

Socio-Economic Status of Embu County with COVID-19

Eldah Onsomu, Rose Ngugi, Evelyne Kihui, Mutuku Muleli, James Gachanja, Rogers Musamali, Paul Lutta, Daniel Omany, Hellen Chemnyongoi, Shadrack Mwatu, Nahashon Mwongera, Paul Odhiambo, Beverly Musili, Violet Nyabaro, Japheth Kathenge, Haron Ngeno and Elton Khaemba



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**Kenya Institute for Public Policy
Research and Analysis**

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KIPPRA in Brief

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Abbreviations and Acronyms

| | | |
|---------|---|--|
| ADPs | - | Annual Development Plans |
| AFA | - | Agriculture and Food Authority |
| AI | - | Artificial Insemination |
| CIDC | - | Constituency Industrial Development Centres |
| CIDPs | - | County Integrated Development Plans |
| DSA | - | Drug and Substance Abuse |
| FAO | - | Food and Agriculture Organization |
| GBV | - | Gender Based Violence |
| GCP | - | Gross County Product |
| GDP | - | Gross Domestic Product |
| HA | - | Hectares |
| ICTs | - | Information Communication Technologies |
| ICU | - | Intensive Care Unit |
| KCB | - | Kenya Commercial Bank |
| KDHS | - | Kenya Demographic Household Survey |
| KNBS | - | Kenya National Bureau of Statistics |
| KNOCS | - | Kenya National Occupational Classification Standard |
| LREB | - | Lake Region Economic Bloc |
| LVSR | - | Low Volume Sealed Roads |
| M.I.C.E | - | Meetings Incentives Conferences and Exhibitions |
| MSMEs | - | Micro Small and Medium Enterprises |
| MT | - | Metric Tonnes |
| MTPs | - | Medium Term Plans |
| NGOs | - | Non-Governmental Organizations |
| OSR | - | Own Source Revenue |
| PFM | - | Public Finance Management |
| PPEs | - | Personal Protective Equipment |
| RAI | - | Rural Access Index |
| SDGs | - | Sustainable Development Goals |
| TVET | - | Technical and Vocational Educational and Training |
| UNICEF | - | United Nations International Children's Emergency Fund |
| UN | - | United Nations |
| WASH | - | Water Sanitation and Hygiene |

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Executive Summary

Fiscal Policy

The county's revenues have maintained an increasing trend as the county focused on implementing major development projects to improve the livelihoods of its people. Total county revenues grew from Ksh 3.60 billion in FY 2013/14 to Ksh 6.41 billion in FY 2020/21 with an average annual growth rate of 6.8 per cent. The increase was supported by the growth in equitable share from the National Government and conditional grants from development partners over the same period. Conditional grants continue to be a major source of financing County operations. The County receives conditional grants from the National Government and Development Partners mainly from World Bank and Danish International Development Agency (DANIDA), European Union (EU) and Sweden. Pending bills in Embu County generally follow an upward trend increasing from Ksh. 596.6 million in 2014/15 to 1,818.7 million in 2019/20. To steer the county towards achieving its budgetary objective and development goals contained in the ADPs and CIDP, the county government needs to mobilize more finances from OSR to increase the available revenues for budgetary operations, seek for more funding in form of grants from development partners to cater for the critical development projects in the county, ensure that the ongoing projects are completed before launching new project and clear any pending bills and arrears owed to suppliers and ensure the ongoing infrastructure project are completed and suppliers paid within the specified timelines for optimal returns to investment and to spur private sector activity.

Agriculture, Livestock and Fisheries

Crops and livestock production account for a significant share of the economic activity of Embu County. Key agricultural value chain commodities in the County include maize, beans, bananas, potatoes, green grams, kales, cassava, khat, coffee, macadamia, mango, cattle, goats, sheep, poultry production and bee keeping (apiculture). Among the socioeconomic effects on the COVID-19 pandemic on the agri-food sector in the County included negative effects on hours worked by workers in agriculture related occupations. An additional effect was a slow down on trade and marketing activities due to the restrictions on movements leading to price shocks and shortages of food items. Agricultural productivity in the County is also affected by variable and extreme weather events, low agro-processing and value addition opportunities, and land fragmentation among other factors. To successfully build resilience and enhance growth of the agriculture sector, the County needs to explore partnerships to develop agro-processing and value addition capacities at the County, invest in sustainable irrigation and water harvesting technologies, enhance access to storage and cooling facilities, and enhance commercialization opportunities among small holder farmers.

Water, Sanitation and Hygiene

Clean water, proper sanitation and good hygiene remains an essential component in protecting human health in times of outbreak of infectious diseases. Frequent and correct hand hygiene has been emphasized by World Health Organization (WHO) as one of the frontline measures to curb transmission of COVID-19. This has placed a higher demand for water use in households, schools, health care facilities, marketplaces, workplaces, and public places. This therefore has necessitated the need for provision of water, sanitation, and hygiene by national and county governments to all. The county faces challenges in revenue collections with COVID-19 has resulted in reduced incomes among households and businesses, thus deferring collection of revenue from the water services. This in the long run could affect the development of the water and sanitation sector. Additionally, COVID-19 poses health challenges to water and sanitation officers if they get infected, they have to be self-isolated, and this may lead to disruption of services. Other constraints to the sector include, drought, water leakages and destruction of water catchment areas. To ensure continuous availability of water, the national and county government to increase water supply in households, institutions, and public places through drilling of boreholes in all the sub-counties. Partner with private sector, donor agencies, local communities, and NGOs to help develop water infrastructure.

Manufacturing, Trade and MSMEs

The momentum in manufacturing, trade and MSMEs was disrupted by the COVID-19 pandemic as the containment measures associated with COVID-19 pandemic took a heavy toll on the sector. The measures that were taken, such as closure of markets, observance of health protocols in form of social distancing and handwashing served to increase the cost of production and affected access to markets for the produce. In sustaining growth in the Manufacturing, Trade and MSMEs sector, the County will develop a land development strategy that safeguards the high potential agricultural land by setting the urban growth limits to preserve the high potential areas and regulate the subdivision of this land, develop urban-based agro-industries in Embu town to focus on proximity to agricultural raw materials and promote agricultural value addition, promote rural development through provision of infrastructure and agricultural sector development and related economic activities, and enhance agricultural production by intensifying the use of the land.

Infrastructure, Housing, and Urban development

The main means of transport used in the County is walking followed by motorbike. The paved County Road network covers 56.09 km, while the paved National roads cover 239.17 km. Out of the total paved road network of 295.26 km, 84.4 per cent is in good condition, 9.7 per cent in fair condition and 4.7 per cent in poor condition. The status of ICT access and use in the county is low, especially among households. The housing tenure is predominantly owner occupied at 73.0 per cent, with 27.0 per cent of the households under rental tenure. The county has challenges in quality of the housing stock. In response to the challenges, it is recommended that the county to improve and expand infrastructure for Non-Motorized Transport (NMT) in urban areas and along roads with heavy -high

speed traffic to promote sustainable mobility options and enhance road safety for all road users, speed up the construction of fiber-optic broadband networks in underdeveloped areas, and avail appropriate building technology for use by the public in house construction and improvement in every sub-county, that responds to local cultural and environmental circumstances.

Tourism

Tourism has a high potential in the Embu County for both local and international tourists. Some of the available sites include caves, waterfalls and rocky hills (Karue, Kianjiru, Kiambere, Ndune, Kirimiri, Maranga, Kiang'ombe) to support hiking; Kamburu and Masinga hydro-electric power dams; Mt Kenya and Mwea National Parks that host various wildlife. To boost tourism, the County to: promote domestic tourism to cushion the economy from impacts of travel advisories and constraints caused by the pandemic on international tourist arrivals; conduct regular maintenance of tourism attraction sites; engage in tourism marketing and promotion; diversify tourism products; open access routes to the tourist sites; sensitize the community on tourist sites in the county; Promotion of eco-tourism, cultural and sports tourism in the 6 main rivers (Tana, Rupingazi, Kii, Ena, Thiba, Thuci) and two hydro-electric dams; and develop tourism infrastructure such as route to Mt Kenya, star-rated hotels, tourist sites, and tented camps.

Health

The County has 157 facilities that comprise of 9 hospitals, 16 health centres and 132 are dispensaries. The government owned 50 per cent of the facilities, 33 per cent of these facilities owned by private and 17 per cent owned by faith-based organizations. However, government indicating increased reliance on public facilities for curative healthcare services owns approximately 56 per cent of the health centres and hospitals. The county has 9 specialists, 60 doctors, 600 nurses and 113 clinical officers. The county therefore has a doctor –Patient ratio of 1:35,000 against WHO recommendation of 1:230. However, these numbers are not adequate to achieve the WHO recommended staff to patient ratio and to serve a county population of 608,599 people (2019 Census). To achieve this, the county government need to employ additional staff to bridge the existing gaps in human resource for health. For a resilient health sector, there is need for more awareness on immunization so that mothers can ensure their children get immunized. Implement a comprehensive human resource health management system including undertaking training needs assessments and information system to ensure skilled and motivated health care workers, equitable deployed across all sub-counties. This is in addition to paying the salaries in time to avoid cases of strikes and low staff morale. Recruit additional of public health officers and community health workers to strengthen preventive and public health systems.

