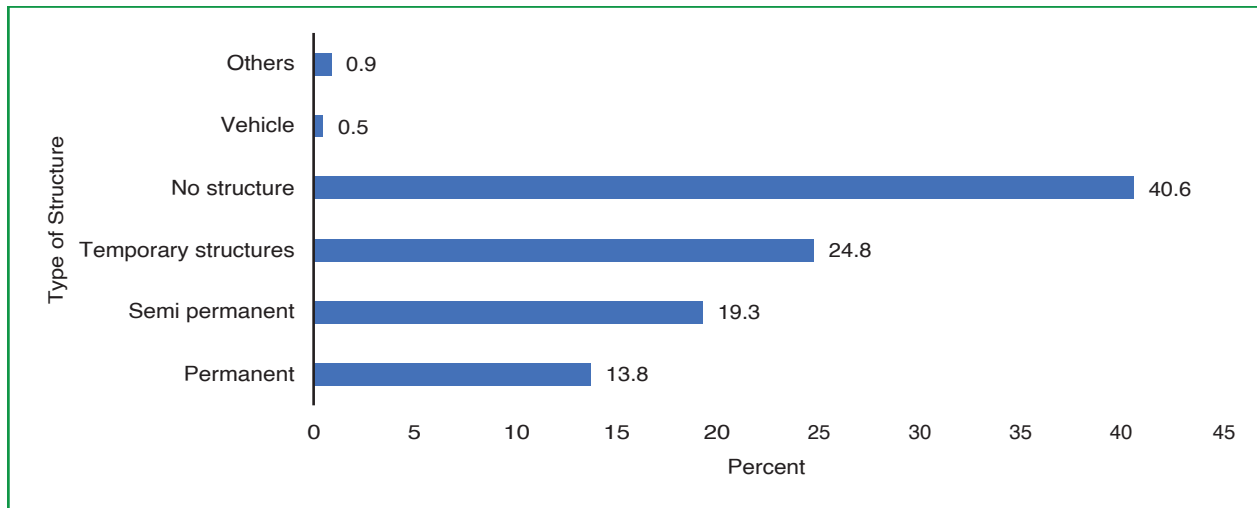
(a) Registration status of firms

The informal sector is characterized by small firms, which are generally unregistered and unregulated by the government. These enterprises are mainly owned by families on small-scale, rely on indigenous resources such as readily available resources, labour intensive technology, and find themselves in a competitive market. There are over 5.9 million unlicensed establishments countrywide,

an indication of a growing informal economy (KNBS, 2016). The largest proportion of the informal establishments, 40.6 per cent, operate in open places, 24.8 in temporary structures, and 13.8 per cent in permanent structures as shown in Figure 11.2 (KNBS, 2016). This type

of locational site has significant implications on the approach to be adopted in the provision of essential infrastructure to facilitate digitization of the informal firms. The location of enterprises within the sector is influenced by the nature of the economic activities they engage in.

Figure 11.2: Type of informal establishments operating structure, 2016



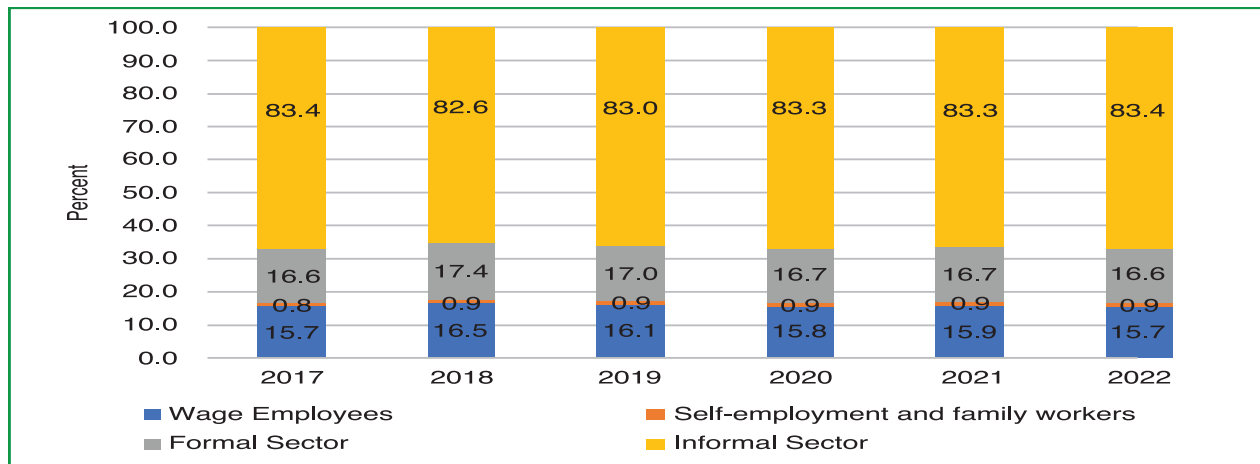
Data source: MSME, 2016

Establishments in the informal sector use various forms of ICT such as mobile phones, tablets, computers, cameras, fax, cameras, radios, television sets, photocopiers, and printers. Computers are mainly used for scanning (0.4%), printing (16.0 per cent), data storage (19.0 %), data processing (2.1%) and Internet services (60.0%). The use of these digital tools and services are used at different levels across sectors as discussed in (Figure 11.8). The low broadband Internet connection across counties and high connection charges may be attributed to low adoption of these technologies CBEM, (2022).

b) Informal sector labour participation

The sector remains the main source of employment in Kenya (Figure 11.3) contributing about 83.4 per cent of the employed population. The employment rate in this sector rose by 4.6 per cent, which translated to 16 million jobs in 2022 (KNBS 2023). Of these, 58.6 per cent were own workers while 16.5 were paid employees. Terms of engagement for those employed include those regularly paid, casuals, family workers, and apprentices. Those engaged in this category include second-hand clothes dealers, hawkers, dressmakers, housekeepers, security guards, and carpenters. Their skill profile, years of schooling, and experience influence their earnings and level of income. Some of the challenges they face are low levels of skills and constraints from getting credit facilities due to informality, therefore, affecting their productivity.

Figure 11.3: Employment contribution by sector (2017-2022) (%)



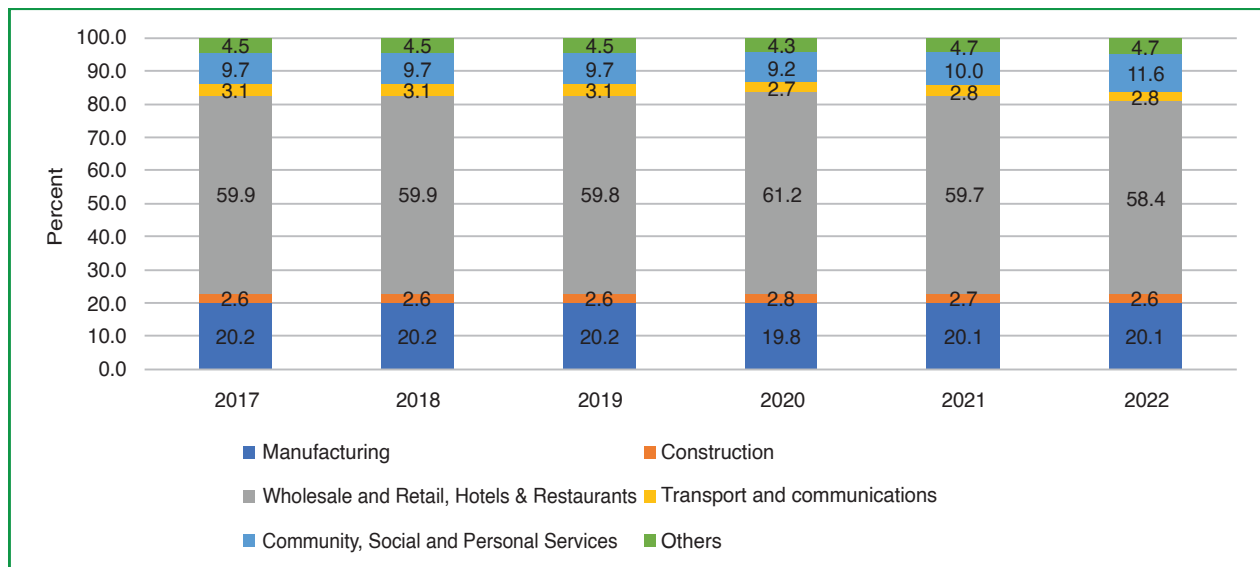
Data source: KNBS Economic Survey (2017- 2022)

c) Informal activities across sectors

Activities within the informal sector are concentrated around manufacturing (20%), wholesale and retail (58%), transport and communication (3.0%), construction (3.0%), community (12%), social and personal services

(19%) (Figure 11.4) A majority of the informal enterprises are in the service sector operating in wholesale and retail trade, motorcycles, and repair of motor vehicles. Many businesses within the accommodation and food service are small restaurants selling food and beverages.

Figure 11.4: Persons engaged in the informal sector by activity, 2017-2022



Data source: KNBS Economic Report (2022, 2012, and 2013)

d) Innovation in the informal sector

Informal firms engage in product, process, and marketing innovations. Innovation levels in the informal sector are low with less than 10 per cent of enterprises having reported that they

have introduced new marketing methods, new products, or new production techniques. Most of the innovative firms engaged in product innovation, with 7.0 per cent in the informal and 15 per cent in the formal sector.

Table 11.1: Distribution of innovative firms in the informal and formal sectors

Year	Type of Innovations			Total		
	Product	Process	Marketing	Innovative Firms	Non-innovative Firms	Total Firms
Informal	1,3144 (7)	487 (3)	697 (4)	2,498 (14)	15,397 (86)	17,895 (100)
Formal	925 (15)	437 (7)	601 (10)	1,963 (31)	4,306 (69)	6,269 (100)

Data source: KNBS MSME Survey, 2016

e) Education levels for participants in the informal market

Education influences the level of innovation within the sector. Firms whose employees/owner(s) have high education levels tend to be more innovative. The informal sector is known to have low educational levels among its players. Those with primary education (39.7%), secondary education (19.0%), certificate (3.7%), diploma (3.9%), degree (1.2%), and none (31.4%). Comparing education levels and innovation, the analysis presented in Table 11.2

shows that a higher percentage of innovative firms have owners whose highest level of education is secondary education - product innovation (41%), process innovation (38%), and marketing innovation (41%).

Micro and medium enterprises are the least adopters of innovation compared to small enterprises. An inspection of the innovation rigidity levels reveals that informal micro and medium enterprises are more rigid to innovation than small informal enterprises.

Table 11.2: Owners' highest level of education achieved (%)

	Product Innovation	Process Innovation	Marketing Innovation
None	1	1	2
Primary	23	25	22
Secondary	41	38	41
Vocational, Polytechnic or College	24	24	22
University	10	10	11
Total	100	100	100

Data source: KNBS MSME Survey, 2016

Training for the informal sector is crucial in sharpening or enabling them to acquire new skills. In assessing the extent to which MSEs participated, in training and in which areas, 50.66 per cent indicated that they had undertaken training in the last three years in

financial management (25.6%), technical skills (24.92%), market access (15.53%), climate change (2.92%), post-harvest management (5.07%), business advisory (17.23%), and technical skills (8.61%), (CBEM, 2022). Additionally, during the COVID-19 pandemic,

about 6.4 per cent underwent training to understand ways to innovate to survive during the pandemic.

11.3 Government Intervention in the Digital Economy

The Digital Economy Blueprint (2019) is a framework that seeks to drive the country towards the realization of a successful and sustainable digital economy. It is guided by pillars that drive digital economy growth including digital government, digital business, infrastructure, innovation-driven, and digital skills. These pillars are discussed in this section to understand how the government is supporting the informal sector for digital transformation.

a) Digital business

The pillar aims to develop a robust digital market characterized by advanced consumer protection, fair competition, resilient data infrastructure, increased quality of financial inclusion, and greater regional integration. It has three focus areas namely: digital financial services, digital content, and digital trade. Integrating ICT in business processes has proven to be a critical solution to survival of enterprises during uncertainties. For this to happen, businesses need to remain interconnected among themselves, with their customers, and with the government.

The government plans to build ICT hubs in all wards in the 290 constituencies. The project is at the inception stage with a pilot being done in Limuru. The objective of the project is to support entrepreneurs access free Wi-Fi. It will also enhance awareness and uptake of online platforms for employment and business opportunities. This will help accelerate the adoption of digital technologies providing an avenue for accessing critical business information and training resources among the youths and women in the informal economy. In the distribution of informal employment within the informal sector, 53.1 per cent of women are owners and operators of informal businesses in

Kenya (ISSOS, 2020). Additionally, the youths (below 18-34 years) who are owners of the businesses are at 53.1 per cent. This shows the crucial role the two groups play in ensuring the development and growth of the sector.

The government is also supporting women through a programme referred to as 'AjiraForShe' Apprenticeship Programme that is being implemented by eMobilis, a partner for Ajira Digital. Young women are being trained to acquire digital skills that prepare them for the labour market. The programme objective is to build opportunities for young women in Kenya in the digital economy by enabling them to take up digitally enabled work opportunities and engage in digital entrepreneurship space. The women-owned businesses tend to be smaller in scale and struggle since they have limited access to financial support. Therefore, engaging in such training programmes, enable them to be well-connected and linked to such crucial opportunities. The participants can build their skills in financial record keeping, purchasing, and business management. These skills are crucial in running their businesses and allowing women to take their space thus reducing the digital divide among women who have historically been imbalanced in the digital space.

Online platforms and mobile applications can offer entrepreneurs in the informal economy valuable insights into market trends, pricing strategies, and customer preferences. Digital technologies can enable owners of informal enterprises and their workers not only to earn but also to gain access to improved inputs and larger markets, obtain adequate capital and credit, and reduce transaction risk in the day-to-day running of their activities (Aker 2008; Aker and Mbithi 2010; Choi et al. 2020; Ongori and Migiro 2010). Some of these online platforms include MESH, which is a platform for informal businesses and has more than 150,000 members. It has a programme that equips young entrepreneurs with digital, and financial skills and market participation enabling them to build resilient businesses positioned

for growth. It allows young people access to tailored business tools, peer networks, and mentorship, which allows them to participate in formal business. Uhuru Market is another online platform named after the market that is allowing the informal sector to sell their wares online. This initiative saves time for buyers and it is flexible.

b) Digital infrastructure

The goal of the pillar is to achieve affordable, accessible, reliable infrastructure for an inclusive digital economy. Infrastructure is identified as an enabler of the digital economy. The focus areas under the infrastructure pillar are broadband, infrastructure, connectivity that is reliable, affordable, and secure, management of digital assets; payment systems; and data centres. Internet connectivity is not universal in different parts of the country, which slows down digitalization.

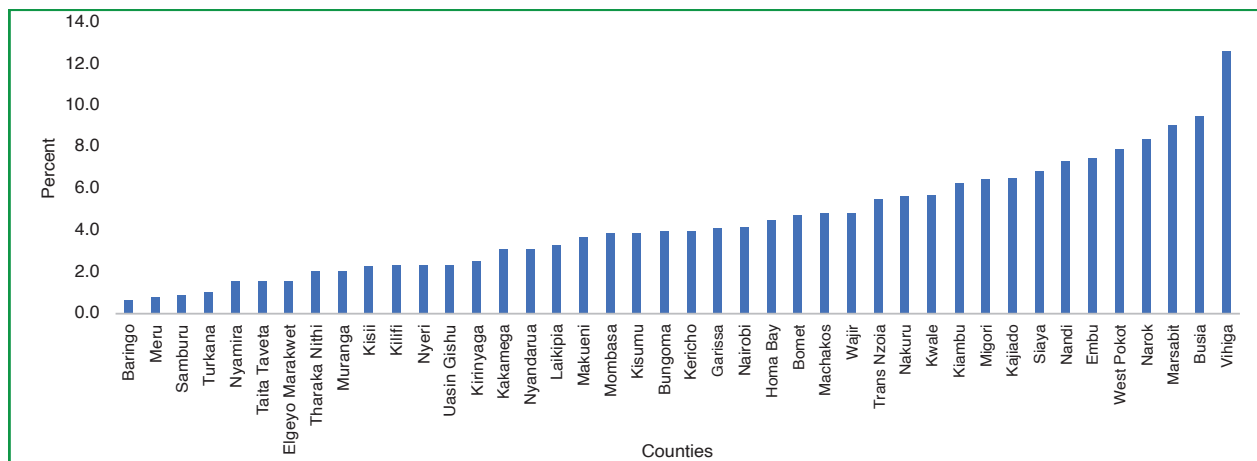
The Government under the Bottom-up Economic Transformation Agenda is targeting to build the Digital Superhighway. This is part of the government’s efforts to strengthen the digital economy and ensure inclusivity. The objective of the programme is to strengthen the ICT backbone by increasing the fibre network across the country, reducing the cost of Internet connectivity, enhancing e- government services,

and automating VAT systems to enhance revenue. This will involve the installation of 100, 000km of fibre cable which is expected to create 25,000 Wi-Fi hotspots available to the public. It will target 1450 wards and will be distributed in market areas. Currently, within Nairobi County, there are 17 hotspots located in City Market and Muthurwa. The informal sector will benefit from such initiatives as they are distributed across the country.