Education and Training

Embu County has a total of 619 pre-primary centres, 552 primary schools. Gross attendance ratio for pre-primary school was 69.5 per cent while that of primary school and secondary

school was 119.0 and 66.0 per cent respectively. The gross attendance ratio for pre-primary school was higher for males, 76.6 per cent, compared to that for females, 60.4 per cent. The gross attendance ratio for primary school was higher for females, 125.6 per cent, compared to that for males, 113.9 per cent. For secondary school, gross attendance ratio was higher for males, 67.8 per cent, compared to that for females, 64.3 per cent. The net attendance ratio for pre-primary, primary and secondary school was 57.0, 94.2 and 44.0 per cent, respectively. The County with support from stakeholders will need to continue to invest in early childhood development through infrastructural development to allow for adequate education access; deployment of ECDE teachers and provision of sanitation facilities. The county would put up measures that encourage learners to complete all levels of education by providing financial or in-kind support, such as school feeding, to help families overcome the increased costs of attending school and provide psychosocial support to teachers and learners during and after the pandemic.

Social Protection

Embu County has a population of 608,599 of which 6.4 per cent are the elderly and 4.4 per cent are people living with disabilities (KNBS, 2019). The overall poverty rates in the county stand at 44 per cent which is higher than the national average (36.1%). Despite being an agricultural county, the county's food poverty levels are at 28 per cent and 28 per cent of the total population is multi-dimensionally poor. Further, about 27 per cent of the children population is stunted. To cushion the citizens, the county has made various safety net programmes. The County targeted to provide cash transfer to 200 households in each sub – county, provide cash transfer to 50 households in each sub – county for poor and severe disabled persons. The County also supported and built capacities of individuals, vulnerable groups and communities for equity and self-reliance through training. With increasing demand for cash transfers, the County government initiated targeted cash transfers to the elderly and food distribution to vulnerable households both before and during COVID-19 period.

Labour participation

Agriculture is the main driver of the economy in Embu County with over 70 per cent of the residents being small scale farmers. Farmers were greatly affected by COVID-19, mainly because of national lockdowns and social distancing policies. The agriculture sector experienced a low traffic on sales and movement of goods, which in turn had an adverse effect on market operations and cash flow for farmers. The export and import restrictions created uncertainty on the crop farming and tourism industry. It will be important for the County to promote appropriate labour market interventions, especially those working in the agricultural sector, and implement policy reforms that drive employment creation. The county to enhance investments and mechanisms for up skilling and reskilling, deepening technical skills as well as ICT skills; and retraining employees on how to work from home, where applicable. The county government to protect workers in the informal economy by pursuing innovative policies and facilitate transition to the formal economy in the longer term.

1. Introduction and Structure of Embu County Economy

1.1 Introduction

Embu County is one of the counties in the Central Region Economic Bloc (CEREB). The county occupies a land area of 2,818 km². The county had an estimated population of 608,599 persons of whom 49.9 per cent were male and 50.0 per cent female (KNBS, 2019) as indicated in table 1. Of the population 23,816 (4.4%) are persons with disabilities. The youth constituted 34.0 per cent of the population of whom 49.0 per cent were female. The county has a population density of 216 per km². About 87.5 per cent of the population live in rural areas of whom 49.9 per cent are female. The older persons (65 year and above) constitute 6.4 per cent of the total population of whom 57.5 per cent were female. The population in school going age group (4-22 years) was 38.9 per cent in 2019.

In 2015/2016, the overall poverty rate in Embu County was 28.0 per cent against the national poverty rate of 36.1 per cent. In addition, 27.9 per cent of the population were living in food poverty and 44.3 per cent were living in multidimensional poverty, that means being deprived in several dimensions including health care, nutrition and adequate food, drinking water, sanitation and hygiene, education, knowledge of health and nutrition, housing and standard of living, and access to information. According to KDHS 2014, 26.8 per cent of the children were stunted as compared to the average national level at 26.0 per cent.

Table 1.1: Development indicators in Embu County

| | County | National |
|---|---------|--------------------------|
| Estimated County Population (KNBS, 2019) | 608,599 | 1.1% of total population |
| Males | 304,208 | 49.9% |
| Females | 304,367 | 50.0% |
| Intersex | 24 | 0.003% |
| Estimated Population Density (km ²) | 216 | 82 |
| Persons with disability | 4.4% | 2.2% |
| Population living in rural areas (%) | 87.5% | 68.8% |
| Children (0-14 years) (per cent) | 34.2% | 41.1% |
| School going age (4-22 years) (%) | 38.9% | 68.7% |
| Youth 15-34 years (%) | 34.0% | 36.1% |

| | | |
|---|---------|-----------------------------|
| Labour force (15-64 years) (%) | 59.1% | 55.0% |
| Elderly population (over 65-year-old) | 6.4% | 3.9% |
| Number of COVID-19 cases (as at 11 th September 2020) (MOH); National cases were 35,232 people | 109 | 0.34% of the national cases |
| Poverty (2015/2016) (%) | 28.0% | 36.1% |
| Food Poverty (2015/2016) (%) | 27.9% | 31.9% |
| Multidimensional Poverty (2015/2016) (%) | 44.3% | 56.1% |
| Stunted children (KDHS 2014) | 26.8% | 26% |
| Gross County Product (Ksh million) 2020 | 153,927 | 1.6% share to total GDP |
| Average growth of nominal GCP (2013-2020) (%) | 87.8% | 104.8% |

Data Source: KNBS (2019)

The age distribution of the county residents as per the 2019 Housing and Population Census is shown in Table 1.2. The bulk of the County's population is in the age group of between 15-34 years comprising of 208,199 individuals. They are followed by persons aged between 6-13 years who are the primary school children comprising of 103,386 of the county population. The under 0-3 age comprise of 49,299 of the county population. This shows that the county has a general youthful population.

Table 1.2: Population distribution for selected age groups in the county (2019)

| Age Group | Male | Female | Total |
|-----------------------------------|---------|---------|---------|
| Under 0-3 | 24,937 | 24,362 | 49,299 |
| Preprimary school age (Under 4-5) | 12,252 | 11,792 | 24,044 |
| Primary School Age (6 -13) | 52,007 | 51,379 | 103,386 |
| Secondary school age (14-17) | 27,609 | 26,512 | 54,121 |
| Youth Population (15-34) | 105,547 | 102,652 | 208,199 |
| Female Reproductive age (15-49) | | 155,889 | 155,889 |
| Labour force (15-64) | 191530 | 187882 | 187,882 |
| Aged Population 65+ | 16,478 | 22,294 | 38,772 |

Data Source: KNBS (2019)

1.2 Level of socio-economic deprivations

In 2015/2016, 27.1 per cent of the population had health insurance cover, 32.7 per cent lived in premises with water, 80.4 per cent lived in their own homes and 74.3 per cent had access to mobile telephone (Table 1.3) and majority of the households (99 per cent) had access to toilet facility. As a result, the multi-dimensional poverty is estimated at 44.3 per cent.

Table 1.3: Level of deprivations for the various indicators for multidimensional poverty in the county

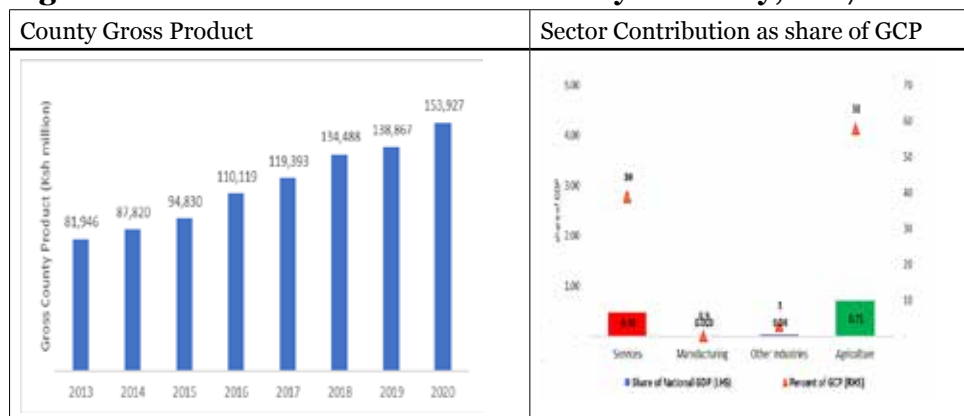
| Indicator | | Percentage Distribution |
|---|--|-------------------------|
| Health care | Population with Health Insurance Cover | 32.7 |
| Drinking water (Time taken to fetch) | Zero (In premises) | 12.3 |
| | less than 30 minutes | 67.6 |
| | 30 minutes or longer | 19.9 |
| Sanitation and Hygiene | Proportion of households with toilet facility | 99.0 |
| | Shared Toilet | 35.8 |
| | Not Shared | 64.2 |
| | Place to wash hands outside toilet facility | 15.4 |
| | No place to wash hands outside toilet facility | 84.4 |
| Education (Population 3 years and Above by School Attendance Status) | Ever Attended | 91.8 |
| | Never Attended | 7.8 |
| Knowledge of health and nutrition (children aged 0-59 months that participated in Community Nutrition Programmes) | Participated in Community Nutrition Programmes | 56.9 |
| | Did not Participated in Community Nutrition Programmes | 43.1 |
| Housing and standard of living (house ownership) | Owner Occupier | 80.4 |
| | Pays Rent/ Lease | 16.5 |
| Access to information (Population Aged 3 years and above by ICT Equipment and Services Used) | Television | 68.4 |
| | Radio | 93.1 |
| | Mobile phone | 74.3 |
| | Computer | 7.8 |
| | Internet | 12.4 |

Source: KIHBS 2015/2016

1.3 Structure of Embu County Economy

Embu County Gross County Product (GCP) accounted for 1.6 per cent of total Gross Domestic Product (GDP) between 2013 and 2020 (figure 1). The GCP increased from Ksh. 81,946 million in 2013 to Ksh. 153,927 million in 2020 representing an average annual growth rate of 12.5 per cent. The service sector contributes 44.0 per cent of GCP while agriculture, manufacturing and other industries sector share constituted 38.4 per cent, 2.33 per cent and 15.0 per cent, respectively. The services sector includes such activities as wholesale and retail trade. Agriculture is mainly dominated by Crop farming (mostly cash crops such as coffee, Tea, Macadamia nuts, Cotton) and Cattle farming (dairy and beef), while industries and manufacturing include small scale production of consumer goods such as plastics, furniture, textiles and food processing (Figure 1.1).

Figure 1.1: Structure of the Embu County economy, 2017



Data Source: KNBS (2019)

1.4 COVID-19 Caseload and Implications of Mobility Restrictions

As of March 2020, Embu County had zero COVID-19 cases. However, by August 2020, the County had reported 4 COVID-19 cases with mobility stringency of 70.4. The caseload would rise to 1,367 by August 2021 with mobility stringency of 56.0. The mobility stringency index is a composite measure rescaled to a value from 0 to 100 (100=strictest) based on nine response mobility indicators. The nine metrics used to calculate the mobility stringency index include school closures, workplace closures, cancellation of public events, restrictions on public gatherings, closure of public transport, stay-at-home requirements, public information campaigns, restrictions on internal movements and international travel controls. An index measure closer to 100 means high incidence or severity of mobility

restrictions. The County mobility stringency index implies the severity of the restrictions was moderate.

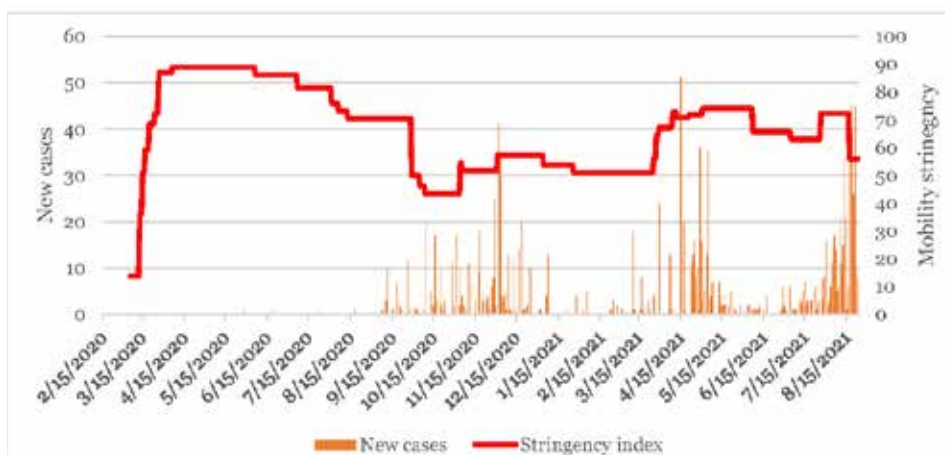
Table 1.4: Total COVID-19 cases and mobility stringency - Embu County

| Date | Total cases | Mobility stringency (0-100) |
|------------------------------|-------------|-----------------------------|
| 13 th March 2020 | 0 | 36.1 |
| 23 rd August 2020 | 4 | 70.4 |
| 23 rd August 2021 | 1,367 | 56.0 |

Data Source: Oxford University

New COVID-19 cases in Embu County were highest between September 2020-January 2021, March 2021-May 2021 and July 2021-August 2021. During the three time-periods, spikes in new cases in the County were preceded by relaxation of COVID-19 mobility restrictions. Reduction in the County's new cases was similarly preceded by tightening of mobility restrictions.

Figure 1.2: New COVID-19 cases in Embu County and the county's Stringency Index



Data Source: Oxford University

Public transport and workplaces have been the most responsive to COVID-19 mobility restrictions in Embu County. The sub-sectors reported the largest shrinkage in activity

when mobility restrictions were tightest but rebounded when mobility restrictions were least stringent. Demand for workspaces has registered sustained recovery after mobility restrictions were vacated in October 2021.

Figure 1.3: Effects of COVID-19 on economic performance in Embu County and the county’s stringency index



Data Source: Oxford University

The broad objective of the report is to analyze the socioeconomic effects of COVID-19 across sectors and propose interventions for mitigating the effects. The report is organized as follows. Chapter 2 focuses on fiscal policy; Chapter 3 focuses on agriculture, livestock and fisheries; chapter 4 focuses on water sanitation and hygiene; chapter 5 focuses on manufacturing, trade and MSEs; chapter 6 focuses on transport and information and communication technology; chapter 7 focuses on urban development; chapter 8 focuses on

tourism, chapter 9 focuses on health; chapter 10 focuses on education and training; chapter 11 focuses on social protection; chapter 12 focuses on human resources and chapter 13 concludes the report.

2 Fiscal Policy

County revenue analysis

Availability of financial resources is critical in implementing county operations. Timely and adequate funding aid in successful implementation of the county's projects. The County's main revenue sources comprise of the transfers from the National Government, Conditional Grants and its own source revenue (OSR).

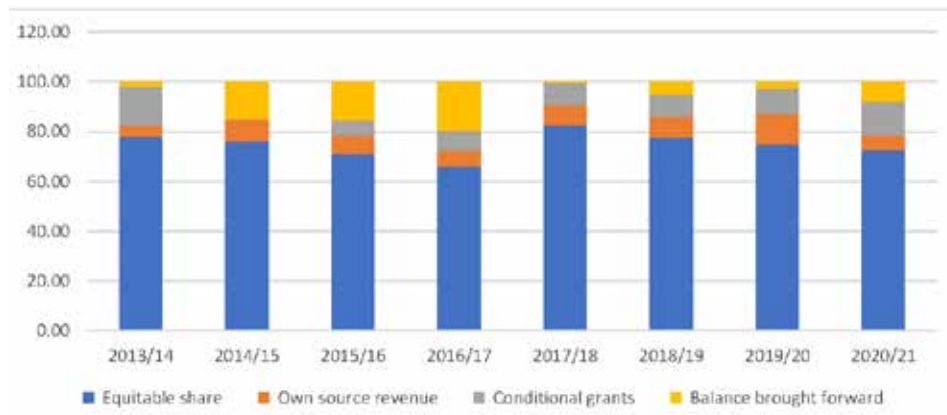
Transfers from National Government

The county revenues maintained an increasing trend as the county focused on implementing major development projects to improve the livelihoods of its people. Total county revenues increased from Ksh 3.60 billion in 2013/14 to Ksh 6.41 billion in 2020/21. The increase was supported by the growth in equitable share from the National Government and conditional grants from development partners over the same period. The amount realized in 2020/21 was 90.2 per cent of the annual budget allocation of Ksh 7.11 billion. The performance was an improvement from the 84.2 per cent target attained in 2019/20. This was supported by the 100 per cent disbursement of equitable shares and conditional grants from development partners.

Analysis of the sources of county revenues indicate that equitable share from the National government contributed the largest share of the total revenues (figure 2.1). On average, it contributed 74.96 per cent of the total revenues between 2013/14 and 2020/21. Equitable share grew by 66 per cent from Ksh 2.81 billion in 2013/14 to Ksh 4.67 billion in 2020/21. The amount received in 2020/21 accounted for 100 per cent of the annual budget allocation,

an improvement from 91.4 per cent attained in 2019/20. This implied that the County received all expected amount from the National Government to finance its operations, underscoring its commitment to support county operations through timely financing.

Figure 2.1: Share of county revenues by source



Data Source: Office of the Controller of Budget (Various reports)

Monthly cash transfers from the National government have maintained an increasing trend from January to June over the years as shown in table 2.1. A similar trend was observed in 2020 with the transfers growing by 80.69 per cent from Ksh 2.6 billion in January to Ksh 4.7 billion in June. In comparison to 2019, the total amount transferred to Embu County in March, April, May, and June of 2020 increased by 10.59 per cent from Ksh 15.11 billion to Ksh 16.71 billion. The growth in disbursements is partly attributable to financing of programs aimed at mitigating the spread and management of the COVID-19 pandemic.

Table 2.1 : Monthly cash transfers from National Government (Ksh million)

| | Jan | Feb | Mar | Apr | May | Jun | Oct | Nov | Dec |
|------|----------|----------|----------|----------|----------|----------|----------|----------|------------|
| 2021 | 2,492.58 | 2,908.51 | - | - | - | - | 1,281.31 | - | - |
| 2020 | 2,594.62 | 3,151.47 | 3,495.82 | 3,954.44 | 4,047.99 | 4,677.03 | 1,080.40 | 1,446.28 | 1,931.61 |
| 2019 | 2,109.15 | 2,476.86 | 2,907.33 | 3,388.40 | 3,795.11 | 5,020.34 | 3,795.11 | 1,177.78 | 171,104.69 |
| 2018 | 1,894.58 | 1,920.00 | 2,675.93 | 3,425.33 | 3,473.89 | 4,570.23 | 958.16 | 1,410.92 | 1,530.82 |
| 2017 | - | - | 2,591.75 | 2,987.39 | 3,726.30 | 4,434.77 | 617.15 | - | - |
| 2016 | - | - | 2,359.00 | 3,044.24 | 3,385.89 | 3,385.89 | - | - | - |

Data source: Gazette Notice (Various issues)

Conditional grants

Conditional grants continue to be a major source of financing County operations. The County receives conditional grants from the National Government and Development Partners mainly from World Bank and Danish International Development Agency (DANIDA), European Union (EU) and Sweden. During 2020/21, the County received Ksh 481.85 million and Ksh 383.42 million from National Government and Development partners respectively. The contribution of condition grants to total revenue has been robust (figure 2.1). On average, the grants contributed 8.79 per cent of the County total revenue between 2013/14 and 2020/21. In nominal terms, conditional grants have increased slightly from

Ksh 557.20 million in 2013/14 to Ksh 865.28 million in the 2020/21. There is need for the county to maintain good relations, and comply fully to the requirements of its development partners to continue benefiting from the conditional grant

Own Source Revenue

The share of OSR to the total revenue has similarly been robust. On average, OSR contributed 7.76 per cent to total revenues between 2013/14 and 2020/21 (Figure 2.1). During 2020/21, it contributed 12.35 per cent of the total revenues, an all-time high. The strong performance registered indicates some level of resilience in OSR collections amidst the adverse effects of COVID-19 pandemic experienced.