Internet connectivity is critical for informal businesses as it allows access to markets. Connectivity across counties indicates Vihiga leading at 12.6 per cent and Baringo lowest at 0.6 per cent (Figure 11.5). The challenges faced in Internet connectivity are attributed to low broadband Internet connection to the worksites across counties, a poor network connection to support Internet (9.5%), high connectivity charges (17.28%), lack of Internet infrastructure (17.39%), lack of awareness and importance of Internet (10.10%) (CBEM, 2022). The average score for the connection was 3.94 (CBEM, 2022). This implies only three (3) in every 10 MSMEs indicated to be using phone and modem Internet.

The informal sector still lags in terms of broadband connectivity, poor Internet penetration rate, and data centres for data processing, which then affects the rate of technology adoption.

Figure 11.5: Internet connectivity across counties informal sector (%), 2022

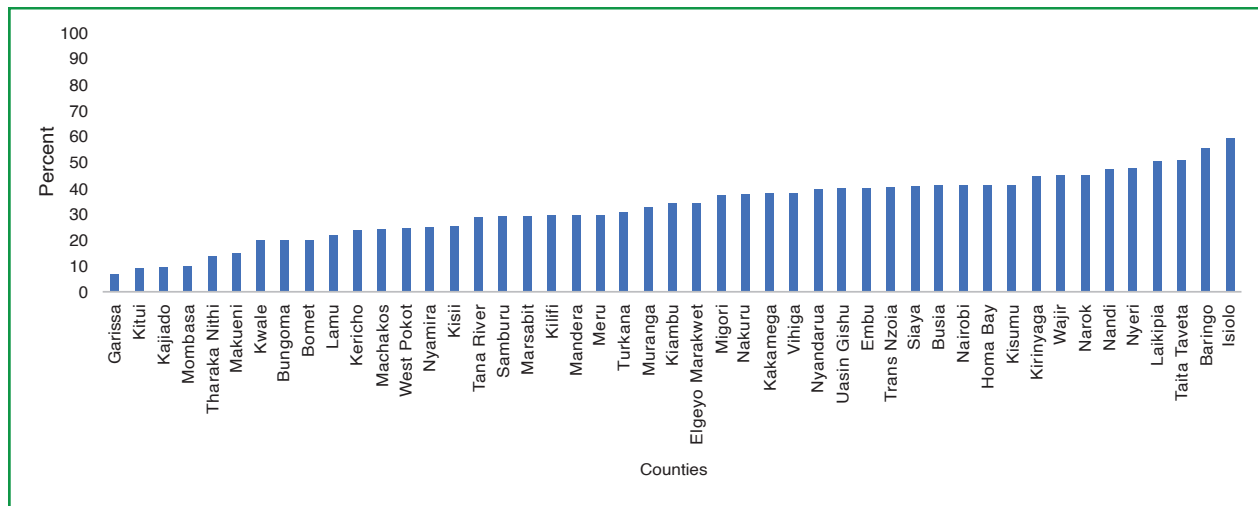


Data source: CBEM (2022)

Access to electricity is important for digitalization in the informal sector because of its foundational role in enabling the adoption and utilization of digital technologies and services. Assessment of connection in the informal establishment's worksites across counties shows Isiolo and Baringo counties at 59.2 and 55.6 per cent, respectively (CBEM, 2022). Garissa County had the lowest proportion of electricity

connection at 6.6 per cent (Figure 11.6). The proportion of establishments accessing electricity was based on the average electricity bill, procedures undertaken to access electricity within a worksite, time taken to be connected, the official cost of connecting electricity to the worksite, and the number of power outages experienced in a month.

Figure 11.6: Electricity connection across counties informal sector (%), 2022



Data source: CBEM (2022)

c) Digital skills

The goal is to develop a digitally skilled workforce that is grounded on sound ethical practices and socio-cultural values. Digital skill use at work is essential, and includes computer use skills and specialist ICT skills, such as those of programmers (OECD, 2019). Firms may also need to reorganize their business models around intangible assets to seize their productivity potential (Haskel and Westlake, 2019; Brynjolfsson et al., 2007). Skills and training are essential in boosting the use of digital tools within the informal sector. Establishments within the informal sector reported to have received in the last six (6) years training on management, technical advice, marketing, information and communication technology (ICT), consultancy, business, and finance.

The government launched the Ajira programme in 2018, which is an initiative that aims at boosting employment among the youth through online digital jobs. Participants are trained in online marketing, data entry, and content creation which empowers them, and can start earning a living by accessing Internet through mobile or computer devices. This initiative can help bridge the digital divide gap as the sector suffers from low digital literacy and inadequate digital skills leading to a low level of digitalization adoption. Lack of requisite skills, therefore, makes it difficult to use digital tools.

The Kenya Institute of Curriculum Development approved the teaching of coding in schools in 2022 and the goal was to train 42,000 teachers to deliver the lessons. Additionally, mainstreaming of KICD approved lessons seeks to equip learners with essential skills

to thrive in a digital economy. Impacting a generation with such skills will help the country achieve digital economic growth. In addition, Konza Technopolis Development Authority is collaborating with Technical Vocational Education and Training (TVETs) institutions to implement Jitume, an initiative that aims at providing the youth with access to Digital skills, digital services, and opportunities to enable them to take advantage of technology for job creation.

Most activities within informal businesses require basic digital skills. This level of skills provides a foundation for ICT technologies. Participants learn to operate the keyboards, download applications, and create documents, completing basic online transactions such as sending and receiving emails, making Internet searches, and filing forms. Further training will help them enhance their skills to intermediate and advanced levels increasing work efficiency.

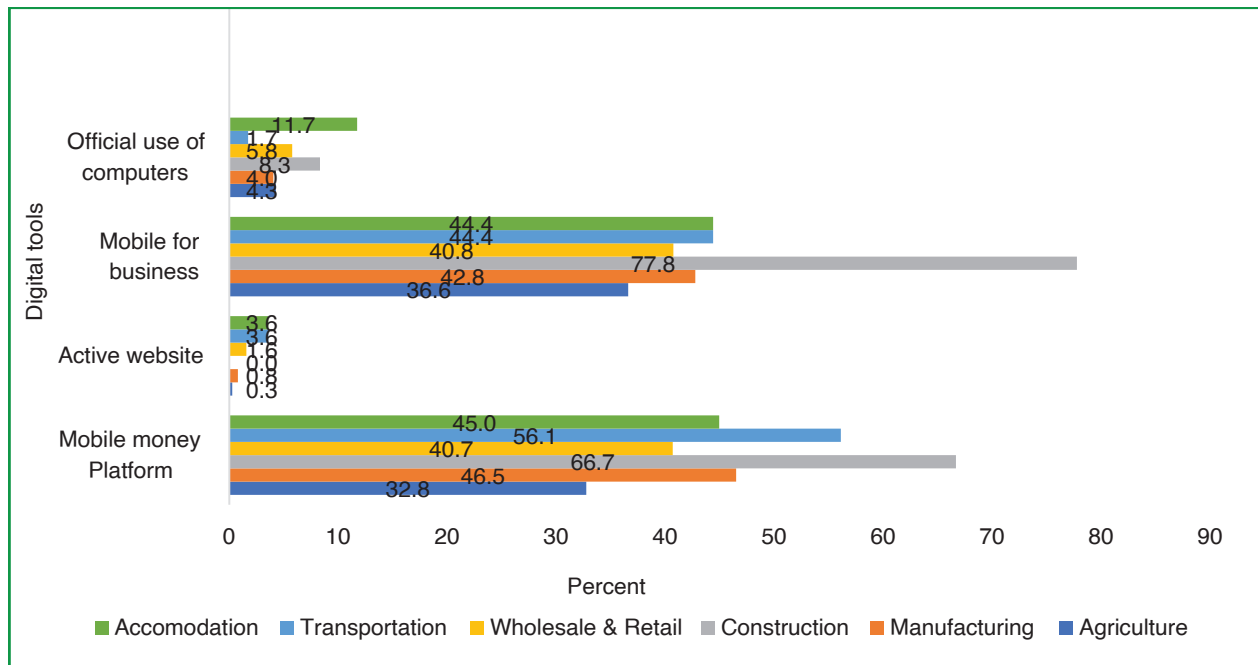
11.4 Digitalization in the Informal Sector

Digital technologies play a significant role in increasing productivity in the informal sector. Diffusion of technologies is embraced differently in the informal sector, which is influenced by factors such as essential infrastructure (electricity, Internet, and fibre connectivity); communication channels used

to share information about digitalization; and social systems that the firms find themselves in. The informal sector's level of digitization is still low and some of the establishments that are digitalized use digital tools such as computers and mobile for money and online platforms such as mobile money, computers, websites, and business phones.

Although the level of penetration of digital technologies is low, some sectors are already utilizing technology to increase productivity. The use of mobile money was high in the construction sector at 66.7 per cent and lowest in agriculture at 32.8 per cent. Use of mobile phones for business was high in construction at 77.8 per cent and agriculture at 36.6 per cent (Figure 11.7). Official use of computers was high in accommodation at 11.7 per cent and active website ownership was high in accommodation at 3.6 per cent and low in the transportation sector at 2.0 per cent. Most informal sector enterprises and operators such as second-hand clothes dealers, hawkers, dressmakers, housekeepers, security, and carpenters use simple technologies and are yet to fully embrace digitalization except for the use of mobile phones. Access to computer-based technologies remains low, which is attributed to the low level of digital skills among the informal sectors.

Figure 11.7: Use of digital tools by sector, 2016



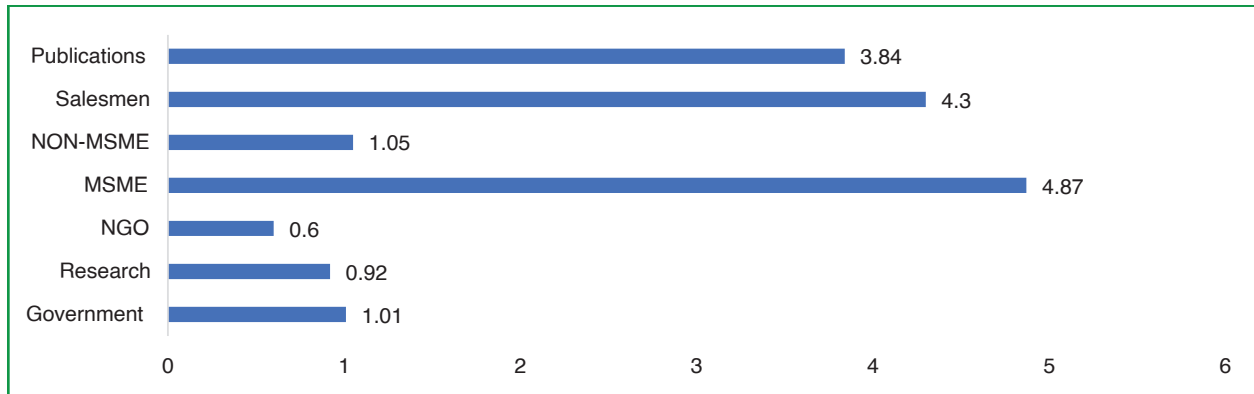
Data source: MSME Survey 2016

The Ajira Digital Programme is a digital platform partnering with other digital applications to register skilled workers. One such application is Fundis, which is a mobile application platform that enables businesses and homes to find and hire professionals for maintenance, repairs, large projects, and other construction services. (KEPSA,2023). Once those talented and have certifications in their fields are registered, they undergo theoretical, practical, and soft skills assessment before onboarding. This initiative has helped transform the sector by eliminating high risks of poor quality and projects left incomplete. Other onboarded professions in the platform include plumbing, masonry, carpentry, glasswork, welding, painting, tiling, and electricians. The platform has already onboarded 300 fundis from 11 areas (Nakuru, Mombasa, Coastal regions, Machakos, Eldoret,

Nyeri, Nairobi, and enviros) and 83 fundis have earned digitized wages. Other professionals such as second-hand clothes dealers, dressmakers, and housekeepers advertise their products and services through online platforms such as Facebook, Instagram, and Tiktok. That is why it is essential to ensure such businesses are connected to affordable infrastructure such as electricity and the Internet.

Additionally, technological advice received by establishments is important in influencing the adoption of digitalization. Figure 11.8 shows the percentage distribution of the establishments by source of technological advice applied. About 83.42 per cent of the establishments did not indicate receiving any technological advice. For those who received advice, the main sources were MSME, salesmen, and publications.

Figure 11.8: Source of technological advice (%), 2016



Data source: KNBS (2016)

The digital revolution has spurred the development of a small but rapidly growing digital sector, with innovative entrepreneurs launching new digitally enabled services while creating 21st-century jobs. More significantly, digital technologies are gradually driving productivity gains in traditional industries through value addition in business processes (Kenya Economy Blueprint, 2019). Online marketplaces and e-commerce platforms are being enabled in the informal sector by the use of computers, mobile phone use, and Internet access. Online shopping companies such as Jumia, Kilimall, and other platforms do business through websites, Facebook, Instagram, and TikTok. Although these are formal enterprises, informal businesses can learn from them. Traders can reach online customers through online shopping platforms and deliver their purchased products to them. This in turn generates increased opportunities for people in the informal sector as they join the distribution sector and benefit from door-to-door delivery services (World Bank, 2019). Overall, digitalization in this ecosystem is improving market transparency, enhancing enterprise productivity, and enabling efficient logistics.

The onset of lockdown and restrictions on movements as a result of the COVID-19 pandemic impacted the informal sector as many people were laid off. The supply chains were disrupted thus affecting the livelihood of

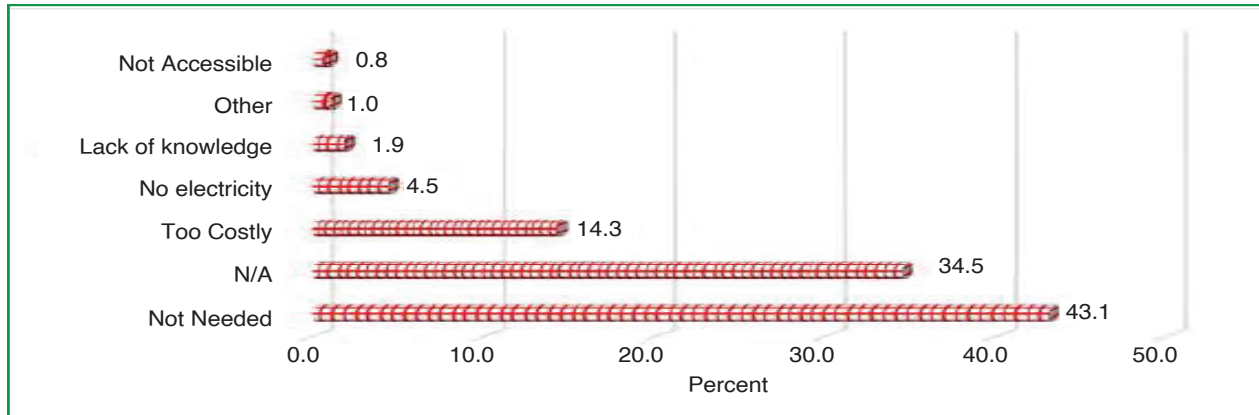
workers within the informal sector. To adapt to these changes and build resilience, many businesses had to leverage digitalization and do business online. This enabled the informal sector to access new markets by integrating digital tools and developing digital marketplaces for informal businesses and traders to continue to sell their goods and services and connect them with existing and new clients (UNDP, 2023), therefore, increasing the level of adoption within the informal sector.

The high cost of digital tools such as basic phones and mobile data plans are often out of their reach, which limits the workforce in the informal economy's ability to adopt new technology. Therefore, the informal sector workers end up sticking to manual processes instead of incorporating technology into their operations. Figure 11.9 gives further reasons why the informal sector was not able to adopt digital tools in their business. The main contributing factors for low technology adoption were cost, lack of electricity and some informal sector entities indicated they did not require to use ICT in their businesses; and the latter could apply to open-air businesses. Further, Figure 11.10 shows reasons firms are not using ICT across sectors. For the wholesale and retail sector which forms the majority of the informal sector, they gave the following reasons; lack of knowledge (78.13%), not needed (82.22%), no electricity (71.23%), not accessible (81.40%),

too costly (83.06%) and their main reason for not using is the cost, which is a factor hindering adoption to digitalization. In agriculture,

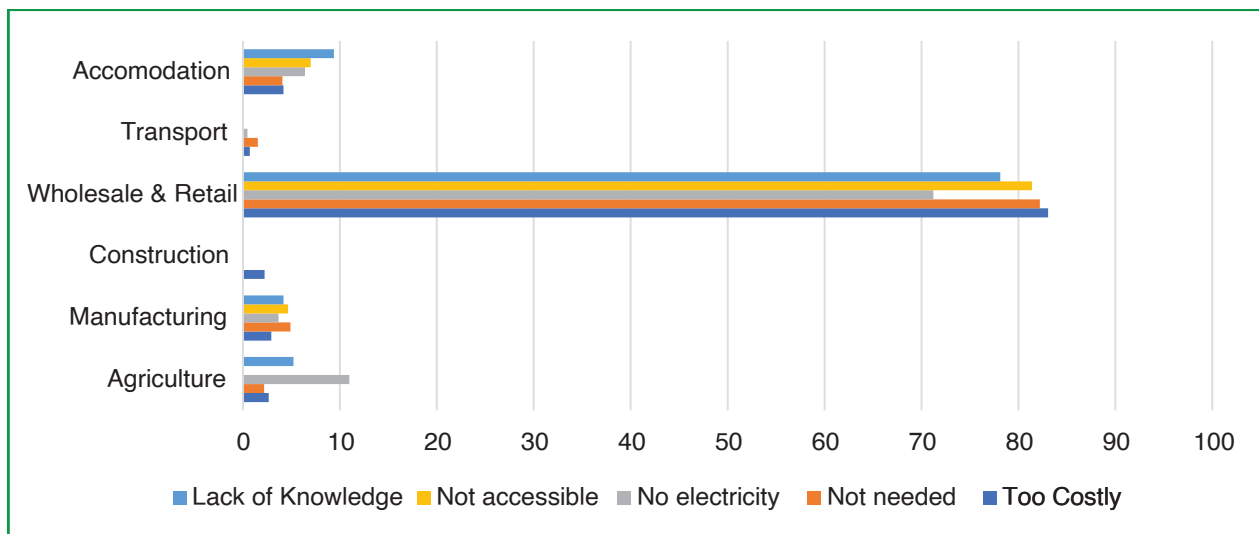
electricity is the main reason for not using ICT. Electricity is an enabler of digitalization, and it is necessary to drive adoption in the sector.

Figure 11.9: Main reason the business does not use ICT (%), 2016



Data source: KNBS 2016- MSME 2016 Basic Report Survey

Figure 11.10: Establishments' reasons for not using ICT (%), 2016



Data source: KNBS 2016 (MSME Survey)

Furthermore, the fear of data breaches can make small businesses reluctant to embrace digital technologies, as they may see them as a risk to their operations and reputation. Small businesses in the informal sector may not have the resources or expertise to protect their

data from cyber threats, which can make them vulnerable to hacking, data breaches, and other forms of cybercrime. This can be particularly challenging in a context where there is limited regulation and enforcement of data protection laws.

11.5 Digitalization and Labour Productivity

Digitization in the informal economy has an impact on labour productivity through production, marketing, and operations. In production, it can streamline processes, and automate tasks leading to increased output. It can also enable market access through online platforms such as e-commerce, which leads to increased sales. In marketing, businesses can use digital platforms to showcase their goods and services, therefore, increasing their visibility, increased sales leading to productivity. Operations within informal businesses are improved and better decision-making achieved as digital tools can be used to collect data and analyse market trends. The identified digital tools being used include mobile money payments, the use of official computers, mobile for business, and websites. Use of these tools within the informal sector include:

- o *Mobile phone* - applicable in marketing, sales, and customer service, financial communication, advertising, financial transactions;
- o *Mobile money platform* - this is used to make digital transactions, payments, and financial management by business easier and efficient;
- o *Active website* - this is enabled by electricity and the Internet and is widely used in marketing and sales. Provides information on products and services as it serves as an online storefront facilitating sales; and

- o *Computer for Business* - used for a variety of functions such as data analysis, design, financial management, and administrative tasks.

11.5.1 Productivity levels in the informal sector

Most of the activities in this sector suffer from low productivity. This means that workers get low value for the input invested into their businesses. Assessment of the average labour productivity across sectors shows services leading at Ksh 11,953.5, agriculture at Ksh 10,503.7, and industry at Ksh 8,917.4. Further, when measured in terms of average labour productivity among the MSEs, Micro was at Ksh 6095.4, Small at Ksh 11490.8, and Medium at Ksh 11818.1. This shows that medium-sized enterprises have more labour productivity compared to micro and small enterprises.

Income earnings in the enterprises influence the wages being paid to their employees. Consequently, the monthly wage paid by informal enterprises is below the recommended minimum wage. Thus, most skilled, and non-skilled informal workers earn below the 2016 statutory minimum wage rate for a labourer of Ksh17,200.3, Ksh 15,979.5 and Ksh 13,592.7 for cities, former municipalities, and other cities, respectively (KNBS, 2016). Additionally, Table 11.3 shows workers within the informal sector earn below minimum wage, which was 82 per cent compared to their counterparts in the formal sector at 65 per cent (KNBS 2016). However, in 2022, there has been a gradual increase such that cities wages were Ksh 23868, Ksh 22174, and Ksh 18862 for former municipalities and other cities, respectively.

Table 11.3: Minimum wage earning within formal and informal sector rates (2016)

Sector	Formal	Informal
Below minimum wage	65	82
Above minimum wage	35	18

The location of the businesses influences the level of productivity such that those in market stalls average labour productivity was Ksh 15,880, open markets Ksh 13054 and for Jua kali sheds at Ksh 4929. This shows that those in stalls were more productive than those in

open markets and Jua kali sheds which are temporary structures. In terms of those doing innovation, those doing product innovation had slightly higher labour productivity at Ksh 11,771 compared to those doing process innovation at Ksh 11,768.

Box 11.1 Innovation Diffusion Theory

In understanding digitalization within the informal economy, the Diffusion of *Innovations* Theory framework by E.M Rogers 1962 has been adopted. This is one of the most popular frameworks which elaborates how new ideas are adopted in a society. Rogers describes innovation as an idea or project that is perceived as new by an individual adopter or other units of adoption. Although an idea may have been invented a long time ago, those who have not adopted still perceive it as new. Rogers argues that the uptake of these ideas (technology) is determined by elements such as communication channels used to pass information, the prevailing social system, technology, the individual characteristics of the potential adopters and finally influenced by innovation itself. In the informal sector, some technologies adopted include mobile money, mobile for business, websites, and computers.

Communication Channels - Communication is a process by which participants share information. This information sharing occurs between channels and sources. The source of the information may be an individual or an institution and the channel is the means that the message goes through to reach the receiver. Diffusion occurs when we have innovation, units of adoption, two individuals, and a communication channel. The communication system is classified into mass media and interpersonal channels. Mass media spreads information at a faster rate than interpersonal channels. These channels may include TV, radio, newspapers, and others. In the context of the informal sector in Kenya, information on digitalization is crucial as it creates awareness of the need to adopt digitalization and incorporate it in the business operations. The informal sector received information on technology through publications (3.8%), salesman (4.3%), non-MSME (1.1%), MSME (4.9%), NGO (0.6%), research (0.9%), and government (1.0%).

The social system is defined as a set of units that are interrelated and have a defined structure. Since the diffusion of innovations takes place in the social system, individuals within the system who are the adopters need to embrace the change. Rogers claims that the nature of the system affects an individual's innovativeness. In the context of the informal sector, the gender of the owner, the age of the business, and the sectors are factors making up the social system. These factors influence the adoption of digitalization within the informal sector.

Box 11.2: Factors influencing labour productivity

In determining how digitalization affects productivity, an estimation was done using the MSME 2016 survey data. Labour productivity, which is the dependent variable was measured in terms of output per work. Labour productivity (log) is measured by the total sales of the firm in a typical month during the last fiscal year divided by the number of workers at the establishment. The independent variables used to determine how they influence labour productivity included: Digi-levels (not-digitalized, low-digitalized, moderately digitalized, digitalized, highly digitalized), business size-category (micro, small, medium), age of business (young=<=5, Medium=>5<20, old=>20) connected to electricity, youth employees and broad sectors.

Table 11.4: Analysis of effects of digitalization on labour productivity

Dependent: log labour productivity	Coefficient
Variables	
Digi level	
Low digitalized	0.03
moderately digitalized	0.06
Digitized	-0.09
Highly digitized	1.58***
Business size category	
Small	-0.96
Medium	-2.58
Age business category	
Medium(>5<20years)	0.24***
Old business (>20 years)	-0.23
Connected2electricity	0.25***

Data source: Author's computation based on the (KNBS)MSME survey, 2016.

Notes: *** represents significance level at 1.0 per cent; ** significance level at 5.0 per cent and * significance level at 10 per cent

11.5.2 Technological attributes in the informal sector

The intensity of digital technologies has proven to be a good indicator on access of digital technologies by workers which then reflects on diffusion of digitalization in the informal enterprises. This affects labour productivity of enterprises in an area (Danquah & Owusu, 2012). Digitization levels for businesses in the informal sector were categorised depending on the type of technologies that are used. They

include official use of computers, mobile money platforms, mobile for business and whether they have active websites. Categorization was done to understand those who are using digital tools. Those that do not use these technologies are categorized as “not digitized”, those using one of the technologies as “low digitization”, using 2 are “moderately digitized”, with 3 technologies are “digitized” and those using all the 4 are “highly digitized”. Analysis show use of the 4 technologies which are categorized as highly digitalized as significant. An increase in a unit

level of digitalization leads to an increase in firm productivity by 1.57 units. This is an indication that adoption of digital technologies and building of digital capabilities within firms can lead to improvements in labour productivity thus contributing to enhanced overall performance and competitiveness.

While categorizing the level of digitalization across sectors, service is highly digitalized at 0.56 per cent, industry at 0.28 per cent and agriculture at 0.14 per cent (Table 11.4). Furthermore, medium sized businesses are highly digitalized at 7.69 per cent. This has been associated with higher level of labour productivity compared to the other sizes of businesses.

Table 11.5: Level of digitalization across broad sectors and business sizes (%)

	Not digitized	Low digitalized	Moderate	Digitalized	Highly digitalized
Across Broad sectors					
Agriculture	48.29	30.91	19.52	1.14	0.14
Industry	32.91	39.27	26.13	1.41	0.28
Services	36.61	38.61	21.44	2.78	0.56
All sectors	36.92	38.33	21.55	2.66	0.54
Across Business sizes					
Micro	37.94	38.49	21.04	2.23	0.31
Small	16.31	34.01	33.5	11.34	4.84
Medium	23.08	46.15	12.82	10.26	7.69

Data source: MSME Survey 2016

Most businesses sell their products to individual consumers (89.09%), MSMs (8.01%), non-MSMs (2.03%), direct exports (0.08 %) and government (0.12 %). Adoption of technology therefore enable expanding of market base and leads to increased labour productivity.

11.5.3 Infrastructure

(i) Connection to electricity

Businesses that have connection to electricity have significant coefficient indicating that those

connected were more productive by 0.23 units compared to those not connected. In ensuring inclusive growth for Kenya, the informal sector development is crucial. Electricity connection which acts as a catalyst in ensuring use of digital tools is important. While a lot is being done to ensure access to electricity in the informal sector, universal access has not been achieved yet. Electricity connections in the broad sectors were as follows; agriculture 61.63 per cent, industry 69.45 per cent and service at 79.80 per cent. Digital tools used were computers, mobile for business, websites, and mobile money platform.

Table 11.6: Electricity Connectivity across sectors

	Average labour productivity	Electricity Connectivity
Agriculture	7124.1	61.63
Industry	8917.1	69.45
Services	10503.7	79.80
All sectors	11953.5	78.68
Micro	6095.4	78.43
Small	11490.8	83.69
Medium	11818.1	83.33

Data source: MSME Survey 2016

11.5.4 Social System

i. Gender of the owner

Businesses owned by female and male- female partners were less productive by 0.23 units and 0.24 per cent respectively compared to the male owned businesses. The presence of women in the informal sector may be a choice as it affords flexibility between homecare and

market activities (Maloney, 2004; Nordman et al., 2016). Labour productivity in female owned businesses is low and is attributed to lower education and experience among women owners in the informal establishments. Women inability to obtain physical assets which include digital tools due to financial constrains or their choice to engage in activities that require less capital, contributes to low productivity. (Islam, A. M., & Amin, M. 2022).

Table 11.7: Average labour productivity across Gender in business ownership (%)

	Average labour productivity	Not digitized	Low digitalized	Moderate	Digitalized	Highly digitalized
Across gender						
Male- owned	13685	35.25	38.72	22.48	2.95	0.61
Female-owned	13059	40.70	37.49	20.15	1.51	0.15
Male-Female (Partners)	11828	35.34	38.62	21.44	3.66	0.94

Data source: MSME Survey 2016

ii. Age of business

Age of firms in the informal sector influences their willingness, readiness, and capacity of businesses adapt to digital technologies. Businesses have different years of operation since their inception. Those that were less than 5 years categorized as young, those with above 5 years and less than 20 years were medium aged and those above 20 years are

old businesses. Young businesses are most found in the service sector at 50.3 per cent, medium-sized in agriculture at 49.57 and older businesses in the industry at 10.73 per cent compared to other sectors.

The analysis indicates that medium aged businesses are more productivity by 0.49 units compared to old businesses. Young, aged businesses have high labour productivity

of 0.23 units compared to old aged (above 20years) business. Medium aged firms are more inclined to embrace use of technologies while older firms tend not to adapt easily as they have established traditional ways of operating their businesses compared to young

businesses. However, the level of productivity is high in old business which is associated with their level of penetration in the market and years of experience which are the other factors influencing the level of labour productivity.

Table 11.8: Average labour productivity across age of business

	Average labour productivity	Not digitalized	Low digitalized	Moderate	Digitalized	Highly digitalized
Across Age of the business						
Young	10727	35.59	39.56	21.59	2.74	0.52
Medium-aged	11914	38.60	37.21	20.50	2.77	0.92
Old- aged	12926	38.18	37.11	21.66	2.56	0.50

Data source: MSME Survey 2016

11.6 Key Messages and Policy Recommendations

11.6.1 Key messages

1. The informal sector contributed 83.3 per cent of the country’s total employment in 2022; but has low productivity level contributing only 3.2.per cent of value added to the economy. Establishments are leveraging on digitalization to increase productivity as digitalization is associated with high labour productivity. The use of digital tools such as mobile phone and computer and digital services and applications such as Internet and websites offer opportunities for improving operational efficiency, expanding market reach, and accessing financial services.
2. The level of digitalization vary as service sector is digitalized at 0.56, industry at 0.28 and agriculture at 0.14 which shows the low level of digitalization in the sector. This is associated with low digital skills (low skills to operate tools and software systems), low digital literacy level and high cost of digital

tools such as computers and mobile phones.

3. There are over 5.9 million unlicensed establishments countrywide, an indication of a growing informal economy. The largest proportion of the informal establishments, operate in open places (40.6 per cent), temporary structures (24.8 per cent), while 13.8 per cent in permanent structures. Therefore, as the government plans to roll out the 250,000 hotspots targeting marketplaces, the informal sector is expected to benefit from it tremendously as it increases their connectivity.
4. Infrastructure such as Internet and electricity connectivity are enablers of digital transformation. However, their coverage is still low in the informal establishment worksites. To tackle these challenges, the government through the Bottom-up Economic Transformation Agenda, is planning to support Kenya’s Internet connectivity by installing 100,000 Kilometres of optic fibre and 250000 ICT hubs in 290 constituencies to provide free

WIFI to the public. This is expected to enhance level of digitalization in the informal sector. Additionally, to achieve the goal of ensuring universal access to electricity by 2030, the government is implementing electrification projects including trading centres through grid extension and installation of solar in off-grid areas. These areas are part of the informal sector distributed countrywide.

5. There are several platforms that have come up and giving the informal sector an opportunity for digital services. These enterprises use online platforms like MESH, Jiji, Lynk, (e-commerce apps), Facebook, Instagram which has resulted to increased customer base and in turn increased revenues. Additionally, through digitalization, the informal businesses can now access financial credit services such as Hustler fund which are being enabled by use of digital tools.
6. Female-owned businesses register low labour productivity compared to their male counterparts. This is linked to lower level of education, balancing multiple roles at home and workplaces reducing time spent at work. Additionally, and financial constraints faced by women in the informal sector makes them unable to obtain physical assets which are expensive to obtain due to their level of income. These constrains affects the level of labour productivity.

11.6.2 Policy recommendations

To ensure that the informal sector is leveraging on digitalization to improve on its productivity, the following recommendations are made.

1. Invest in digital skills and digital literacy development: To bridge the digital gap, the government need to continue expanding programmes that targets to build digital skills and literacy among

the population especially in rural and underserved areas. It can also purpose to increase coverage for digital hubs to allow accessibility by the informal sector. These hubs will provide basic digital skills to advanced level and build a digitally enabled workforce therefore addressing hinderances to digital transformation. Additionally, develop capacity-building programmes that focus on digital literacy and skills training for employees of older firms to help them effectively implement and utilize technology to improve productivity and competitiveness.

2. The government needs to enhance affordability, access, and competitiveness of digital infrastructure by fast-tracking implementation of programmes on Internet connectivity, broadband fibre, and electricity connectivity in different parts of the country. Furthermore, expanding the scope for the Universal Service Fund to include support development of such infrastructure for the micro and small enterprises will serve to fund infrastructure necessary to support MSMEs. Additionally, accelerate production of locally produced digital tools such as mobile phone to enhance affordability for such tools. It can do these by subsidizing costs and providing incentives for digital investments in the country. To enhance competitiveness of digital infrastructure the government can encourage more investors in the digital sector as increased competition leads to reduced cost of digital tools and infrastructure. Moreover, the county aggregation industrial park should be adequately equipped with digital infrastructure.
3. To support inclusive growth in the informal sector there is need to create mentorship and networking opportunities for women entrepreneurs:

Connect women in the informal sector with successful digital savvy business owners to provide guidance, support, and insights on leveraging digital tools efficiently. They can share experiences and best practices from successful businesses.

4. Collaborate through the Public Private Partnership (PPPs) to help

development of digital platforms and technology adoption in the informal sector. Innovators and tech giants are significant in supporting governments goals as this partnership can help in achieving digital economy goals by bringing in expertise and resources to support the development of such initiatives and offer trainings.