The performance of the county annual OSR has been relatively stable, though with a series of fluctuations as indicated in figure 2.2. Analysis of annual County OSR performance indicate growth over the years except during 2019/20 and 2020/21. The county has achieved slightly more than 50 per cent of its targets save for 2020/21 when it realized 40.02 per cent. In 2019/20, the county generated Ksh 509.65 million as OSR, a decrease of 19.03 per cent compared to Ksh 629.42 million realised during same period in 2018/19. Similarly, the amount collected as OSR during 2020/21 decreased by 26.4 per cent compared to the amount collected in 2019/20. The persistent decline was premised on the negative effect of COVID-19 pandemic on business activities and subsequent revenue collection.

Figure 2.2: Annual own source revenue targets and actual collections

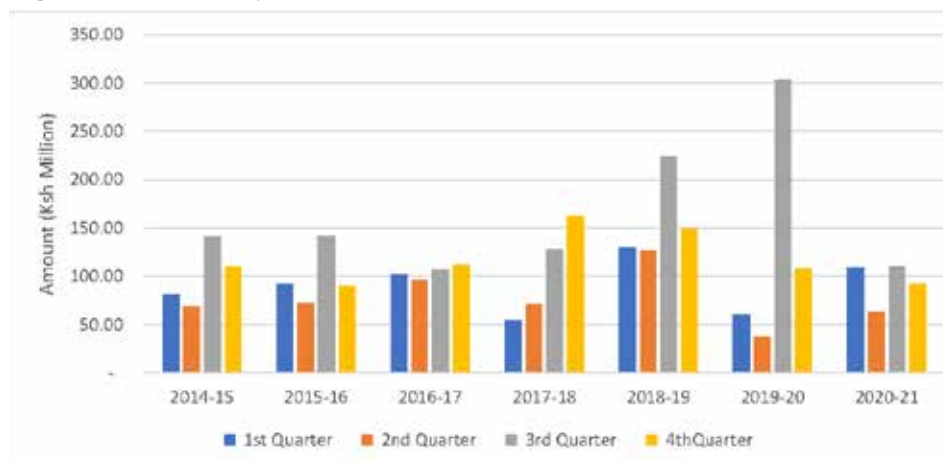


Data Source: Office of the Controller of Budget (Various reports)

Analysis of the quarterly OSR indicate that most OSR are collected during the third and fourth quarter, premised on the payments of single business permits (Figure 2.3). In 2019/20, the County realized low collections during the first and second quarter, with significant improvements in the third and fourth quarter. However, during the fourth quarter of 2019/20, the generated OSR declined by 24.09 per cent from Ksh 141.99 million realized during the third quarter to Ksh 107.79 million. This was attributed to the effects of

COVID-19 pandemic that affected most economic activities. During 2020/21, the quarterly collections remained low compared to other financial years. With the ease of containment measures across the country, the OSR performance is expected to improve as well.

Figure 2.3: Quarterly own source revenue collection



Data Source: Office of the Controller of Budget (Various reports)

Analysis of the revenue streams indicate that single business permit contributes the highest amount followed by CESS, street and bus parking fees as well as market fees (Table 2.2). The single business permit contributed a total Ksh 345.55 million from 2013/14 to 2018/19 whereas Cess, street and parking fees and market fees amounted to Ksh 215.96 million, Ksh 153.52 million and Ksh 114.22 million, respectively.

Table 2.2: OSR streams

| Revenue | 2013/14 | 2014/15 | 2015/16 | 2016/17 | 2018/19 | Total |
|-----------------------------|------------|------------|------------|------------|------------|-------------|
| Single Business Permit | 55,643,804 | 63,454,991 | 58,079,141 | 89,090,298 | 79,277,460 | 345,545,694 |
| Cess | 22,228,672 | 45,426,647 | 53,525,687 | 45,409,713 | 49,365,334 | 215,956,053 |
| Street and Bus Parking Fees | 29,436,490 | 34,299,301 | 32,245,595 | 27,709,473 | 29,831,400 | 153,522,259 |
| Market Fees | 25,288,867 | 26,984,888 | 22,334,263 | 19,557,260 | 20,051,304 | 114,216,582 |
| Land Rates and Plot Rates | 11,845,091 | 11,708,149 | 12,460,639 | 13,753,276 | 16,675,005 | 66,442,160 |
| Miscellaneous | 14,287,684 | 22,989,947 | 16,054,677 | 3,958,525 | 3,246,992 | 60,537,825 |
| House Stall | 5,766,520 | 12,295,191 | 7,949,533 | 6,924,311 | 18,880,855 | 51,816,410 |
| Technical Planning Fees | 1,170,100 | 12,718,519 | 5,707,504 | 4,219,869 | 4,687,350 | 28,503,342 |
| Advert Fees | 102,400 | 338,324 | 3,225,924 | 896,280 | 21,775,255 | 26,338,183 |
| Slaughter Fees | 885,150 | 1,415,925 | 864,175 | 2,466,415 | 913,800 | 6,545,465 |
| Enforcement | 992,562 | 1,047,550 | 1,378,300 | 1,215,425 | 1,002,940 | 5,636,777 |
| Stock Auction Fees | - | 2,531,970 | 2,223,030 | 1,766,655 | 601,830 | 4,591,515 |
| Water Charges | 33,530 | 343,270 | 454,105 | 176,285 | 40,960 | 1,048,150 |

| | | | | | | |
|---------------------|-------------|-------------|-------------|-------------|-------------|---------------|
| Administration Fees | 805,645 | 143,240 | | | 1,000 | 949,885 |
| Total | 168,486,515 | 235,697,912 | 216,502,573 | 217,143,785 | 246,351,485 | 1,081,650,300 |

2.1 County Expenditure Analysis

Economic and political crises, natural disasters (such as droughts and flooding), security challenges and health crisis (such as the COVID-19 pandemic) highlight the consequential risks and underlying vulnerabilities in national and county level budgetary and planning system. These can substantially affect public resources and in cases of weaker planning systems they may impact the nature and level of service delivery to the citizen.

The UN Sustainable Development Goals (SDGs) emphasize the productive role of targeted and strategic county level expenditure. The 2014 UN Secretary General’s Synthesis Report on the Sustainable Development Goals (SDGs) states that “many of the investments to achieve the sustainable development goals will take place at the sub-national level and be led by local authorities”¹. It is at the counties that economic activity takes place and when spending priorities and execution are done just right then the county and country will be set to the desired development trajectory.

Despite their constrained fiscal autonomy (such as inability to borrow funds) and relatively small budgets, the county government has a key role to play in promoting growth as espoused in the Kenya Constitution. This is particularly the case with development expenditure, which is within the assigned remit of county as per the PFM Act of 2012 and is key to the county’s future growth prospects given several decades of under-investment which have constrained productive capacity in the local economy.

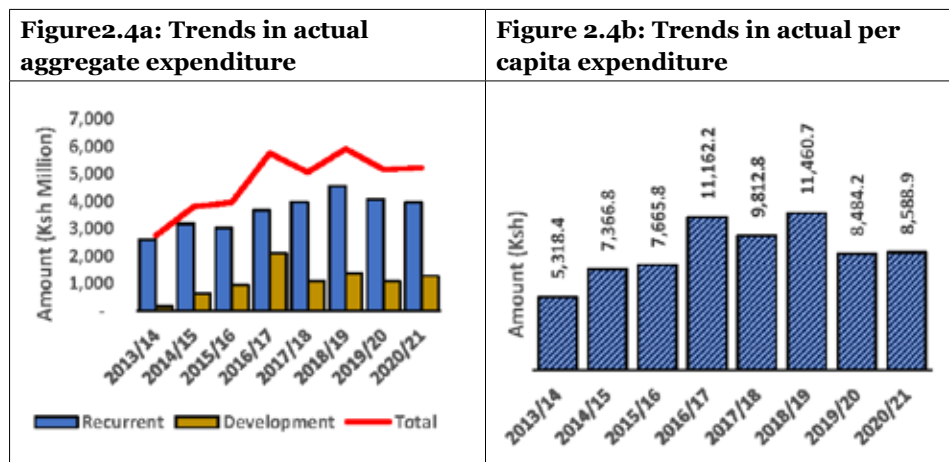
Trends and profile of county government expenditures

County expenditure has over the years been rising as the county escalates its efforts in provision of services to its residents. Total county expenditure has grown significantly since 2013/14. With the implementation of the first full year county budget in 2013/14, actual expenditure in the county increased from Ksh. 2,745.4 million to Ksh. 5,227.2 million in FY 2020/21 (Figure 2.4). This translates to over eighty per cent increase in county spending over the period. Cumulatively the county has spent a total of Ksh. 37.6 billion over the period under review. This comprises of a cumulative Ksh 28.9 billion and Ksh. 8.6 billion on recurrent and development expenditures representing 77.0 per cent and 23.0 per

¹ UN General Assembly (2014), p. 22, par. 94.

cent of the cumulative recurrent and development expenditure respectively. This signals that development expenditure performance is relatively weak and there is even a greater opportunity to push development expenditure higher and support deepening of capital spending in the county.