12.1 Conclusions

Macroeconomic performance and medium-term prospects

1. The economy recorded stronger growth in 2023, picking up from disruptions of the post-COVID recovery in 2022 by a confluence of prolonged drought, tight global financial conditions and geopolitical tension that disrupted the supply chains. Overall, the economy grew by 5.6 per cent in the first three-quarters of 2023 compared to a growth rate of 5.2 per cent in 2022. The agricultural sector expanded by 7.0 per cent while the services sector grew by 6.4 per cent and manufacturing recorded a growth of 2.1 per cent.
2. Timely monetary policy response to inflation developments anchored inflation expectations in 2023. However, overall inflation breached the government target band of 5 ± 2.5 per cent, driven primarily by fuel inflation that trended upwards in 2023 on the backdrop of implementation of VAT on fuel and developments in the global oil markets.
3. Even though lending rates slowly crept up with increase in Central Bank Rate in 2023, private sector credit growth was resilient, growing by 13.9 per cent in 2023 compared to 12.5 per cent in 2022. Meanwhile, the banking sector soundness indicators stayed within the statutory thresholds, but concerns remain about the increasing non-performing loans.
4. The government stayed on its commitment to fiscal consolidation plan as fiscal deficit narrowed from 5.6 per cent of GDP in 2022/23 to an estimated 4.9 per cent in 2023/24, supported by prudent expenditure management and enhancement of domestic revenue mobilization efforts. Moreover, the public debt strategy of increased share of concessional loans has yielded positive results, but debt vulnerabilities remain high. Nonetheless, public debt sustainability remains exposed to exchange rate and interest rates shocks, volatilities in global financial markets, and rollover risks.
5. On the external position, current account deficit narrowed in 2023 owing to improved net merchandise trade, secondary incomes, and services account. Notably, over the years, the poor performing merchandise trade has put pressure on the current account balance, while diaspora remittances have boosted the performance of the current account.
6. The economy is projected to grow at 5.7 per cent in 2024, and average 6.0 per cent in the medium-term, assuming normal conditions prevail. Exploiting emerging opportunities should see growth at 6.1 per cent in 2024, and 6.6 per cent in the medium-term. Should the downside risks materialize, growth could be depressed to 5.3 per cent in 2024, and 5.6 per cent in the medium-term. Inflation is projected to remain within the government target range.

Productivity in the manufacturing sector

7. Because of dominance of MSMEs, which are associated with low technology use, and low investment in research for development and innovation, enhancing productivity in the manufacturing sector is a major challenge. For example, the contribution of food agro-processing to manufacturing value added increased from 15.0 per cent during the Economic Recovery Strategy for Wealth and Employment Creation to 28.4 per cent with MTP III, while the non-food agro-processing and non-agricultural processing, which uses more advanced technology, declined during the same period.
8. Innovation and patenting are low among MSMEs because of low expenditures in research for development. This indicates a low innovation capability. The medium-sized firms spent 2.8 per cent on research for development compared to small and micro firms at 0.8 per cent and 0.2 per cent, respectively. This indicates a deficit in the research, knowledge, and information infrastructure, and weak linkage with other firms and research institutions.
9. The engagement of 3rd and 4th skills required to drive productivity is low. For the micro firms, the largest proportion of the labour force has 1st level and 2nd level skills at 44.1 per cent and 39.9 per cent, respectively. A smaller proportion is distributed across the 3rd (12.8%) and 4th (3.2%) skill levels, indicating that micro firms rely on foundational and intermediate skills sets. For the small and medium sized firms, a large proportion of the labour force has the 4th level skills at 42.4 per cent and 64.0 per cent, respectively, an indication of presence of skilled workers.

10. The level and intensity in use of electricity in a country is one of the enablers of economic growth, its competitiveness and investment activities. About 90 per cent of small and medium-sized firms have electricity connections compared to micro firms. Access to electricity increases labour productivity by 53.5 per cent in MSMEs, although the productivity gains are higher in micro enterprises at 55.4 per cent. The low access to electricity in micro firms is because of various challenges, such as the number of procedures undertaken to access electricity, cost of connecting electricity to the establishment, time taken to be connected, and high cost of electricity bills.

Trade and productivity across sector

11. Trade plays a pivotal role in driving the overall productivity of a country by promoting specialization and expanding market access by domestic producers. However, within the wholesale and retail trade sector, MSMEs dominate, with most of them operating informally. This limits their access to government-ready market through AGPO. MSMEs engaging with government procurement demonstrate higher productivity levels than those selling to individual consumers. This reflects on the requirements they need to fulfil in making delivery under AGPO. However, challenges such as pending bills, bureaucratic processes and limited access to finance still limit these engagements.
12. The contracting arrangements of MSMEs for procuring goods or securing orders show a wide variation, with many relying on informal or non-structured agreements, especially prevalent among small enterprises. While a considerable number of MSMEs opt for

- non-contractual agreements for inputs or orders, there is a notable presence of formal contractual arrangements within the MSME sector, particularly among micro and small enterprises. Firms that have formal contracts for both inputs and final goods and services demonstrate higher labour productivity compared to those without formal contracts. This is often the case because formal contracts provide clarity, outline responsibilities, and establish expectations, leading to smoother transactions, reduced disputes, and increased efficiency in operations.
13. Firms engaging in export activities demonstrate higher levels of productivity compared to those not involved in export trade activities. Engagement in export activities not only expands market opportunities but also drives firms towards operational efficiency, innovation, and efficiency improvements that contribute to higher levels of productivity compared to firms solely focused on domestic markets.
 14. The country faces limitations in market infrastructure, including limited warehousing and cold storage facilities, and inadequate transport infrastructure, particularly in rural areas heavily dependent on agricultural activities. This is exacerbated by the slow pace in the construction of tier 1 markets as envisioned in the Kenya Vision 2030, which are essential for efficient market operations and trade facilitation. Addressing these infrastructure challenges is vital to enhancing market accessibility, reduce post-harvest losses, and support to the overall development of rural economies.
 15. Supermarkets play a crucial role in wholesale and retail sector, but recent closures of branches among major chains have impacted sector productivity. Government reforms, including the introduction of the Retail Trade Code of Practice (RTCP) and a prompt government procurements payment policy, aim to regulate the relationships between retailers and suppliers, prevent buyer power abuse, and promote fair trade practices. These reforms have been key in addressing emerging issues such as delayed payments and financial stability, contributing to a more transparent and sustainable retail market environment. In addition, controlling rising counterfeit goods that poses a challenge to the productivity growth of the MSMEs calls for enforcement of regulatory measures both at national and county levels.
 16. At international level, implementation of trade facilitation measures such as the Single Customs Territory (SCT) leads to a significant reduction in the time and cost involved in import and export processes. This reduction directly correlates with increased trade activities, as streamlined customs procedures and efficient logistics enable businesses to conduct transactions more swiftly and cost-effectively. Reduced transit times translate to quicker delivery of goods, improved supply chain management, lower transportation costs, and ultimately, increased productivity for businesses. This efficiency allows companies to operate more smoothly, meet customer demands promptly, reduce inventory holding costs, and potentially explore new market opportunities due to enhanced trade facilitation. Moreover, ongoing trade agreements such as AGOA and the AfCFTA have enhanced Kenya's export trade, offering avenues for economic growth through increased exports and imports, with the potential benefits of driving trade when both tariff and NTMs are eliminated rather than focusing solely on tariff liberalization.

Agriculture productivity

17. Agriculture productivity is driven by implementation of supportive policies that focuses on offering incentives for investment in agriculture, protecting farmers from risks and price volatility and ensures market access and value addition.
18. Allocation of adequate funding to the agriculture sector has been on average less than 5 per cent, far below the Malabo commitment. Adequate funding to the agriculture sector is key in enabling investment in the supportive rural infrastructure such as storage facilities to reduce wastage and facilitate timely input supply and distribution and development of markets and value addition to increase outputs and productivity.
19. The output and productivity of food and cash crops is driven by the area of land used for production, access to intermediate input use such as quality seeds and fertilizer and timely planting and application of fertilizer. Though there is increased use of inputs as demonstrated by fertilizer import and distribution, increases in input use has not translated into productivity in crop yields or in the sector productivity as demonstrated by yields of various crops.
20. Productivity per work has been increasing, but this has not translated to agricultural productivity. Investment in knowledge and skills development are key in increasing labour productivity, facilitating farmer access to extension services and adoption of modern technology and innovations to increase farm productivity.
21. Implementation of various measures spelt out in the BETA plan such as investment in crop and livestock

insurance and development of value chain development for various crops will raise output and yield for various crops. Furthermore, focus on value chain development will help increase productivity for the targeted crops such as oil crops, coffee and tea as well as livestock and livestock products.

Skills development

22. To realize the objectives of the national development agenda, particularly in critical priority areas outlined in the Bottom-up Economic Transformation Agenda (BETA), matched skills development is paramount. The existing skills development framework does not effectively align with these priority sectors, as evidenced by low enrolment rates in courses relevant to the fields. This misalignment poses a significant challenge to achieving the agenda's objectives and may jeopardize the attainment of national priority agenda.
23. Education and training serve as a pivotal channel for skills development. However, the challenges of inequalities, wastages, poor education outcomes, and gender disparities persist. This may hinder the ability to fully harness human capital potential, thereby limiting productivity gains.
24. Apprenticeship training is another avenue for skills development. Given the dominance of informal sector employment in the country, majority of apprentices find themselves in the informal setting. Informal apprenticeship programmes lack systematic organization, standardized training, and quality assurance mechanisms. Inadequate working conditions, safety measures, and theoretical knowledge further compound these challenges. The government has formulated Recognition of Prior Learning policy that

recognizes training and qualifications through comprehensive national qualifications frameworks. Through RPL, individuals with informal skills can undergo assessment and receive certificates in their respective areas of expertise.

25. Workplace training presents an opportunity for skills enhancement among employed individuals. However, employers face financial costs in providing staff training, cost of staff time foregone by workers when they are on training and risks associated with workforce turnover.
26. Critical sectors such as health, manufacturing, and ICT have skills shortages, evidenced by inadequately qualified workers. Addressing these shortages is essential for driving growth and development in these sectors. Moreover, projections indicate significant workforce needs in sectors such as textile and leather, emphasizing the need for skills development initiatives to meet future demands.
27. Vertical qualification mismatch remains a concern, with a notable percentage of medium- and high-skilled workers holding occupations that do not align with their qualifications. This mismatch underscores the challenge of insufficient quality job opportunities for tertiary graduates, highlighting the need for interventions to bridge this gap and ensure better alignment between labour market demands and educational outcomes.

Labour productivity at the county level

28. Counties are central to the country achieving sustainable and inclusive economic growth. Economic activities take place at the county level and therefore interventions to enhance

productivity at this level would increase productivity at the national level.

29. Arid counties have the smallest gross value added, and the highest episodic growth rates. Growth rates have been volatile because of climate change effects, which disproportionately affect arid counties, thus hindering convergence in economic growth across the counties. These counties also have latent natural resources in form of land, renewable energy sources and tourism, and thus significant potential to grow their economies. However, challenges in access to essential physical and capital infrastructure and persistent insecurity are the main challenges inhibiting optimal utilization of these potentials.
30. Arid counties have comparative advantages in livestock production. These counties have 56 per cent of beef cattle, 66 per cent of sheep, 73 meat goats, indicating high potential in the meat processing, leather, dairy, and live livestock export. However, the livestock value chain is yet to be fully exploited. Climate change through frequent and severe droughts is inhibiting the full realization of arid counties livestock production. Although interventions such as index-based livestock insurance and feed production have been rolled out by the government and the private sector, the uptake remains low.
31. The non-market services dominate the service sector GVA in the arid counties, indicating low contributions by the private sector to the county output. The contribution of the tourism sector is very low despite the presence of significant tourism sites, also indicating unexploited potential.
32. There is low transfer of labour from agriculture to other sectors as agriculture

- still dominates the employment shares in all county categories. Employment in agriculture is comparatively lower in arid counties compared to semi-arid and non-ASAL counties, indicating climate-change induced push factors. The wholesale and retail trade absorb labour from agriculture in these counties, but the sector is characterized by high levels of informality and low output leading to low labour productivity.
33. Arid counties have comparatively lower labour quality as reflected by lower basic education enrolment rates and health indicators that affect the quality of the future labour force. Additionally, these counties have lower quantity of labour as seen in the smaller size of the working age population to total county population and lower employment to population ratio for the non-youth category. These counties experience low utilization of the available labour as reflected by higher unemployment rates and higher inactivity rates for persons of prime age. Labour inactivity due to discouraged job seekers is comparatively higher in the arid counties, indicating presence of persons willingness to engage in labour but engagement is limited due to job unavailability.
34. Cultural practices, climate change and insecurity are impeding the acquisition of formal skills by children and teenagers in arid counties. Although cultural practices are key to acquisition of indigenous knowledge needed for the sustenance of pastoralism, formal skills are needed for economic transformation in the counties. Therefore, acquisition of both skills is important for the counties to utilize their potential.
35. There is low transfer of labour from agriculture to other sectors as agriculture dominates the employment shares in all county categories. Employment in agriculture is comparatively lower in arid counties compared to semi-arid and non-ASAL counties, indicating climate-change induced push factors. The wholesale and retail trade absorbs labour from agriculture in these counties, but the sector is characterized by high levels of informality and low output leading to low labour productivity.
36. Arid counties have the lowest labour productivity growth compared to the other county categories. This indicates lower efficiency in the use of labour, which is attributable to climate change threats that lower the output from agriculture (which is the main employer) and concentration of alternative employment in low productivity services sectors such as the wholesale and retail trade. The low labour utilization due to inadequate job creating industries explains the lower labour productivity growths.
- Leveraging strategic partnership to unlock technology transfer**
37. The emerging economic powers, revitalized South-South and Triangular Cooperation, admission of the African Union as a permanent member of the G20 could be a potential opportunity for African countries to acquire appropriate technology and enhance innovation cooperation through strategic partnerships. Due to its flexibility and emphasis on economic cooperation, Kenya could benefit from strategic partnerships by ensuring that acquisition of new technologies, technology and innovation cooperation and knowledge sharing become a priority in bilateral negotiations and overall external engagement.
38. The COVID-19 pandemic was a turning point for African countries to rethink and redesign public health ecosystems and

increase local vaccine manufacturing and other therapeutics. Pragmatic measures should be a priority of the government in reforms of healthcare systems and tapping into the initiatives and opportunities by the World Health Organization, Africa CDC and other stakeholders in supporting the development of healthcare ecosystems in the continent.

39. Africa's textile and apparel industry has faced numerous challenges in the past three decades as a significant number of Asian countries emerge as the main exporters of textile products. Despite intervention measures to revitalize the textile industry, African countries are yet to make a breakthrough, like their Asian counterparts. To revive the textile industry, strengthening of capacity of farmers who are key in the production of raw materials such as cotton, wool and other forms of fibres is imperative. With new trends in the industry focusing on sustainable textile development, Kenya could explore opportunities that might support the modernization of the textile sector by adopting affordable technologies.

40. Infrastructure development and connectivity have emerged as key enablers for economic growth and enhancing productivity. Kenya's Vision 2030, medium-term plans and the Bottom-up Economic and Transformation Agenda have identified infrastructure as a key facilitator for accelerating socio-economic growth and development. Since its launch in 2013, the China's Belt and Road Initiative is increasingly playing a major role in connecting the world's regions through comprehensive infrastructure investment and development. It is in Kenya's interest to sharpen its infrastructure development diplomacy by deploying professionals to negotiate

for technology transfer and innovation that could impart technical know-how and skills to the locals.

41. International academic mobility has potential for technology transfer, knowledge circulation and skills development that could benefit the country of origin of international students and academics. Through targeted policies and strategies, Kenya could benefit from its diaspora's expertise, skills and technical know-how. There is need to consider incentives that might enable citizens abroad to contribute to the country's development through knowledge remittances.

The contribution of public service

42. The contribution of the public service to GDP has shown relative stability over time, supported by Medium-Term Plans. However, external factors such as political risks, the COVID-19 pandemic, and weather shocks have influenced these contributions, with varying impacts on counties based on their geographical characteristics and population size. Notably, the devolution of government functions in Kenya has led to significant changes in the public service landscape, with counties facing challenges in workforce management due to freezes on recruitment and disruptions from the COVID-19 pandemic. Strategic policies, infrastructure investments, and governance reforms are crucial for stimulating productivity and economic development, especially in the arid counties.

43. Despite an overall increase in national productivity, disparities across counties remain significant, highlighting the need for targeted interventions. Policies should focus on improving access to technology, enhancing personnel quality, infrastructure development, and

governance practices to bridge these gaps and improve productivity in the public sector.

44. Enhancing public service delivery requires a comprehensive approach involving capacity building, performance management, technology integration, and oversight mechanisms. Addressing constraints such as low uptake of training programmes and gaps in performance management implementation is essential for achieving the government's goal of providing high-quality services to the public.
45. While the Country has demonstrated efficiency in revenue mobilization, there are concerns about the quality of budgetary and finance management practices. The shortfalls in revenue collection targets, low allocations to critical areas such as wages and salaries, and lack of capital expenditure raise concerns about the government's ability to fund essential services and projects efficiently.
46. Public satisfaction with public service delivery is determined by creating a conducive business environment, promoting national values, and upholding good governance practices. Improving the business environment, embracing diversity, and ensuring ethical standards in the public service are crucial for enhancing productivity and service delivery.

The informal sector

47. Despite facing challenges of low productivity levels, the informal sector continues to significantly contribute to employment. To counter this challenge, establishments are trying to leverage on digitalization to increase their productivity as digitalization is associated with high labour productivity.

Some of the digital tools and online platforms that the informal sector has adopted and utilized are mobile phones, computers and use of Internet and websites. The tools offer opportunities for improving operational efficiency, expanding market reach, and accessing financial services. These have resulted to increased customer base and in turn increased revenue.