Figure 2.4: County expenditure analysis



Data Source: Office of the Controller of Budget

Consistent with the nominal growth in actual county expenditures, spending on a per capita basis has more than doubled over the period. In 2013/14, per capita spending in the county was about Ksh 5,318.4 compared Ksh 11,460.7 in 2018/19. Between 2013/14 and 2018/19 per capita spending averaged Ksh 8,797.8. At the end of 2020/21 per capita expenditure stood at Ksh 8,588.9.

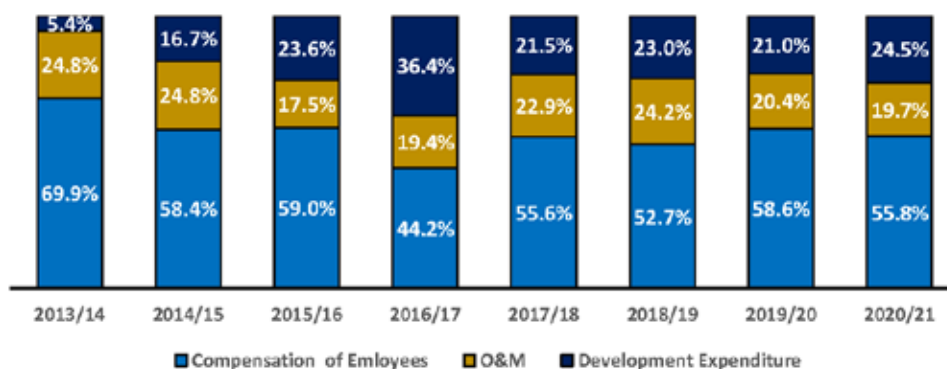
Utilization of public resources in the county

Analysis of expenditures by economic classification and by departments (spending priorities) reveals since inception of devolution, the county government prioritized narrowing the economic and social infrastructure gaps. Much of government spending has mainly been on provision of health services, roads, transport and public works and agriculture, livestock and fisheries among others.

The average development spending was 21.5 per cent of total expenditure between 2013/14 and 2020/21. In 2013/14 development expenditure accounted for 5.4 per cent.

This increased to 16.7 per cent in 2014/15, 23.6 per cent in 2015/16 and 36.4 per cent in 2016/17. Afterwards, development spending as a share of total spending began to fall reaching 21.0 per cent at the end of 2019/20 as presented in Figure 2.5. At the end of 2020/21 development spending accounted for 24.5 per cent of total expenditure.

Figure 2.5: County government expenditure by economic classification (% of total county government expenditure)



Data Source: Office of the Controller of Budget

Performance of development spending and compensation of employees exhibit converse relationship. In the periods when development spending was rising, compensation of employees was declining and vice versa. For Embu County, compensation of employees on average accounted for 56.8 per cent between 2013/14 and 2020/21. In 2013/14 it accounted for 69.9 per cent of total expenditure declining steadily to 44.2 per cent in FY 2016/17 before picking up to 55.6 per cent in 2017/18 and then decelerating to 52.7 per cent in 2018/19 and increasing to 58.6 per cent at the end of 2019/20. At the end of 2020/21 compensation of employees accounted for 55.8 per cent.

Reflecting on expenditures by functional classification or priority spending (Table 2.3), the county spent a combined average of 70.6 per cent of the total expenditure during the period 2014/15 to 2020/21 on non-administrative and non-coordinational functions such as county health and sanitation (31.1%); infrastructure and public works (13.2%); Embu Level Five hospital (7.8%); education, youth empowerment and sports (7.2%); agriculture, livestock and fisheries (5.3%); lands, water, physical planning and housing (4.0%); trade, investment, industry, tourism and cooperative development (2.5%); and gender, culture, children and social services (0.5%). In contrast, coordinational and administrative functions accounted for a combined average of 29.4 per cent, with Office of the Governor accounting

for 9.9 per cent, County Assembly 10.2 per cent, public service, and administration at 3.6 per cent, finance, and economic planning at 2.5 per cent while County Public Service Board accounted for 0.5 per cent.

Table 2.3: County departmental spending

| | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 | Average spending | Average share of spending |
|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|---------------------------|
| Health & Sanitation | 375.9 | 1,314.4 | 1,732.2 | 1,712.6 | 2,003.0 | 1,900.8 | 1,805.6 | 1,549.2 | 31.1 |
| Infrastructure, Public Works, Housing & energy | 207.8 | 442.1 | 1,053.5 | 518.1 | 783.8 | 723.9 | 876.4 | 657.9 | 13.2 |
| County Assembly | 416.7 | 465.5 | 485.0 | 481.4 | 556.1 | 550.1 | 607.4 | 508.9 | 10.2 |
| Office of the Governor | 1,906.2 | 370.1 | 316.1 | 301.0 | 168.82 | 184.96 | 205.2 | 493.2 | 9.9 |
| Embu Level Five hospital | 499.9 | 284.8 | 406.3 | 336.7 | 375.5 | 420.8 | 400.7 | 389.2 | 7.8 |
| Education, Youth Empowerment & sports | 144.2 | 216.0 | 536.5 | 424.0 | 482.7 | 393.7 | 309.6 | 358.1 | 7.2 |
| Public Service and administration | - | 219.7 | 298.1 | 403.8 | 518.8 | 341.5 | 399.5 | 311.6 | 6.3 |
| Agriculture, Livestock, Fisheries & Co-op Devt | 45.9 | 314.5 | 338.9 | 291.8 | 359.5 | 257.9 | 236.9 | 263.6 | 5.3 |
| Lands, Water, Physical planning & ural development | 98.5 | 143.6 | 241.7 | 332.3 | 331.6 | 138.5 | 117.0 | 200.4 | 4.0 |
| Finance, Economic planning & revenue authority | 90.1 | 87.8 | 62.1 | 161.3 | 192.8 | 114.7 | 170.9 | 125.7 | 2.5 |
| Trade, Tourism, Investment & Industrialization | 8.2 | 83.8 | 200.9 | 40.6 | 86.3 | 61.5 | 39.6 | 74.4 | 1.5 |
| Gender, Culture, children & social services | 4.7 | 12.0 | 59.0 | 22.5 | 27.3 | 35.8 | 22.5 | 26.3 | 0.5 |
| County Public Service Board | 4.9 | 2.9 | 28.9 | 36.5 | 27.1 | 39.4 | 36.0 | 25.1 | 0.5 |
| Total | 3,802.8 | 3,957.2 | 5,759.2 | 5,062.4 | 5,913.3 | 5,163.5 | 5,227.3 | 4,983.7 | 100.0 |

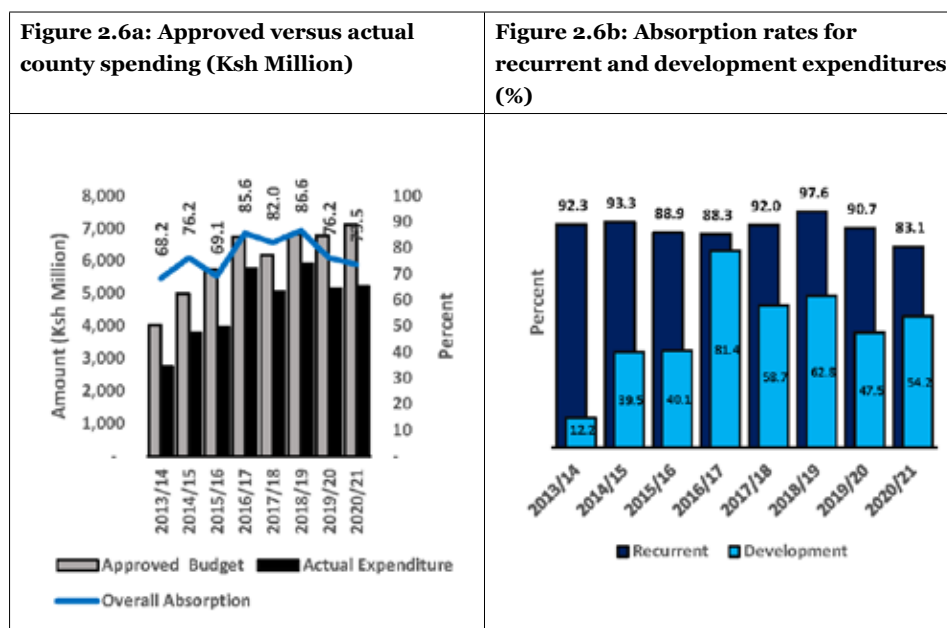
Data Source: Office of the Controller of Budget

Effectiveness of County spending

Total budget execution averaged 77.2 per cent in the period 2013/14 to 2020/21. In 2013/14 overall total budget execution stood at 68.2 per cent. This execution improved to 76.2 per cent in 2014/15 and declined slightly to 69.1 per cent in 2015/16 before picking up to 86.6 per cent in 2018/19. At the end of 2019/20 execution of budget was 76.2 per cent and declined to 73.5 at the end of 2020/21. This means that in 2020/21 Ksh. 5,227.2 million was utilized out of the Ksh 7,107.1 million approved budget (Figure 2.7).

With regards to development budget execution in the county, the average absorption rate over the period under review was 49.6 per cent (implying that on average about 50.4 per cent of the development budget is not absorbed). This is a major budget implementation weakness, and the county should continue tightening budget implementation to ensure achievement of greater absorption rates to help achieve the targets in ADPs and the CIDP. On recurrent expenditure, the execution has been robust over the years, the average absorption rate averaged 90.8 per cent leaving about 9.2 per cent of unspent recurrent budget.