48. Most of the activities in this sector are concentrated in agriculture, services and industry sector, and their level of digitalization is still low. The level of digitalization varies as the services sector is digitalized at 0.56 per cent, industry at 0.28 per cent and agriculture at 0.14 per cent. This is associated with low digital skills, such that business owners are not able to use digital tools of software, low digital literacy level and high cost of digital tools such as computers and mobile phones. To solve the issues of skills and digital literacy, the government rolled out programmes such as Ajira and Jitume, aimed at providing the youth with access to digital skills, digital services, and opportunities to enable them take advantage of technology for job creation.
49. Infrastructure such as Internet and electricity connectivity are enablers of digital transformation. However, their coverage is still low in the informal establishment worksites. In increasing connectivity, the government approved the implementation of the Bottom-up Economic Transformation Agenda, the Digital Superhighway which is part of the government's efforts in strengthening digital economy and ensuring inclusivity. The programme is expected to strengthen Kenya's ICT backbone by increasing the fibre network across the country, reducing the cost of Internet connectivity, enhancing e- government services and automating VAT systems

to enhance revenue collection. This will involve installation of 100,000km of fibre cable, which is expected to create 25,000 WIFI hotspots available to the public.

50. Labour productivity in female-owned businesses is low compared to their male counterparts. This is linked to lower level of education, balancing multiple roles at home and workplaces reducing time spent at work. This affects the level of labour productivity for female-owned businesses. Additionally, financial constraints faced by women in the informal sector makes them unable to obtain physical assets that are expensive to obtain due to their level of income.
51. Age of firms in the informal sector influences their willingness, readiness, and capacity of businesses to adapt to digital technologies. Additionally, medium-aged firms are more inclined to enhance their productivity by embracing the use of technologies while older firms tend not to adapt easily as they have established traditional ways of operating their businesses. Young businesses (<5years) digitalized at 48 per cent, medium-aged (>5 years & < 20years digitalized at 42 per cent and old (> 20years digitalized at 10 per cent.

12.2 Policy Recommendations

In enhancing productivity for sustainable and inclusive growth, the following are the recommendations.

To enhance macroeconomic stability that supports productivity for inclusive growth.

1. Strengthen agricultural resilience by investing in irrigation infrastructure, drought-resistant crops, and climate-smart agricultural practices to buffer the economy against future effects

of climate change. Further, revitalize economic growth by enhancing sectoral productivity through sector specific interventions such as technological advancements, improved management practices, or better worker training; change in sector product mix to value added goods or service, reduction in costs of raw materials or other inputs.

2. Manage overall price developments through timely and adequate monetary policy stance to rein in non-food non-fuel inflation while investing in initiatives that enhance agricultural productivity to increase food production and in turn ease food inflation. Such initiatives include scaling small-scale irrigation and lowering input prices to enhance initiatives such as the ongoing fertilizer and seed subsidy programmes.
3. To address the growing non-performing loans ratio, there is need to boost growth of the private sector activities by enhancing the ease of doing business, reducing bureaucratic hurdles, and creating a favourable regulatory environment that encourages banks and other lending institutions to extend credit to the private sector. Also, encouraging banks to restructure loans, especially for small and medium-sized enterprises and offering concessionary loans to sectors such as agriculture is a priority. Further, maintaining a sustainable fiscal position and scaling up implementation of public finance management regulations and PFM Act of 2012 (including in debt and cash management) could prevent the occurrence of government arrears to individuals, suppliers, and banks.
4. Sustaining momentum to remain along the fiscal consolidation path is necessary to build fiscal buffers and reduce public debt vulnerabilities. This is through a front-loaded fiscal policy stance that prioritizes expansion of the

- tax base, reducing tax expenditures, and scaling up revenue mobilization measures in the medium-term revenue mobilization strategy. Further, utilize supplementary appropriation to rationalize public expenditures and reduce fiscal slippages in state-owned enterprises.
5. With elevated risks of debt distress, it is imperative that debt management strategy emphasizes on diversifying debt sources by prioritizing acquisition of concessional loans from multilateral institutions, scaling up uptake of grants and exploring debt restructuring options in a timely manner before maturity of huge debts. Further, exploring issuance of use-of-proceeds (UOP) bonds and sustainability linked bonds (SLBs) could be instrumental in driving key BETA priorities on health and housing.
 6. Address weak merchandise trade balance through diversification of exports by focusing on high technology sectors such as manufacturing to drive value added exports. This is by promoting innovation in manufacturing processes and technologies to improve efficiency and productivity through tax incentives, grants, and public-private partnerships for research institutions and companies. Initiatives towards technology transfer and adoption for the manufacturing sector could be pivotal for the sector. Important is the need to lower costs for the manufacturing sector by reducing tariffs on imports of machinery, equipment, and raw materials. Further, addressing supply-side bottlenecks such as standardization, market information and cost of production will bolster export volumes.
 7. Policy makers need to be more vigilant on downside risks to ensure timely and prudent policy action. Further is to support aggregate demand in the economy, especially for investment, consumption, and exports, and by maintaining appropriate monetary and fiscal policy interventions. For instance, policy makers could leverage strategic partnerships to promote investment, exports, and technology transfer, while mitigating potential risks such as payment of pending bills and mitigating debt vulnerabilities.
 8. Implement strategies to enhance productivity and innovation within the services sector through investment in technology, skills development, and digital infrastructure development to facilitate collaboration, and access to information. Additionally, efforts towards fostering more synergies and interdependence between the services sector and other sectors, through development of industry clusters and support knowledge sharing. The services sector could provide support services such as coordination, marketing, and research for development to manufacturing firms for enhanced productivity and competitiveness.
 9. County governments to leverage on various government initiatives, such as involving in value chains and accelerating technological progress, taking advantage of established County Aggregation and Industrial Parks to promote agro-processing, support agri-business, and investing productive resources in areas of their unique comparative advantage, from crop, livestock, industry and manufacturing, urban development, and the services sector. They can institute measures that will boost productivity of factors of production, especially labour and capital, and diversify economic activities. Counties need to continuously mitigate and adapt to climate change for sustainable development.

To enhance labour productivity in manufacturing

10. The government to equip and upgrade existing county industrial development centres to create an innovation culture among MSMEs. Moreover, providing fiscal incentives to firms that engage in Industrial Innovation Programme aimed at commercialization of viable innovations is important. These incentives could range from increased government expenditure on research for development to the recommended 2 per cent of the GDP. Furthermore, this increased financing can fund research institutions undertaking high quality projects identified through the Kenya National Innovation Agency, and provision of subsidies. Other initiatives include provision of tailored public trainings for firms, especially in the informal sector to enhance innovation and entrepreneurship and speed-up implementation of the Konza City Technopolis to facilitate establishment and growth of medium high and high technology innovations.
11. Develop 3rd and 4th skills levels to manufacturing sub-sectors by providing incentives to students enrolling in Science, Technology, Engineering, and Math (STEM) through provision of scholarships and bursaries. Furthermore, upskilling existing 1st and 2nd level skills by adapting to changing demands of the sector. This is by creating awareness among MSMEs on the benefits of Industrial Training Levy Fund, which allows the National Industrial Training Authority (NITA) to offer training services to contributing MSMEs.
12. Improve startup financial capital to MSMEs through establishment of Industrial Development Fund as envisioned in the Industrialization Policy to provide access to startup capital for MSMEs. Enhance implementation of credit guarantee

schemes and create awareness on the benefits of the schemes to MSMEs.

13. Promote the use of off-grid productive use of energy by providing tax incentives to micro firms investing in energy efficient technology in the production process. Additionally, awareness creation on MSMEs through MSEA on benefits of off-grid productive use of energy for micro enterprises.

To enhance productivity through trade

14. Enhance and modernize market infrastructure to foster a dynamic and supportive business environment. This includes addressing market issues, prioritizing the completion of tier one markets through sufficient budgetary allocation, establishing adequate warehouses for aggregation and storage, constructing sufficient cold storage facilities, and addressing the logistical constraints by improving rural roads transport infrastructure to enhance market accessibility for small farmers.
15. Encourage MSMEs to formalize their contracting arrangements for procuring goods or securing orders by providing capacity-building workshops, legal assistance, standardized contract templates, and fostering industry collaboration. The shift towards structured contracts establishes expectations, and leads to smoother transactions, ultimately boosting labour productivity and operational efficiency within the MSME sector.
16. Empower MSMEs in the wholesale and retail trade to expand into export trade to boost their productivity. To enhance the quality, sustainability, and competitiveness of MSME products, it is essential to provide training in entrepreneurship culture and value addition, support the certification of MSME products, assist in registering

Industrial Property Rights (IPRs) for MSMEs, and facilitate their access to local, regional, and international markets through market development initiatives such as funding participation in regional and continental trade fairs.

17. Fast-track the implementation of Kenya's National AfCFTA implementation strategy (2022-2027) to boost intra-continental trade by leveraging on targeted product and service exports through the AfCFTA Guided Trade Initiative (GTI). The government to allocate sufficient resources towards implementing the strategy through the National Implementation Committee (AfCFTA-NIC) and raise awareness within the business community about the potential benefits of the AfCFTA.
18. Enhance the ongoing trade facilitation measures such as implementation of the Single Customs Territory to further reduce the cost of doing trade in the region. To enhance current trade facilitation measures, the Northern Corridor States can streamline customs procedures for imports, exports, and transit of goods. This involves reducing documentation requirements, expediting cargo release times, and implementing mutual recognition of authorized operator schemes to promote smoother trade transactions within the region.

To enhance productivity through agriculture

19. Ensure timely procurement of seeds and fertilizer, monitor the distribution and access by the farmers and ensure use and application by the farmers is per the requirements, by sensitizing farmers on various elements of fertilizer use such as the time of application, application rates and the appropriate in the production process. Specifically, the commitment of various allocations for crop promotion, seed and input supply and farmer training

needs to be actualized in coordination with the counties.

20. Generate and allocate adequate government spending on agriculture from the national budget on agricultural specific activities. A deliberate action by the counties to allocate resources for the sector will also be key in ensuring achievement of Malabo commitment for agriculture sector funding and ensure agricultural transformation.
21. Reduce post-harvest loss and wastage through implementing various agro-processing and value chain projects in MTPIV such as storage and cooling plants will be crucial in providing the required infrastructures for storage to increase outputs, reduce wastage and increase productivity.
22. Enhance uptake of livestock and crop insurance. Develop and implement crop and livestock insurance schemes to protect farmers from vagaries of weather and ensure they can recover from any failed rain.
23. Invest in human capital development. Ensure agriculture subject is made a compulsory subject in secondary schools. Furthermore, facilitate training and monitor the supply and the requirement of various professionals in agriculture sector such as extension officers, plant and crop breeders, and other scientists to ensure adequate well-trained labour for the sector. This will help serve the farmers in facilitating farmer access to extension services and adoption of modern technology and innovations to increase farm productivity.
24. Support value chain development by implementing fully the proposed value chains for the prioritized crops in MTP4 to help the farmers to add value to their products, increase their incomes and

productivity for the targeted crops. This is important for the country to help reduce amount of food import bill incurred in the country.

In developing appropriate and adequate skills

25. Focus skills development to address the national priority areas, which are Agriculture, Micro, Small, and Medium Enterprise (MSME); Housing and Settlement; Healthcare; and Digital Superhighway and Creative Economy. This can be done by mobilizing adequate resources through public private partnerships to offer targeted scholarships, loans and bursaries to students to study these priority areas; establishment of the National Skills and Funding Council to oversee funding initiatives for supporting skills development in the country; retooling workers in the labour markets towards the national priority areas by offering them conditional exchange programmes; and strengthening centres of excellence that offer training in priority areas such as the Dairy Training Institute, leather, agricultural colleges and medical colleges, and by allocating adequate financial resources for providing adequate and quality infrastructure and recruitment of adequate trainers.
26. Provide outreach programmes to encourage enrolment and retention of learners at all levels of education and training. The cost of education has been an impediment for learners to access and participate in schooling. It is therefore important to review the free primary education policy to include pre-primary education level to enable all learners access universal basic education at no cost. In addition, the government could remove all indirect costs related to education, such as the cost of uniforms, textbooks, and transportation so that basic education is completely free.
27. The Recognition of Prior Learning (RPL) policy acknowledges apprenticeship in the informal sector as a valuable pathway for skills development. To ensure effective implementation of this policy, it is necessary to conduct widespread awareness campaigns among employers and employees. This could be achieved through various channels, including radio, television, and social media. In addition, there is need to enforce the implementation of tax rebates for training expenditures to alleviate budget constraints by providing financial relief to organizations investing in employee development. This is under Section 15 of the Income Tax Act for the expenditure incurred in relation to salaries and wages.
28. Allocate adequate financial resources to support implementation of competency-based curriculum (CBC) at basic education level, the competency-based education and training (CBET) curriculum at TVET, and expansion of university education. This will help bridge the skills mismatch with the labour market by providing teachers, professional development programmes, enabling legal and institutional framework, and investing in the required infrastructure consistent with relevant courses. Further, the academia could establish strong partnerships with industries, businesses, and community organizations to understand their evolving needs and align educational delivery accordingly.

To increase counties output, employment levels and labour productivity

29. Build climate resilience in the livestock sub-sector in the arid counties. This can be achieved through increasing the uptake of weather-based insurance schemes for livestock production by creating demand for livestock insurance, promoting use of asset-backed insurance and subsidizing premiums for disadvantaged pastoralists;

continuous promotion pasture and fodder establishment, utilization and conservation through extension services and provision of subsidized inputs; funding research in improved and drought resistant fodder varieties that target pastoralists; optimal utilization of the information from the drought early warning systems to encourage early commercial livestock offtake to mitigate losses; establishment of county livestock enterprise fund that will finance pastoralists to restock after drought episodes to accelerate recovery.

30. Optimally exploit the livestock value chain in the arid counties by increasing public and private investments in the leather and meat processing industries. This could be achieved by creating awareness among pastoralists on the value of hides and skins; increasing extension services to improve the quality; facilitating aggregation and pooled sales to increase producers bargaining power; and providing incentives to local leather product manufacturers to establish tanneries in the arid counties. Increasing investments in meat processing for export. This will require increasing the number of modern abattoirs and meat processing facilities in the arid counties as the majority are in Nairobi and other major cities. Other key investments are implementing the livestock identification and traceability system, which will ensure that livestock products meet the food safety standards required by the international market.
31. Reduce the dominance of non-market services in arid GVA to encourage development of market-oriented services by leveraging tourism resources in the arid counties. This will entail marketing the tourist sites in the counties to encourage local and international tourism; incentivizing players in the hotel and accommodation to invest in tourism

facilities in the arid counties; leveraging on cultural tourism and desert safaris that are unique to the region; and developing resort cities that are part of the LAPSSET project, which entail upgrading Isiolo and the towns near Lake Turkana to resort cities. This can be achieved through accelerating infrastructural development by fast-tracking and completing the LAPSSET transboundary corridor that passes through the arid counties. Additionally, curbing banditry in the arid counties by continuing with the current efforts of deploying security services and using traditional institutions to encourage community-led peace building initiatives to achieve sustainable peace will enhance stability in the region and encourage investments.

32. Create jobs to optimally utilize the labour in arid counties and support MSMEs that absorb labour from agriculture by providing fiscal and other incentives to attract investment in industries that would provide employment opportunities and developing business funds to support the MSMEs.
33. Improve the quality of labour in arid counties. This is achievable through continuous implementation of adult and continuing education to improve the quality of the current labour force and accelerating the implementation of programmes aimed at improving the effectiveness of the education system. This includes programmes implemented by NACONEK, such as mobile schools, school feeding programmes and low-cost boarding schools.

To unlock technology transfer by leveraging strategic partnerships

34. Strengthen strategic partnerships with both emerging economies and developed economies through enhanced bilateral

cooperation, South-South Cooperation and Triangular Cooperation. This may involve rethinking diplomatic tools of engagement to target critical technologies for enhancing productivity, digital economy and overall inclusive growth and development. Establish South-South and Triangular frameworks to enable the country to benefit from new global governance.

35. Improve policy environment that suits the use, adoption, and adaptation of the new technologies to harness frontier technologies, this might involve policy and institutional reforms to support public-private partnership and improving business environment that will attract investors of frontier technologies to the domestic market. Other reforms should target development of digital infrastructure, improvement of skills at all levels of education and enhancing financial inclusion to improve domestic credit availability.
36. Optimize on the opportunity offered through the nomination of Kenya as one of the six African countries to benefit from mNRA technology by investing in technological absorptive capabilities and policy frameworks that could accelerate local vaccine manufacturing and other therapeutics within the country. Further, consolidate and implement the AU-led reforms and initiatives to strengthen national and regional healthcare systems.
37. Strengthen the capacity of farmers who are key in the production of raw materials such as cotton, wool and other forms of fibre to revive the textile industry, through strategic partnerships, conduct an elaborate survey and benchmarking in selected Asian countries and in African countries that have made progress in textile industry. In addition, invest in new and affordable technology, new machines and policy reforms that will enable two

levels of government and the private sector to establish a sustainable textile industry.

38. Ensure that state negotiators understand the implications of such infrastructure development cooperation for Kenya's national interests to optimize the benefits from BRI and other infrastructure development supported by other development partners. Involve engineers and other professionals in the negotiations of infrastructure development projects to ensure that every strategic partnership enhances technology cooperation and transfer.

To enhance productivity in public service

39. Promote and establish a coordinated and strategic approach to capacity building and human resource management across all levels of government. This will entail developing standardized training programmes tailored to the specific needs of different counties, ensuring public servants have the necessary skills, streamlining recruitment processes, offering competitive salaries, and implementing performance management systems for enhanced accountability and performance.
40. Implement targeted interventions to improve access to technology, enhance personnel quality, invest in infrastructure, and strengthen governance practices. Prioritize human capital development, economic and fiscal management improvements, and transparency and accountability measures to create an enabling environment for improved productivity.
41. Prioritize a comprehensive approach to enhance public service delivery, including expanding training programmes, streamlining performance management, leveraging technology for digitization,

and promoting e-participation for citizen engagement. Ensure coordination among government, civil society, and stakeholders for effective implementation.

42. Strengthen budgetary and financial management practices at national and county levels. Improve revenue collection, enhance budget execution, comply with the 35 per cent ceiling for wages and salaries spending, increase allocation to operations and maintenance, prioritize capital expenditure, and address pending bills to improve service delivery.
43. Focus on creating an enabling environment for businesses, promoting national values, and upholding good governance practices. To achieve this, the government could implement reforms to simplify business registration, improve access to credit, protect property rights, and invest in infrastructure, promote diversity and inclusivity, ensure ethical standards, and enhance conflict resolution mechanisms to improve public satisfaction and productivity.

To ensure that the informal sector is leveraging on digitalization to improve on its productivity

44. Invest in the enhancement of digital competencies and literacy to narrow the digital divide. The government will need to expand initiatives aimed at fostering digital skills and literacy among all citizens, particularly in rural areas and youths in the informal sector. There is need to focus on expanding the reach of digital hubs to facilitate access for informal sector participants. These hubs will offer a range of digital skills from basic to advanced levels, fostering a workforce proficient in digital technologies and overcoming barriers to digital advancement. Furthermore, establish training programmes that concentrate on enhancing digital literacy and skills sets

for employees in established companies, enabling them to effectively integrate and leverage technology for enhanced productivity and competitiveness.

45. Improve the cost-effectiveness, availability, and competitiveness of digital infrastructure by expediting the execution of initiatives for Internet access, broadband fibre, and electricity connectivity across the country. Additionally, activate the Universal Service Fund by government to aid in the advancement of this infrastructure; and accelerate production of locally produced digital tools such as mobile phones. This will increase affordability for such tools. The government could subsidize the costs and provide incentives for digital investments in the country. To enhance competitiveness of digital infrastructure, the government could encourage more investors in the digital sector as increased competition leads to reduced cost of digital tools and infrastructure.
46. Establish mentorship and networking avenues for female entrepreneurs: Link women operating in the informal economy with accomplished business owners proficient in digital technologies to offer mentorship, assistance, and advice on optimizing digital resources effectively. This will enable the exchange of experiences and the sharing of successful business strategies.
47. Collaborate through public-private partnerships (PPPs) to support the development of digital platforms and technology adoption in the informal sector. Innovators and tech giants are significant in supporting the government's goals, as this partnership could help in achieving the digital economy goals by bringing in expertise and resources to support the development of such initiatives and offer training.

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Annex 2.1: Classification of the functions of government

First-level	Second level
General public services	Executive and legislative organs, financial and fiscal affairs, external affairs
	Foreign economic aid
	General services
	Basic research
	R&D general public services
	General public services n.e.c
	Public debt transactions.
	Transfers of a general character between different levels of government.
Defence	Military defence
	Civil defence
	Foreign military aid
	R&D defence
	Defence n.e.c
Public order and safety	Police services
	Fire-protection services
	Law courts
	Prisons
	R&D public order and safety
	Public order and safety n.e.c
Economic affairs	General economic, commercial, and labour affairs
	Agriculture, forestry, fishing and hunting
	Fuel and energy
	Mining, manufacturing, and construction
	Transport
	Communication
	Other industrie
	R&D economic affairs
	Economic affairs n.e.c
Environmental protection	Waste management
	Wastewater management
	Pollution abatement
	Protection of biodiversity and landscape
	R&D environmental protection.
	Environmental protection n.e.c
Housing and community amenities	Housing development.
	Community development
	Water supply

	Street lighting
	R&D housing and community amenities
	Housing and community amenities n.e.c
Health	Medical products, appliances and equipment
	Outpatient services
	Hospital services
	Public health services
	R&D health
	Health n.e.c
Recreation, culture and religion	Recreational and sporting services
	Cultural services
	Broadcasting and publishing services
	Religious and other community services
	R&D recreation, culture, and religion
	Recreation, culture, and religion n.e.c
Education	Pre-primary and primary education
	Secondary education
	Post-secondary non-tertiary education
	Tertiary education
	Education not definable by level
	Subsidiary services to education
	R&D education
	Education n.e.c
Social protection	Sickness and disability
	Old age
	Survivors
	Family and children
	Unemployment
	Housing
	Social exclusion n.e.c
	R&D social protection
	Social protection n.e.c

Source: Organization for Economic Co-operation and Development – OECD (2011)

Note: n.e.c.: “Not elsewhere classified”.

Annex 3.1: Macroeconomic projections by other institutions

	2023	2024	2025	2026
GDP growth rate projections				
National Treasury (BROP 2023)	5.5	5.7	6.0	6.2
Budget Policy Statement 2023	5.5	6.2	6.1	6.2
Central Bank of Kenya	5.5	6.0	-	-
African Development Bank – AfDB (AEO)	5.6	6.0	-	-
International Monetary Fund – IMF (WEO)	5.0	5.3	-	-
NCBA Bank Kenya Macroeconomic Outlook 2023	4.9	5.1	-	-
Inflation				
AfDB (AEO)	8.6	5.9	-	-
IMF (WEO)	7.7	6.6	-	-
Current account balance as per cent of GDP				
AfDB (AEO 2023)	-5.2	-5.0	-	-
IMF WEO (2023)/ SSA Outlook (2023)	-4.9	-4.9	-	-

Annex 5.1: Legal frameworks for consumer protection

Category	Implementing agency	Act	Purpose
Regulatory Agencies	1. Kenya Bureau of Standards (KEBs)	Standards Act of 2013	To arrange and provide facilities for the examination and testing of commodities, materials, or substances related to their manufacturing, production, processing, or treatment
	2. Pharmacy and Poisons Board	Pharmacy and Poisons Board Act Chapter 244 Revised 2018	To prohibit misleading advertisements, advertisements related to abortion, and certain diseases. It provides for offenses, penalties, and inspection of licenses and books
	3. National Environment Management Authority (NEMA)	Environmental Management and Coordination Act amended in 2016	To establish a legal and institutional framework for environmental management, ensuring a clean and healthy environment through pollution prevention. It protects consumers from various environmental hazards attributed to the manufacturing of goods
	4. Pest Control Products Board	Pest Control Products Act Cap 346	To regulate the importation, exportation, manufacture, distribution, and use of pest control products
	5. Agriculture Food Authority (AFA)	Agricultural and Food Authority Act of 2013	To promote best practices in the agricultural and aquatic value chain. It protects consumers against contaminated food products

Category	Implementing agency	Act	Purpose	
	6. Kenya Plant Health Inspectorate Service (KEPHIS)	Kenya Plant Health Inspectorate Service Act of 2012	To support the administration and enforcement of food safety measures. Safeguards the economy, environment, and human health by assuring the quality of agricultural products to prevent adverse impacts on consumers	
	7. Kenya Consumer Protection Advisory Committee (KECOPAC)	Consumer Protection Act, 2012	To undertake or commission studies or research for consumer protection and publish National and County Consumer Protection Annual Reports	
	8. Weights and Measures	Weights and Measures Act of 2012	To regulate the use, manufacture, and sale of weights and measures and provide an international system of units (SI) and ensure fair trade practices	
Health and Safety	1. Competition Authority of Kenya	Competition Act of 2009	To prevent unfair and misleading market practices to protect consumers	
	2. Kenya Dairy Board	Dairy Industry Act 1958; Revised 2012	To improve and control the dairy industry and its products	
	3. Ministry of Health	Public Health Act of 2012	To protect public health by laying rules on food hygiene, protection of foodstuffs, keeping of animals, and protection of water supplies	
	4. Kenya Agricultural and Livestock Research Organization (KALRO)	Kenya Agricultural and Livestock Research Act of 2013	To provide an administrative framework for agricultural research and promote coordination. It regulates, monitors, and ensures that all agricultural research conducted by institutes and individuals aligns with national priorities, ensuring that products reaching consumers meet set standards	
	5. Horticultural Crops Directorate (HCD)	Agricultural Act chapter 318	To coordinate, promote, and develop the production and marketing of horticulture products. It upholds fair trade practices and ensures that consumers are protected from fraudulent activities in the horticulture sector	
	6. Government Chemists Department		The Food Drugs and Chemical Substances Act Cap 254	To prevent adulteration of food, drugs and chemical substances and for matters incidental and connected thereof
			The Liquor Licensing Act Cap 121.	To make provision for regulating the sale and supply of liquor and for matters incidental thereto and connected therewith
The Alcoholic Drinks Control Act of 2010			To provide for the regulation of production, sale, and consumption of alcohol drinks. To protect the consumers of alcohol drinks of deceptive inducement and inform them of the risk of excessive consumption of alcoholic drinks	
7. National Public Health Laboratories	Food Drugs and Chemical Substances Act cap 254 (Revised 2012)	Prevent adulteration of food, drugs, and chemical substances		

Category	Implementing agency	Act	Purpose
	8. KEMRI Science and Technology (Amendment) Act, 1979	Science and Technology (Amendment) Act, 1979	Conducts research to address healthcare needs, develops products, and provide services based on scientific findings. The research contributes to improving human health and quality of life, aligning with the goal of protecting consumers
	9. Pharmacy and Poisons Board	Pharmacy and Poisons Act Cap 244, Pharmacy and Poisons Act Cap 244 (Revised 2012)	Regulates the practice of pharmacy, ensuring that pharmaceutical products are handled by qualified personnel through licensed outlets, thus prevent the distribution of unsafe medicines while protecting consumers from potential harm
	10. Department of Veterinary Services	Meat Control Act Cap 356 Animal Diseases Act	To enable control and exercise over meat and meat products for human consumption and over slaughterhouse and places where meat is processed. To provide for import and export control over such meat and meat products
Biosafety	National Biosafety Authority	Biosafety Act, 2009. The Biosafety (Labeling Regulations,2012)	To ensure that consumers are made aware that food, feed, or product is genetically modified so that they can make informed choices. To facilitate the traceability of genetically modified organism products to assist in the implementation of appropriate risk management measures where necessary
Standards and Communication	1. Weights and Measures Department	Weights and Measures Act of 2012	Regulate the use, manufacture, and sale of weights and measures, providing international units (SI)
	2. Communication Authority of Kenya	Kenya Information and Communications Act of 2013	Protect the interests of telecommunication and postal service users
	3. Kenya Films and Classification Board	Films and Stage Plays Act Cap 222 of 1962	Regulate the creation, broadcasting, possession, distribution, and exhibition of films and broadcast content to promote national values and protect children
	4. Kenya Revenue Authority	Kenya Revenue Authority Act No. 2 of 1995 Revised 2018	Provide clear regulations on procedural aspects and provisions related to income, value added tax, and excise duty
	5. Ministry of Information, Communications and the Digital Economy	Presidential Executive Order No. 1 of 2016	Formulate policies and laws to regulate standards and services in the ICT sector, telcos, and the media

Annex 5.2: Descriptive statistics of the firms that export vs those that sell locally

Variable	Local market	Export market	Variable	Local market	Export Market
Employees	111.47	221.5	Age Business	18.91	35.08
LogEmployees	3.65	5.6	Share HighSch And Higher	81.83	85.33
LogSales	17.36	19.28	Research_dev2	1,206,578.95	9,430,257.43
LogCapital	15.58	15.88	Number HighlySkilled	9.64	40.52
logIntermediateInputs	16.51	17.94	Share Highly Skilled	26.6	20.86
CapitalIntensity	198,609.47	598,885.49	Loan	0.95	0.93
BusinessCategory	1.45	2.27	TFP	-0.412	0.314

Annex 5.3: Determinants of TFP for exporting firms

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=====
Dependent variable:
-----
tfp1
-----
log(Capital Intensity)    -0.077 (0.066)
BusinessCategory1        0.443 (1.321)
BusinessCategory2        1.000 (1.322)
BusinessCategory3        1.322 (1.303)
Age Business              0.016(0.008) **
High School and Higher institutions of leaning  0.005 (0.006)
Research_dev              0.276(0.314)
Training                  -0.302(0.309)
ShareHighlySkilled       -0.007 (0.007)
Loan1                     0.409(0.518)
Constant                  -1.384 (1.699)
-----
Observations  86
R2            0.185
Adjusted R2   0.076
Residual Std. Error  1.264 (df = 75)
F Statistic  1.700* (df = 10; 75)
=====
Note: *p<0.1; **p<0.05; ***p<0.01
    