Figure 2.6: County approved expenditure and absorption rates



Data Source: Office of the Controller of Budget

Pending Bills

Pending bills in Embu County generally follow an upward trend. In 2014/15 the county reported Ksh. 596.6 million in pending bills. This increased to Ksh. 798.2 million in 2015/16 with development related pending bills accounting for 86.7 per cent of this. Pending bills increased further to Ksh. 860.5 million in 2016/17 then ascended to Ksh. 1,278.7 million in 2017/18 before decelerating to Ksh. 1,048.9 million in 2018/19. At the end of 2019/20, pending bills totalled 1,818.7 million and Ksh 1,817.0 million. Generally, pending bills related to development have been greater than those related to recurrent expenditure on average accounting for 57.9 per cent of the pending bills portfolio over the review period. If pending bills for development spending were paid in their respective fiscal year, the execution of development budget in subsequent years would improve.

Figure 2.7: Profile of county pending bills



Source: KIPPRA based on Office of the Controller of Budget

To achieve its overall goal of improving lives and livelihoods of its residents, the county government must now move quickly to tackle the problem of pending bills. Increasing and persistent pending bills is a threat to the survival of the private sector particularly primary firms that trade with the county government. These firms are critical for employment creation as well as driving economic activity within the county. These bills have not only affected their profitability and overall performance but have also become a threat to private sector in general and the families that depend on these firms through ripple effect. If not well monitored these could grow and eat up on the county's already thin revenue sources.

2.2 Key Messages

From the foregoing, the following are observed:

- i. It is evident that much of expenditure particularly development expenditure happens in third and fourth quarters of the fiscal year, with the latter showing stronger performance. This pattern reveals systemic weaknesses in county public investment management system.
- ii. County wage bill has largely exceeded 35 per cent of county actual expenditure averaging 56.8 per cent while development spending averaging 21.5 per cent.
- iii. Priority expenditure has been on non-administrative and non-coordinational functions such as health, education, agriculture, roads etc., accounting for an average of 70.6 per cent of actual expenditure. Health sector leads at 31.1 per cent. Administrative and coordinational functions such as county executive, county assembly, public service management and finance account for 29.4 per cent of expenditure.
- iv. Budget execution as measured by absorption rate has improved over the review period. Average overall absorption rate stands at 77.2 per cent. Average development budget absorption rate stands at 49.6 per cent while that of recurrent expenditure stands at 90.8 per cent.
- v. Pending bills have been burgeoning over the review period with development related pending bills on average accounting for 57.9 per cent of the entire pending bills portfolio.

2.3 Recommendations

To steer the county towards achieving its budgetary objective and development goals contained in the ADPs and CIDP, the following measures are proposed:

- (i) Mobilize more finances from OSR to increase the available revenues for budgetary operations.
- (ii) Seek for more funding in form of grants from development partners to cater for the critical development projects in the county.
- (iii) Ensure that the ongoing projects are completed before launching new project and clear any pending bills and arrears owed to suppliers.

- (iv) Ensure the ongoing infrastructure project are completed and suppliers paid within the specified timelines for optimal returns to investment and to spur private sector activity.
- (v) Improve budget execution and absorption of development budget by harmonizing project implementation cycles to budgeting and fast-track exchequer releases.
- (vi) Reduction of expenditure on compensation of employees within the PFM requirement since ballooning compensation of employees potentially affects execution of key development programs especially if not brought to sustainable levels.
- (vii) Monitoring and prompt payment of pending bills as they limit execution of planned activities in subsequent budgets.

3 Agriculture, Livestock and Fisheries

3.1 Characteristics of the sector

Agriculture accounts for the significant share of economic activity in Embu County. More than 30 per cent of county economic activity is driven by the agriculture sector. In 2017, agriculture accounted for Ksh 39,794 million out of the total Ksh 103,734 million Gross County Product (GCP) amounting to 38.4 per cent of the County's GCP.

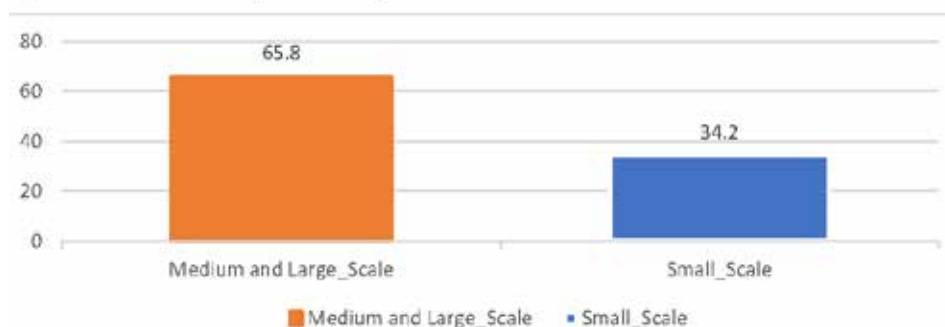
Over 70 per cent of the households in Embu County practice farming. About 67 per cent of the households produce crops, 54 per cent produce livestock, 0.32 per cent practice aquaculture and about 0.89 per cent are involved in fishing. About 6.5 per cent of the households practice irrigation farming.

Table 3.1: Distribution of households practicing agriculture, fishing and irrigation by county and sub-county

| County/Sub County | Total Households | Farming Households | Crop Production | Livestock Production | Aquaculture | Fishing | Irrigation |
|-------------------|------------------|--------------------|-----------------|----------------------|-------------|---------|------------|
| Kenya | 12,143,913 | 6,354,211 | 5,555,974 | 4,729,288 | 29,325 | 109,640 | 369,679 |
| Embu | 182,743 | 130,990 | 123,265 | 98,446 | 579 | 1,633 | 11,873 |
| Embu East | 39,678 | 31,674 | 29,995 | 23,924 | 160 | 234 | 2,595 |
| Embu North | 24,300 | 18,854 | 17,797 | 13,718 | 90 | 176 | 2,234 |
| Embu West | 43,153 | 21,166 | 19,386 | 14,566 | 151 | 220 | 2,231 |
| Mbeere South | 46,065 | 35,511 | 33,684 | 27,304 | 93 | 705 | 2,930 |
| Mbeere North | 29,528 | 23,785 | 22,403 | 18,934 | 85 | 298 | 1,883 |
| Mt. Kenya Forest | 19 | - | - | - | - | - | - |

Source: 2019 Kenya Population and Housing Census

On the scale of production, the FAO criterion on land size is used to identify small holder farmers as those producers that “fall in the bottom 40 per cent of the cumulative distribution” (Khalil et al., 2017). Using this criterion, about 34.2 per cent of the farming households in Embu County are “small-scale” farming with a land holding of 0.675 or less acres of land.

Figure 3.1: Scale of operation: per cent of households

Source: KIHBS 2015/2016. Figures for a period of the 12 months

The County is classified as a Semi-arid uplands agro-ecological zone as per the Agricultural Sector Transformation and Growth Strategy (ASTGS) 2019-2029, suitable for dryland crops and beef cattle. An overall analysis of the county agricultural production indicates among the top food crops produced by households in Embu include maize, beans, bananas, potatoes, green grams, kales and cassava.

Table 3.2: Distribution of households growing crops by type, county and sub-county

| County/Sub-County | Embu | Embu East | Embu North | Embu West | Mbeere South | Mbeere North |
|-------------------|---------|-----------|------------|-----------|--------------|--------------|
| Maize | 109,171 | 26,782 | 14,688 | 16,926 | 31,493 | 19,282 |
| Beans | 89,278 | 23,223 | 11,822 | 14,872 | 24,850 | 14,511 |
| Bananas | 55,970 | 21,651 | 13,757 | 12,529 | 3,659 | 4,374 |
| Potatoes | 31,032 | 13,434 | 6,378 | 9,283 | 698 | 1,239 |
| Green grams | 30,437 | 209 | 139 | 317 | 20,013 | 9,759 |
| Kales | 27,825 | 9,108 | 9,773 | 4,773 | 2,431 | 1,740 |
| Cassava | 27,641 | 9,993 | 4,179 | 4,414 | 5,218 | 3,837 |
| Sorghum | 22,883 | 740 | 169 | 443 | 12,570 | 8,961 |
| Sweet potatoes | 20,905 | 6,218 | 5,096 | 3,725 | 3,945 | 1,921 |
| Sugarcane | 17,631 | 7,359 | 4,749 | 3,370 | 1,064 | 1,089 |
| Millet | 12,819 | 282 | 80 | 205 | 4,855 | 7,397 |
| Tomatoes | 8,734 | 2,578 | 2,289 | 1,359 | 1,664 | 844 |
| Onions | 8,517 | 3,137 | 3,214 | 1,292 | 486 | 388 |
| Cabbages | 8,247 | 2,601 | 4,260 | 943 | 274 | 169 |
| Watermelons | 1,884 | 277 | 127 | 285 | 724 | 471 |
| Ground Nuts | 1,215 | 202 | 107 | 242 | 451 | 213 |

Source: 2019 Kenya Population and Housing Census

Key permanent crops among households in Embu include Khat, coffee, macadamia and mango.

Table 3.3: Distribution of households growing permanent Crops by type and County

| County/Sub County | Tea | Coffee | Avocado | Citrus | Mango | Macadamia | Khat (Miraa) |
|-------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Embu | 18,664 | 28,996 | 19,355 | 3,581 | 26,771 | 27,488 | 34,900 |
| Kenya | 476,613 | 478,936 | 966,976 | 177,445 | 796,867 | 195,999 | 134,148 |

Source: 2019 Kenya Population and Housing Census

Resource productivity is another key important factor in determining the agro-processing potential (scale) of the County and would have a great impact on farmers' incomes and the County's GCP. An assessment of horticultural productivity indicates Embu's value of fruits production in 2019 amounted to KES fruits 1.9 billion. The area under fruit was 5,416 Ha with a production of 87,560 MT. The major fruits grown in order of value importance are; macadamia nuts, banana, mango, avocado, pawpaw, purple passion and watermelons.

Table 3.4: Fruits Grown in Embu County

| Type of Fruit | Area in Ha | Production in Tons | Value in Shillings |
|----------------|--------------|--------------------|----------------------|
| Macadamia Nuts | 840 | 6,300 | 756,000,000 |
| Banana | 1,583 | 37,992 | 531,888,000 |
| Mango | 1,598 | 29,084 | 183,168,597 |
| Avocado | 553 | 8,297 | 165,940,000 |
| Pawpaw | 512 | 3,072 | 122,880,000 |
| Purple Passion | 41 | 346 | 82,577,778 |
| Watermelons | 193 | 1,785 | 51,150,000 |
| Cashew Nuts | 10 | 75 | 9,000,000 |
| Oranges | 30 | 220 | 7,340,000 |
| Yellow Passion | 8 | 64 | 3,200,000 |
| Tangerines | 10 | 100 | 3,000,000 |
| Pineapples | 2 | 45 | 1,800,000 |
| Lemons | 17 | 127 | 1,405,000 |
| Tree Tomato | 14 | 42 | 1,260,000 |
| Custard Apple | 2 | 5 | 250,000 |
| Loquats | 3 | 6 | 60,000 |
| Total | 5,416 | 87,560 | 1,920,919,375 |

Source: Agriculture and Food Authority, 2019

In 2019, the value of vegetables production in the County amounted to Ksh 399.5 million. The area under vegetables was 1,179 Ha with a production of 19,279 MT. The major

vegetables grown in order of value importance are; tomato, potato, spinach, kales, cabbage, carrots, french beans, butter nut and pumpkin leaves.

Table 3.5: Vegetables grown in Embu County

| Type of Vegetables | Area in Ha | Production in Tons | Value in Shillings |
|-------------------------|--------------|--------------------|--------------------|
| Tomato | 265 | 9,070 | 127,700,000 |
| Potato | 275 | 4,265 | 118,700,000 |
| Spinach | 62 | 2,150 | 56,000,000 |
| Kales | 197 | 1,315 | 22,130,000 |
| Cabbage | 135 | 425 | 17,560,000 |
| Carrots | 70 | 560 | 16,500,000 |
| French Beans | 46 | 325 | 15,300,000 |
| Butter Nut | 44 | 508 | 7,975,000 |
| Pumpkin Leaves | 25 | 296 | 6,800,000 |
| Broccoli | 10 | 100 | 5,000,000 |
| Pumpkin Fruit | 10 | 114 | 4,040,000 |
| Cowpea | 20 | 85 | 850,000 |
| Bell Pepper/Sweet Paper | 7 | 21 | 420,000 |
| Leaf Amaranth | 11 | 31 | 390,000 |
| African Nightshade | 2 | 14 | 140,000 |
| Total | 1,179 | 19,279 | 399,505,000 |

Source: Agriculture and Food Authority, 2019

In 2019, the value of MAPs production in the County amounted to KES 42.1 million. The area under MAPSs was 137 Ha with a production of 937 MT. The major MAPs grown are; Spring Onion/Green Shallots, Corriander, Rosemary, Basil and Long Cayenne Chilies.

Table 3.6: Medicinal and Aromatic Plants (MAPs) grown in Embu County

| Medicinal and Aromatic Plants (MAPs) | Area in Ha | Production in Tons | Value in Shillings |
|--------------------------------------|------------|--------------------|--------------------|
| Spring Onion/Green Shallots | 57 | 570 | 26,500,000 |
| Bulb Onion | 52 | 266 | 12,490,000 |
| Corriander | 3 | 15 | 600,000 |
| Rosemary | 5 | 21 | 590,000 |
| Basil | 1 | 8 | 480,000 |
| Long Cayenne Chilies | 2 | 13 | 400,000 |
| Mint | 1 | 5 | 375,000 |
| Bullet Chilies | 3 | 13 | 310,000 |
| Moringa | 6 | 12 | 120,000 |

| | | | |
|-------------|-----|-----|------------|
| Aloe | 4 | 9 | 90,000 |
| Jetropha | 2 | 3 | 75,000 |
| Lemon Grass | 1 | 2 | 20,000 |
| Total | 137 | 937 | 42,050,000 |

Source: Agriculture and Food Authority, 2019

Floriculture is a key sub-sector in the agriculture sector and a major contributor of foreign exchange after diaspora, tourism and tea. The main flowers grown in Embu County are Trachelium. In 2019, the value of Trachelium flowers produced in the County amounted to Ksh 1.3 million. The area under flowers was 56 Ha with a production of 50 million MT.

Table 3.7: Flowers grown in Embu County

| Type of Flowers | Area in Ha | Production in Tons | Value in Shillings |
|-----------------|------------|--------------------|--------------------|
| Trachelium | 56 | 50 | 1,260,000 |

Source: Agriculture and Food Authority, 2019

Being an ASAL County, animal production is a key economic activity in Embu County. Other than rearing the traditional livestock (i.e. cattle, goats and sheep), the County has promoted poultry production and bee keeping (apiculture) among farming households in the County. A lower percentage of farming households practice aquaculture.

Table 3.8: Distribution of households rearing livestock and fish by County and Sub County

| County/Sub County | Kenya | Embu | Embu East | Embu North | Embu West | Mbeere South | Mbeere North |
|-----------------------|-----------|--------|-----------|------------|-----------|--------------|--------------|
| Indigenous Chicken | 3,337,700 | 80,171 | 19,095 | 9,773 | 11,173 | 23,551 | 16,579 |
| Goats | 1,898,887 | 56,864 | 11,625 | 4,519 | 6,612 | 20,027 | 14,081 |
| Indigenous cattle | 2,260,439 | 32,172 | 4,669 | 1,551 | 2,402 | 14,638 | 8,912 |
| Exotic cattle -Dairy | 939,916 | 23,852 | 9,087 | 7,012 | 5,180 | 1,226 | 1,347 |
| Sheep | 1,299,893 | 12,781 | 2,221 | 1,373 | 1,115 | 4,924 | 3,148 |
| Beehives | 201,406 | 11,926 | 2,159 | 976 | 1,131 | 4,040 | 3,620 |
| Donkeys | 500,682 | 8,069 | 12 | 3 | 43 | 5,376 | 2,635 |
| Rabbits | 124,122 | 7,297 | 2,293 | 1,567 | 1,582 | 1,058 | 797 |
| Exotic cattle -Beef | 167,625 | 5,700 | 2,026 | 1,593 | 1,414 | 424 | 243 |
| Exotic Chicken Layers | 194,517 | 4,250 | 1,324 | 1,051 | 879 | 638 | 358 |
| Pigs | 110,383 | 2,404 | 545 | 616 | 900 | 161 | 182 |

| | | | | | | | |
|-------------------------|---------|-------|-----|-----|-----|-----|-----|
| Exotic Chicken Broilers | 79,461 | 1,525 | 457 | 421 | 342 | 169 | 136 |
| Fish Ponds | 22,019 | 549 | 159 | 84 | 141 | 88 | 77 |
| Fish Cages | 3,361 | 57 | 15 | 8 | 15 | 12 | 7 |
| Camels | 167,666 | 56 | 8 | 4 | 10 | 20 | 14 |

Source: 2019 Kenya Population and Housing Census

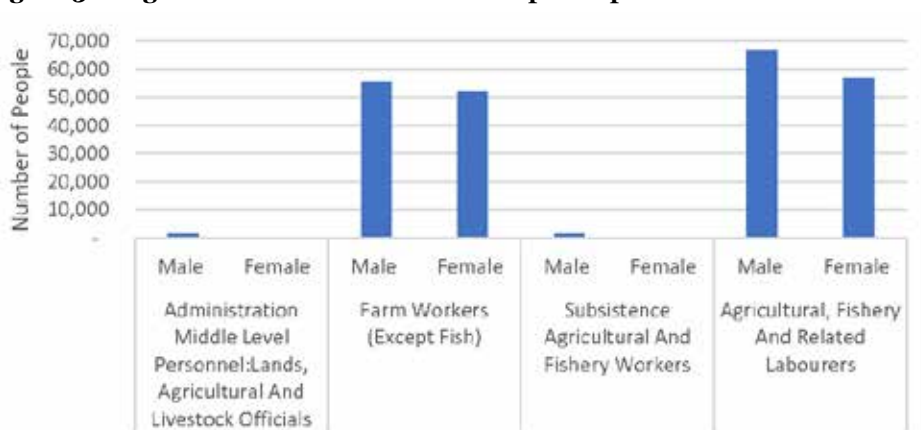
The above characterization of farming households highlights the priority value chain opportunities in maize, beans, bananas, potatoes, green grams, kales, cassava, khat, coffee, macadamia, mango, cattle, goats, sheep, poultry production and bee keeping (apiculture). With majority of the households farming the identified products, the Embu transformation strategy in agriculture need to prioritize value chains in the identified areas to positively impact on households' livelihoods.

Agri-Food Challenges in COVID-19

i) Human capital/employment levels – by gender

Agricultural labour participation in Embu indicates relative parity between females and males with no strong dominance of either gender in the labour force. Majority of the population in Embu are agricultural, fishery and related labourers. The workers in this sub-major group include: Farm-hands and Related Labourers; Forestry Labourers; and Fishery, Hunting and Trapping Labourers. The second most popular agriculture related workers in the County are farm workers where the group covers occupations related to: Field Crop, Vegetable and Horticultural Farm Workers; Poultry, Dairy and Livestock Producers; and Crop and Animal Producers. The classifications are based on the Kenya National Occupational Classification Standard (KNOCS).