```

Annex 5.4: The factors identified to affect trade participation.

Using the World Enterprise Survey (2018) dataset, several drivers of GVC participation were estimated using Tobit model. The results reveal that the positive and significant coefficients for large firms across all models imply that, compared to small firms, large firms tend to have higher GVC participation. The positive relationship between log of productivity and the GVC index remains consistent in all models, indicating that firms with higher

productivity levels are more likely to participate in global value chains and vice versa. The study also examines productivity as another driver of Global Value Chain (GVC) participation. This aspect has received extensive attention in the theory of heterogeneous firms, as evidenced by notable literature such as Antràs, Fort and Tintelnot (2017). Consistent with existing research, productivity demonstrates a positive correlation with GVC participation, as indicated by the coefficients derived for the three modes of GVC.

Annex 5.5: Estimated results for the drivers of GVC participation

	Model (1)	Model (2)	Model (3)
	GVC index	Backward linkage	Forward Linkage
Firm size			
Medium	-0.276	-2.858	12.31 [*]
	(-0.11)	(-0.53)	(1.93)
Large	7.177 ^{**}	14.62 ^{**}	23.10 ^{***}
	(2.27)	(2.25)	(3.10)
Lnproductivity	3.944 ^{***}	7.479 ^{***}	5.287 ^{***}
	(5.41)	(4.93)	(3.05)
Firm ownership			
% Owned domestically	0.112	0.362	-0.274
	(0.76)	(1.12)	(-0.88)
% Owned by foreigners	0.262 [*]	0.794 ^{***}	-0.259
	(1.77)	(2.95)	(-1.08)
Innovation			
Patent	6.321	0.383	15.01
	(1.27)	(0.04)	(1.33)
	-6.120	-13.95	-3.936
Trademark	(-1.12)	(-1.26)	(-0.31)
Industrial design	1.488	-4.796	8.403
	(0.47)	(-0.74)	(1.13)
Research & Development expenditure	9.588 ^{***}	17.38 ^{***}	16.38 ^{**}
	(3.27)	(2.86)	(2.48)
Internationally Recognized Quality Certification	22.21 ^{***}	0.605	61.96 ^{***}
	(7.80)	(0.10)	(9.65)

Obstacles to financial access			
Minor obstacle	-5.829 [*]	-9.488	-7.698
	(-1.87)	(-1.47)	(-1.02)
Moderate obstacle	4.112	3.310	13.82
	(1.27)	(0.50)	(1.81)
Major obstacle	-1.389	-0.665	1.939
	(-0.40)	(-0.09)	(0.24)
Very severe obstacle	7.129	-24.79 [*]	8.912
	(1.13)	(-1.96)	(0.60)
var(e.GVC index)	890.7 ^{***}	3459.5 ^{***}	3634.3 ^{***}
	(14.15)	(12.27)	(9.95)
Observations	839	839	839
<i>t</i> statistics in parentheses			
[*] $p < 0.1$, ^{**} $p < 0.05$, ^{***} $p < 0.01$			

Annex 7.1: Out of school learners using NER level by county, 2020

County	Primary School Level	Secondary School Level
National	21.9	45.9
Baringo	21.7	47.8
Elgeyo Marakwet	8.4	38.3
Embu	12.9	24.1
Garissa	73.3	90.1
Homa Bay	11.2	35.3
Isiolo	62.9	79.6
Kajiado	37.9	62.7
Kiambu	27.5	36.0
Kilifi	21.2	69.1
Kitui	2.0	46.9
Kwale	21.0	73.5
Laikipia	19.8	40.7
Lamu	16.3	64.6
Machakos	12.8	30.2
Makueni	2.9	18.8
Mandera	64.2	88.6
Marsabit	61.1	87.9
Meru	18.3	38.1
Migori	9.7	36.4
Nakuru	14.6	40.8
Narok	28.5	66.5

Nyeri	11.7	8.4
Samburu	56.0	70.0
Taita Taveta	11.3	32.0
Tana River	51.9	81.1
Tharaka Nithi	0.1	3.0
Turkana	47.0	83.3
Wajir	75.4	85.5
West Pokot	13.6	47.7
ASAL Counties	28.1	52.7
Bomet	14.2	21.6
Bungoma	13.3	37.8
Busia	18.8	57.4
Kakamega	3.1	41.7
Kericho	1.3	24.6
Kirinyaga	10.3	19.2
Kisii	14.3	17.0
Kisumu	-1.6	39.2
Mombasa	32.6	68.1
Murang'a	5.6	0.0
Nairobi City	38.2	71.2
Nandi	5.0	40.5
Nyamira	7.6	21.4
Nyandarua	12	24.9
Siaya	17.8	28.6
Trans Nzoia	10.7	37.2
Uasin Gishu	22.7	55.7
Vihiga	5.9	22.4
Non-ASAL	12.9	34.9

Data Source: Ministry of Education (2020), Basic Education Statistical Booklet

Annex 7.2: Net enrolment rate at primary education level by county, 2020

County	Primary School Level	Secondary School Level
National	78.1	54.1
Garissa	26.7	9.9
Mandera	35.8	11.4
Marsabit	38.9	12.1
Wajir	24.6	14.5
Turkana	53.0	16.7
Tana River	48.1	18.9
Isiolo	37.1	20.4

Kwale	79.0	26.5
Nairobi City	61.8	28.8
Samburu	44.0	30.0
Kilifi	78.8	30.9
Mombasa	67.4	31.9
Narok	71.5	33.5
Lamu	83.7	35.4
Kajiado	62.1	37.3
Busia	81.2	42.6
Uasin Gishu	77.3	44.3
Baringo	78.3	52.2
West Pokot	86.4	52.3
Kitui	98.0	53.1
Kakamega	96.9	58.3
Nakuru	85.4	59.2
Laikipia	80.2	59.3
Nandi	95.0	59.5
Kisumu	101.6	60.8
Elgeyo Marakwet	91.6	61.7
Meru	81.7	61.9
Bungoma	86.7	62.2
Trans Nzoia	89.3	62.8
Migori	90.3	63.6
Kiambu	72.5	64.0
Homa Bay	88.8	64.7
Taita Taveta	88.7	68.0
Machakos	87.2	69.8
Siaya	82.2	71.4
Nyandarua	88.0	75.1
Kericho	98.7	75.4
Embu	87.1	75.9
Vihiga	94.1	77.6
Bomet	85.8	78.4
Nyamira	92.4	78.6
Kirinyaga	89.7	80.8
Makueni	97.1	81.2
Kisii	85.7	83.0
Nyeri	88.3	91.6
Tharaka Nithi	99.9	97.0
Murang'a	94.4	101.9

Data Source: Ministry of Education (2020), Basic Education Statistical Booklet

Annex 7.3: Gender Parity Index at all levels of basic education by county, 2020

County	Pre-primary	Primary	Secondary
National	0.97	0.96	1.01
Mandera	0.66	0.60	0.54
Wajir	0.80	0.77	0.58
Turkana	0.94	0.90	0.62
Garissa	0.81	0.73	0.68
Samburu	0.90	0.90	0.74
Narok	0.98	0.95	0.82
Tana River	0.90	0.97	0.83
Lamu	0.93	0.96	0.87
West Pokot	1.00	0.98	0.90
Homa Bay	1.00	0.97	0.90
Kilifi	0.98	0.97	0.92
Mombasa	0.99	1.02	0.95
Marsabit	1.03	0.97	0.96
Trans Nzoia	0.99	0.97	0.97
Siaya	0.99	0.99	0.97
Migori	1.01	0.99	0.97
Kisii	1.00	1.00	0.97
Nyamira	1.00	0.96	0.97
Isiolo	1.05	1.08	0.98
Embu	0.95	0.96	0.99
Bomet	0.97	0.95	0.99
Nyeri	0.96	0.96	1.00
Kericho	0.98	0.95	1.00
Taita Taveta	1.01	0.96	1.01
Baringo	0.96	0.94	1.01
Laikipia	0.97	0.95	1.02
Murang'a	1.01	0.98	1.03
Nandi	0.99	0.94	1.03
Kajiado	0.94	0.97	1.03
Makueni	0.96	0.94	1.04
Nakuru	0.99	0.97	1.04
Nairobi City	1.01	1.01	1.04
Nyandarua	0.95	0.94	1.05
Kiambu	0.99	0.98	1.05
Bungoma	0.98	0.98	1.06
Kwale	0.97	0.97	1.07
Kakamega	1.00	0.99	1.07
Tharaka Nithi	1.00	0.97	1.08
Uasin Gishu	0.99	0.96	1.08
Busia	1.03	0.99	1.09

Kitui	0.97	0.95	1.10
Kirinyaga	0.94	0.95	1.10
Kisumu	1.01	0.99	1.10
Meru	0.98	0.98	1.11
Machakos	0.97	0.94	1.11
Elgeyo Marakwet	0.98	0.96	1.12
Vihiga	1.00	0.98	1.20

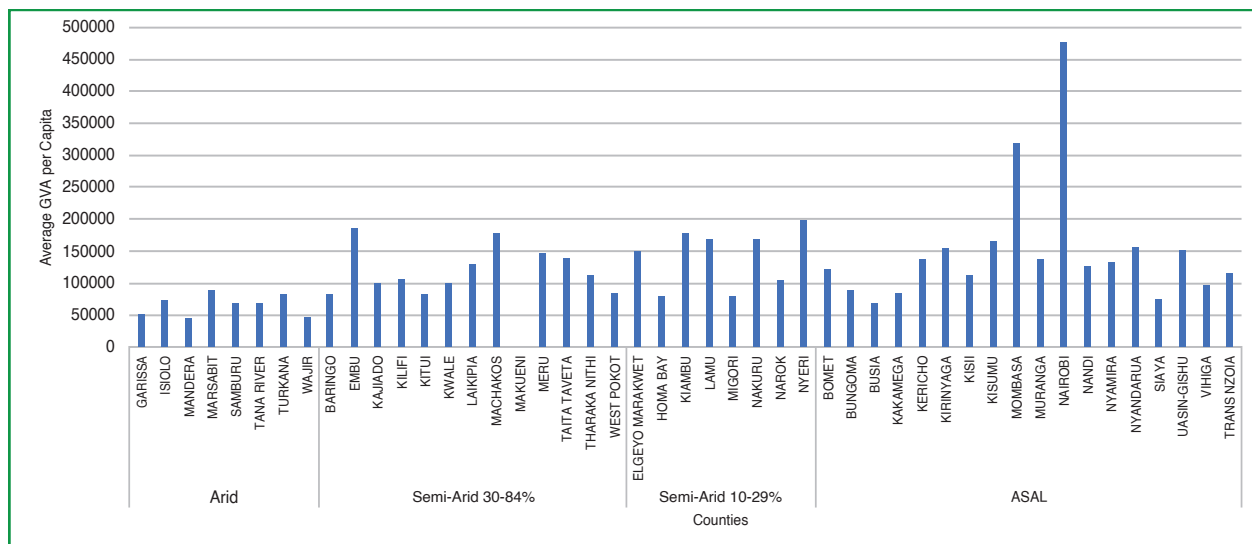
Data Source: Ministry of Education (2020), Basic Education Statistical Booklet

Annex 8.4: Classification of counties by level of aridity

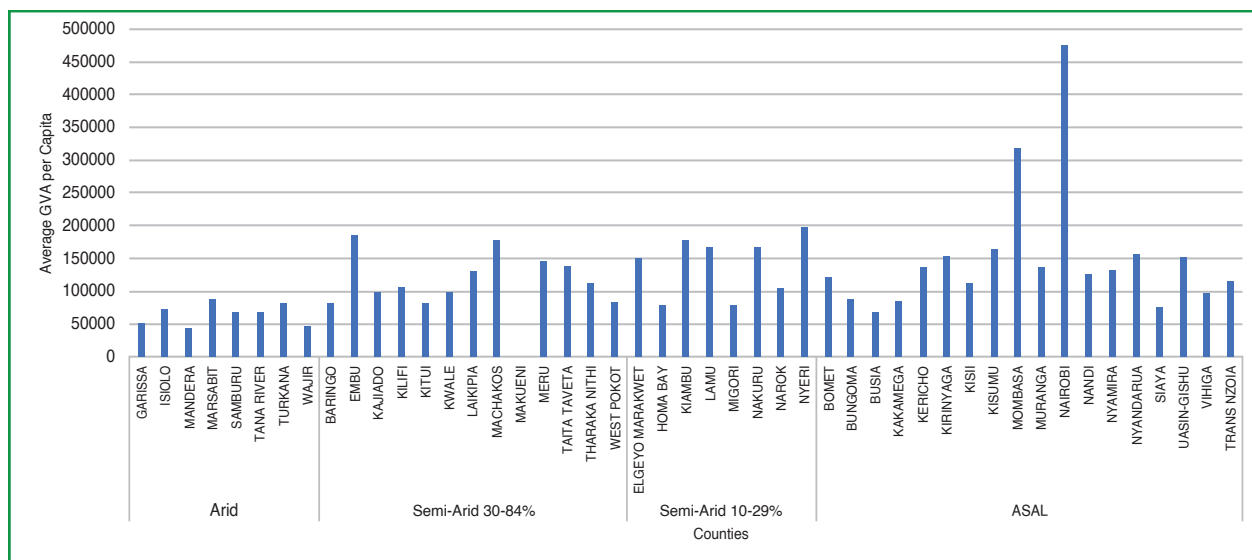
Arid Counties (85 -100%)	Semi-Arid Counties (30-84%)	Semi-Arid Counties (10-29%)	Non-ASAL counties (Less than 10%)
Wajir	Tharaka Nithi	Lamu	Siaya
Marsabit	West Pokot	Homa Bay	Trans Nzoia
Garissa	Meru	Migori	Nyamira
Samburu	Baringo	Narok,	Kirinyaga
Turkana	Kilifi	Elgeyo Marakwet	Busia
Mandera	Taita Taveta	Nyeri	Bomet
Isiolo	Kajiado	Kiambu	Kisii
Tana River	Kwale	Nakuru	Kericho
	Laikipia		Nyandarua
	Embu		Murang'a
	Machakos		Bungoma
	Makueni		Vihiga
			Nandi
			Uasin Gishu
			Nairobi
			Kisumu
			Kakamega
			Mombasa

Data source: State Department for the ASALS and Regional Development

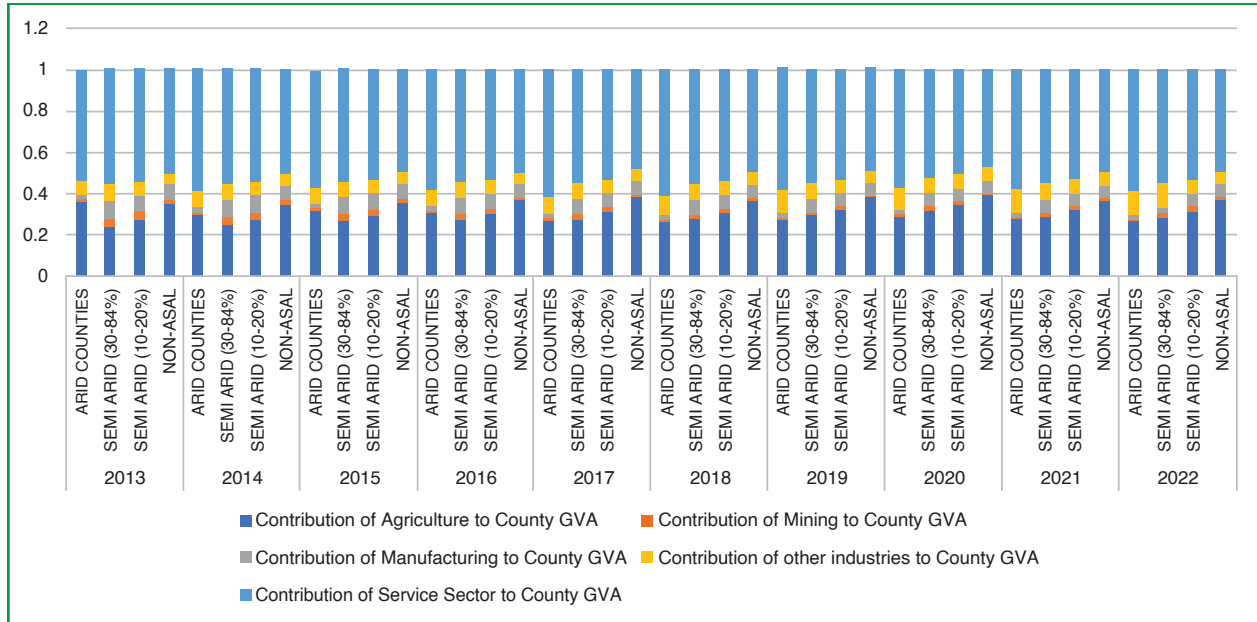
Annex 8.2: Average GVA per county (millions)



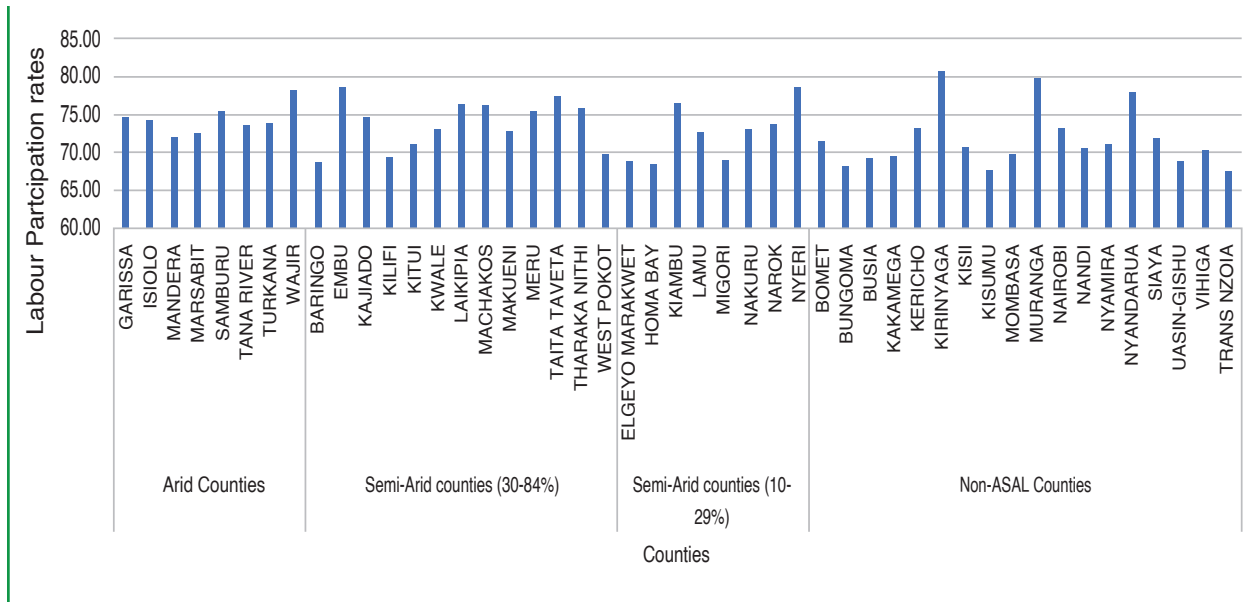
Annex 8.3: Average GVA per capita



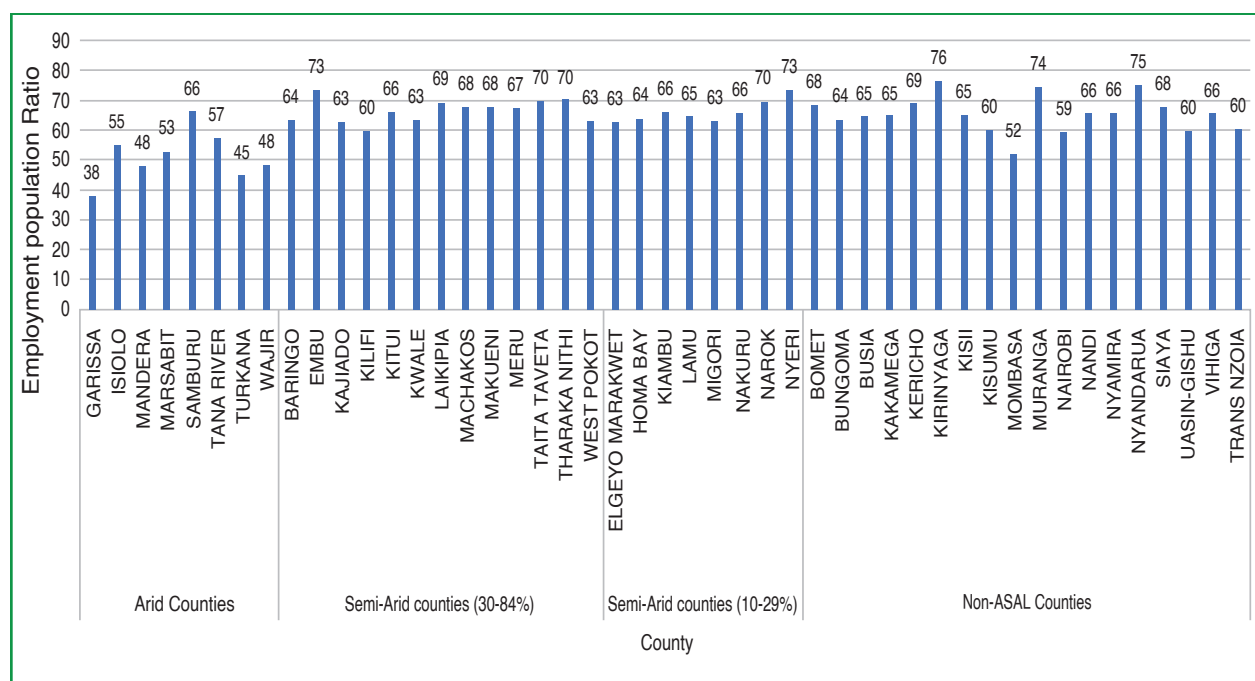
Annex 8.4: Contribution of broad sectors to county GVA



Annex 8.5: Labour participation rates by county

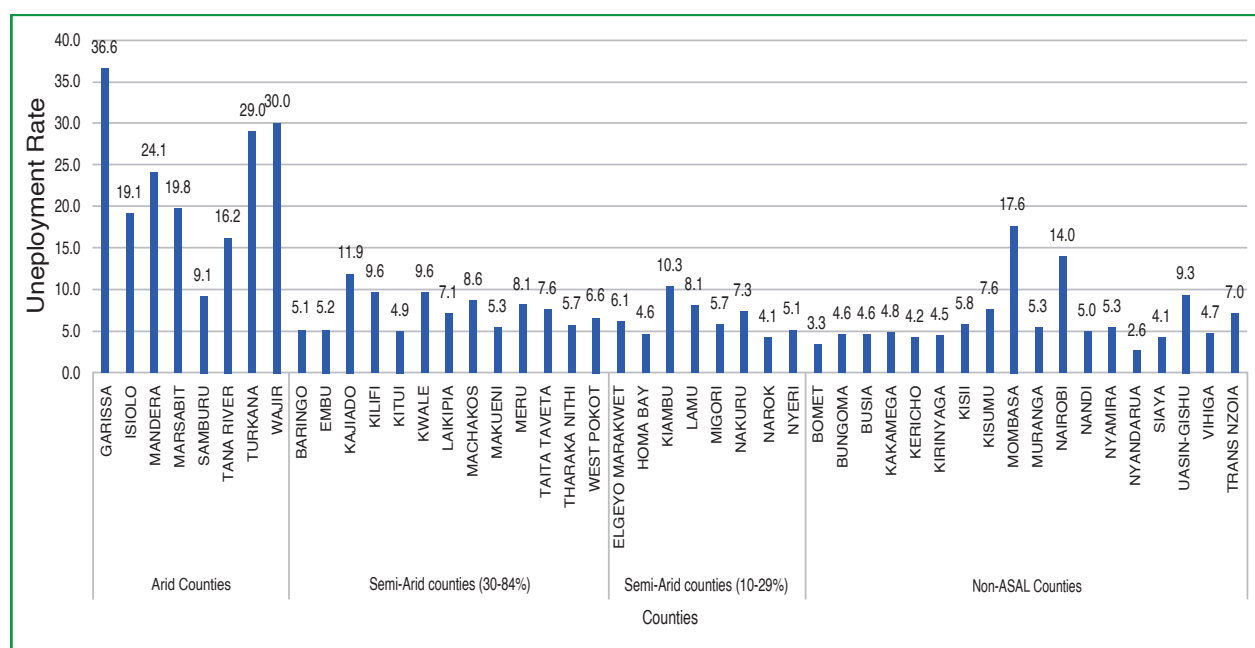


Annex 8.6: Employment to population ratio by counties



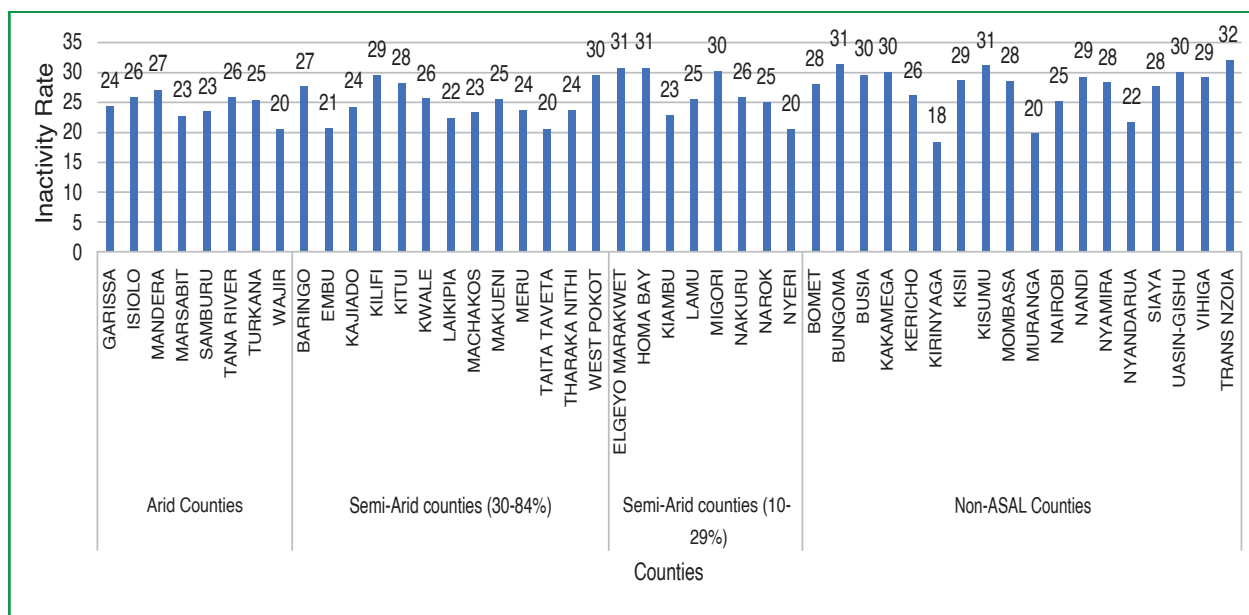
Data source: KNBS (2019), Census

Annex 8.7: Unemployment rate by county

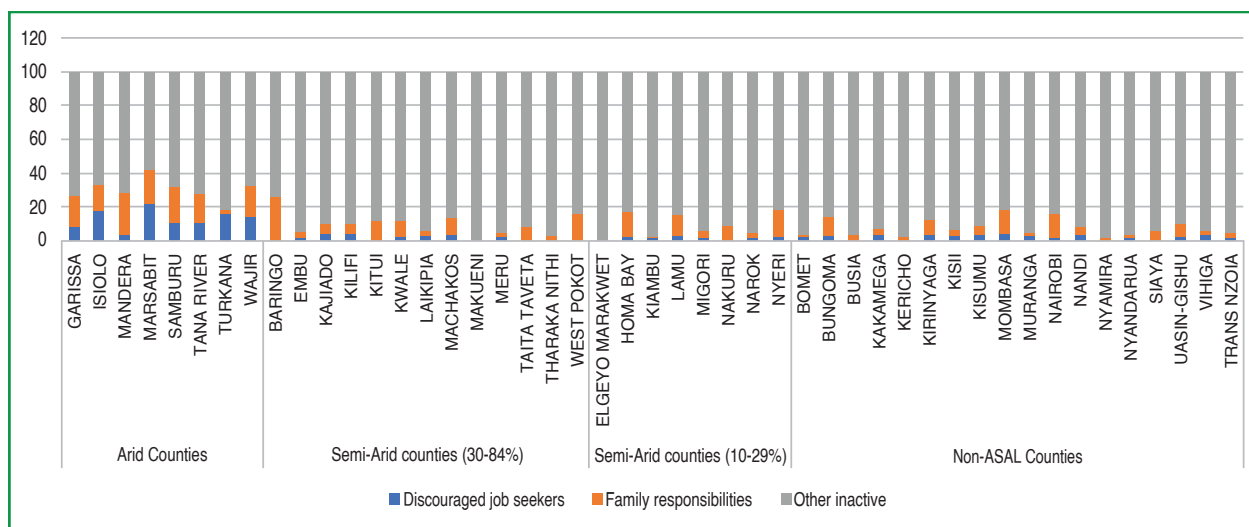


Data Source: KNBS (2019), Census

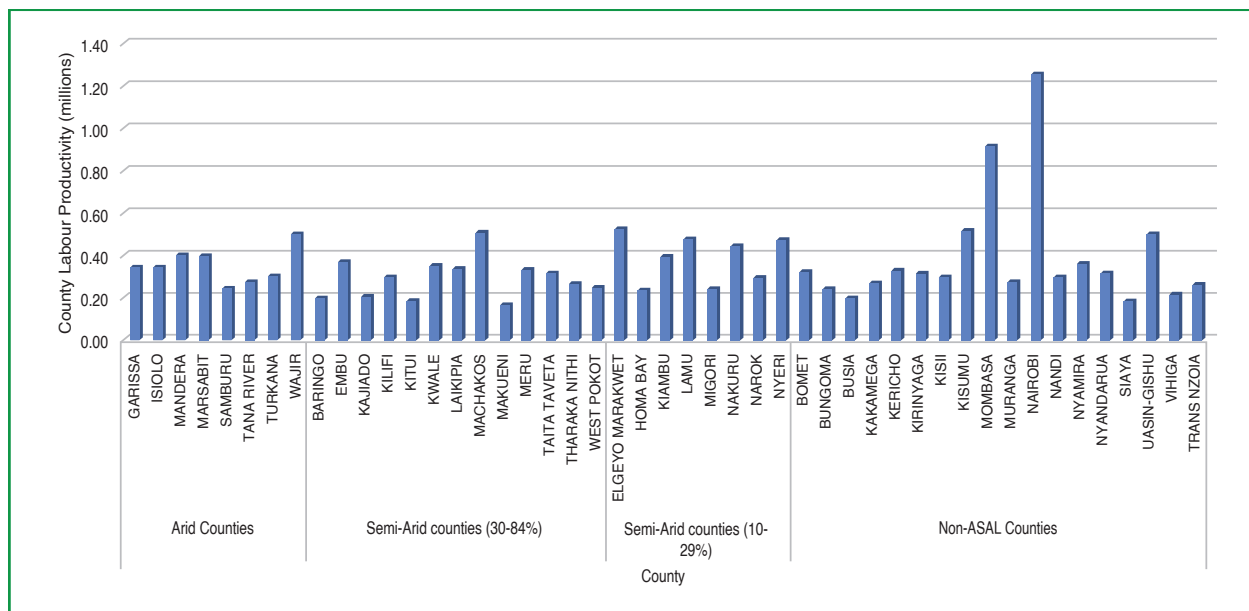
Annex 8.8: County labour inactivity rates



Annex 8.9: Reasons for inactivity by county

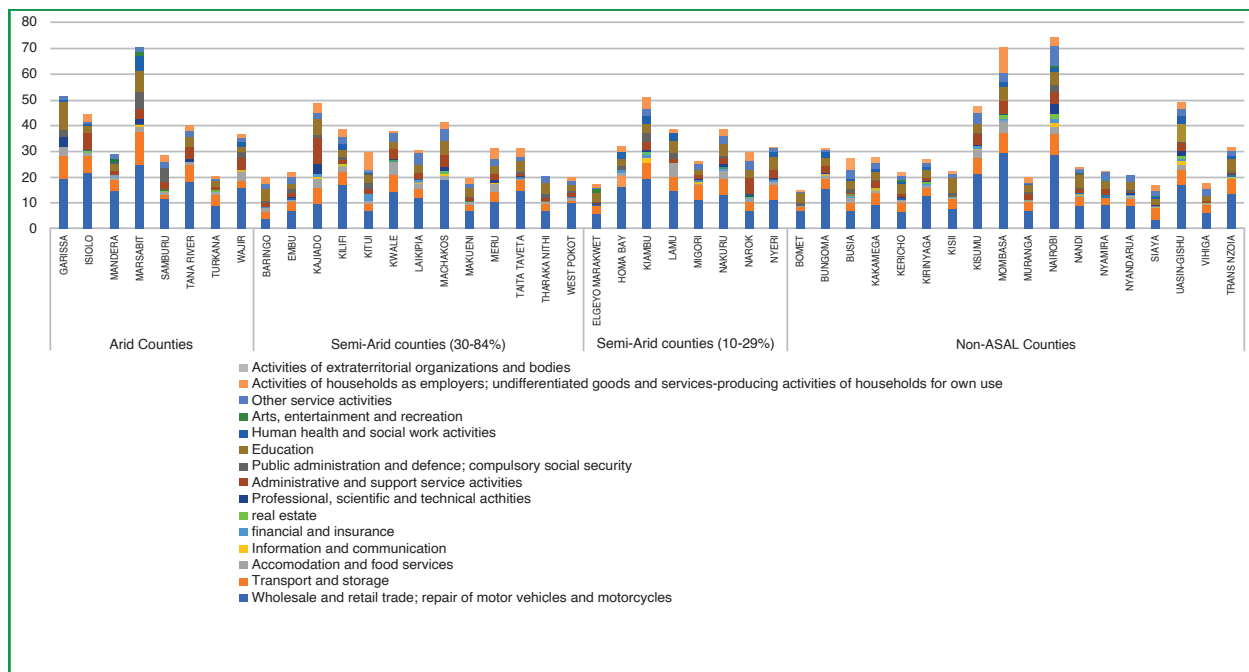


Annex 8.10: County labour productivity 2021



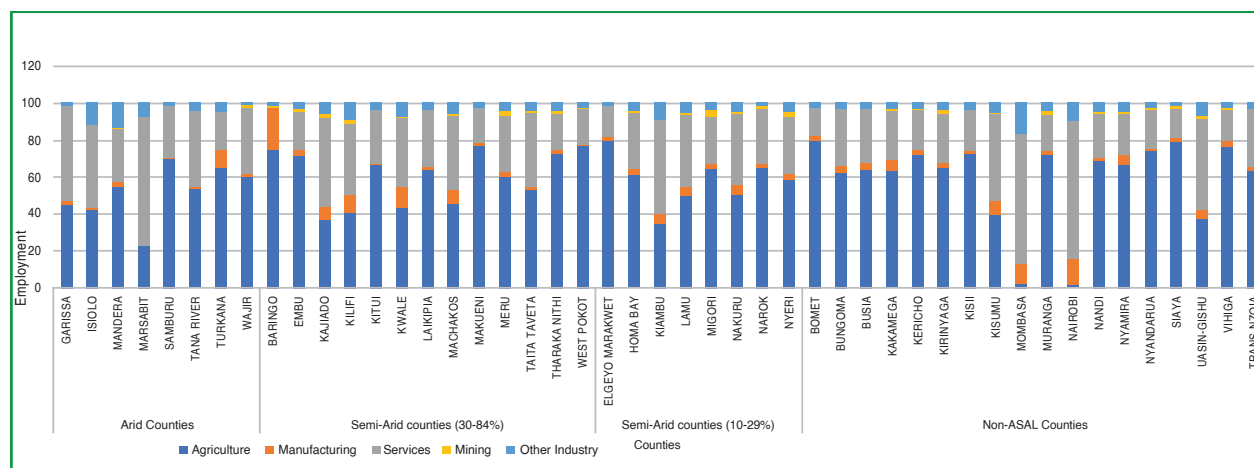
Data: Author’s computation using KNBS Kenya Continuous Household Survey 2021 and KNBS 2023 GCP data

Annex 8.11: Employment in the services sector by county



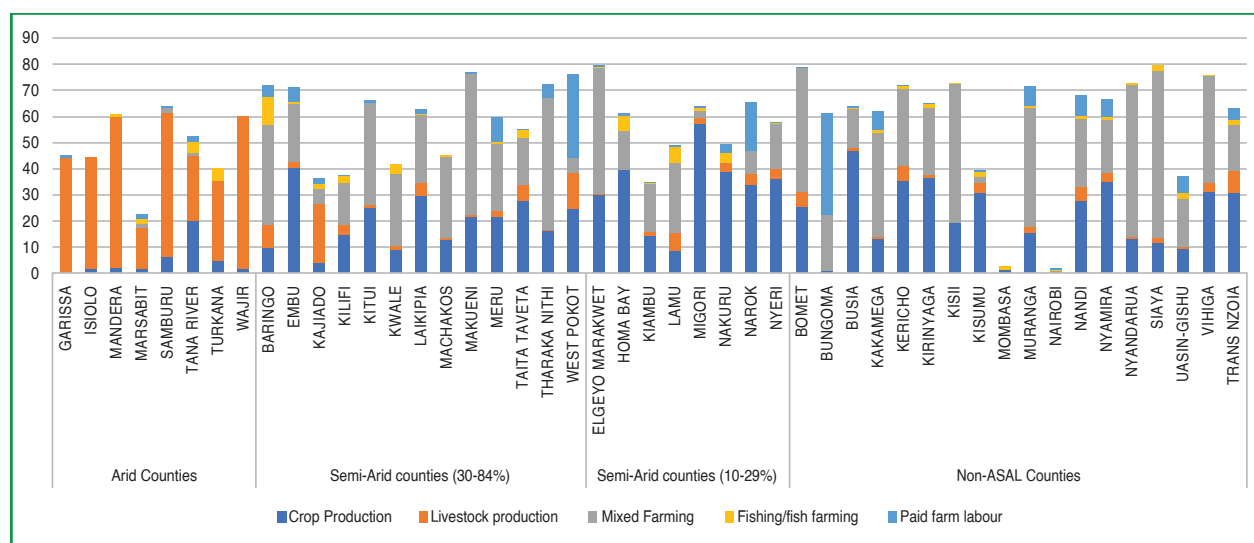
Data: Author’s computation using KNBS Kenya Continuous Household Survey 2021

Annex 8.12: Employment per county by broad sectors



Data source: KNBS Kenya Continuous Household Survey 2021

Annex 8.13: Employment in agriculture sub-sectors by county category



Data: Author's computation using KNBS Kenya Continuous Household Survey 2021

¹ <https://www.worldbank.org/en/data/datatopics/cpia/cluster/public-sector-management-and-institutions>

² <https://www.icta.go.ke/news?node=296&type=news>

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