Figure 3.2: Agriculture-related labour force participation

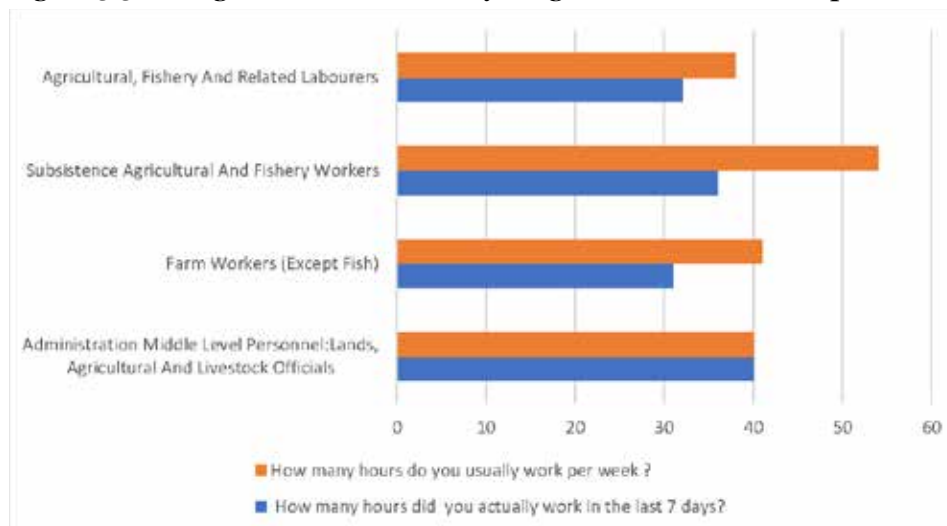


Source: KNBS Survey on Socio Economic Impact of COVID-19 on Households-Wave 2

An assessment of the COVID-19 effects on hours worked in agriculture related occupations indicates workers in almost all the identified sub-sectors worked fewer hours in the

reference period as compared with the usual hours worked per week. The most affected workers are the subsistence agricultural and fishery workers who recorded the highest difference of 18 hours between the usual and actual hours worked in a week. The workers in this sub-major group grow and harvest field or tree and shrub crops, grow vegetables and fruit, tend or hunt animals, gather wild fruits and plants, catch fish and gather other forms of aquatic life in order to provide food, shelter and a minimum of cash income for themselves and their households.

Figure 3.3: Changes in hours worked by in agriculture related occupations



Source: KNBS Survey on Socio Economic Impact of COVID-19 on Households-Wave 2

The identified COVID-19 effects on labour force participation are likely to have negative effects on output thereby increasing yield gaps.

ii) Market channels and operations

Successful transformation of smallholder agricultural production in Embu County from subsistence to an innovative, commercially oriented and modern agricultural sector, as aspired in the national ASTGS, is dependent on the ability of the County market its commodities both in domestic, regional and international markets.

As a result of COVID-19, there has been a further slow down on trade activities due to the restrictions on movements. From the KNBS conducted between 30th May and 6th June 2020, 1.4 per cent of the households in Embu County indicated over the past 1 week there

had been instances where the household or a member of the household could not access the markets/grocery stores to purchase food items.

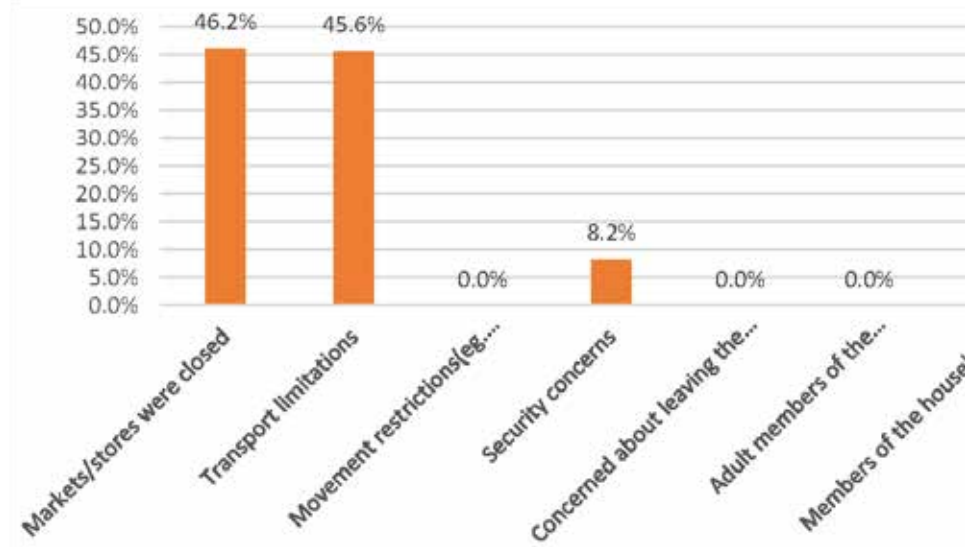
Figure 3.4: Limited access to markets to purchase food items



Source: KNBS Survey on Socio Economic Impact of COVID-19 on Households-Wave 2

Majority of the households indicated the key reasons for not accessing the markets/grocery stores to purchase food items were closure of the markets/grocery stores (46.2%) and transport limitations (45.6%).

Figure 3.5: Reason for limited access to markets/ grocery stores



Source: KNBS Survey on Socio Economic Impact of COVID-19 on Households-Wave 2

Livestock trade has especially been majorly affected as traders are unable to take the livestock to the market.

Restrictions affecting seamless movement of food commodities are likely to cause a hike in prices in non-production areas and fall in prices in production areas. 87 per cent of

households in Embu County indicated that over the past 2 weeks from the reference period, while 6 per cent indicated that they had not experienced a change in the prices.

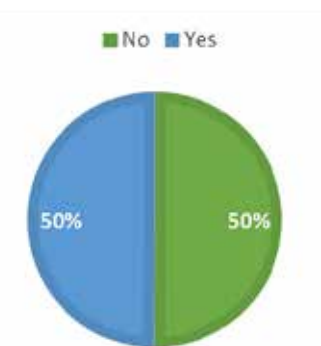
Figure 3.6: Percentage of households experiencing change in food commodity prices



Source: KNBS Survey on Socio Economic Impact of COVID-19 on Households-Wave 2

On the magnitude of the price shocks, 50 per cent of the households indicated they faced a large rise in food prices in the past two weeks from the reference period.

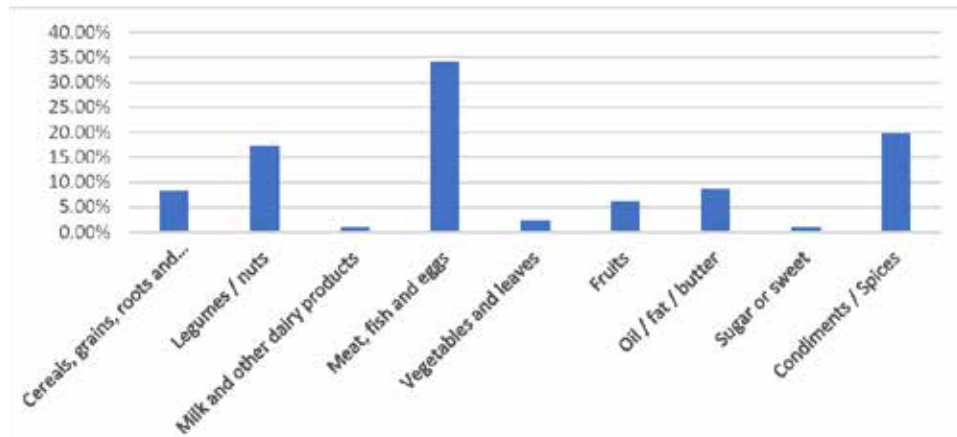
Figure 3.7: Proportion of households facing large food price shocks



Source: KNBS Survey on Socio Economic Impact of COVID-19 on Households-Wave 2

Poor access to markets also hinders the ability to supply food to the population as shown in the below figure.

Figure 3.8: Percentage of households reporting that the following food items were not readily available in their locality

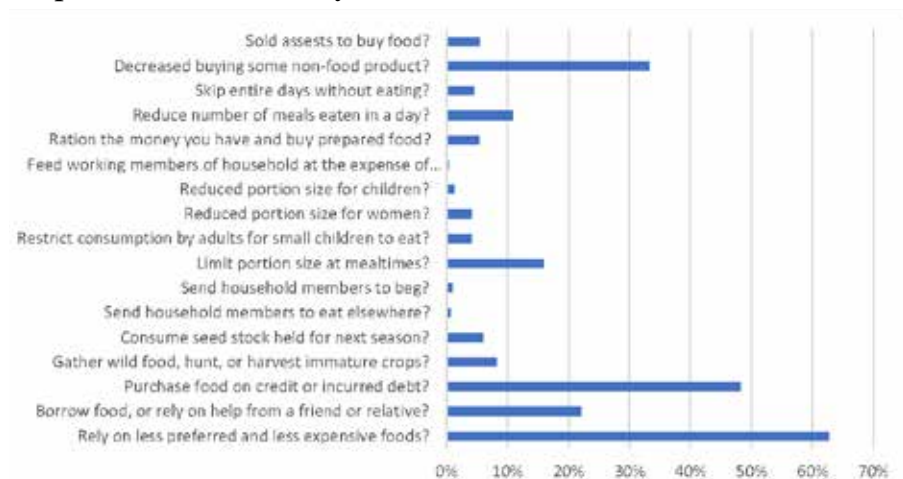


Source: KNBS Survey on Socio Economic Impact of COVID-19 on Households-Wave 2

A key concern is that the food groups affected most are a nutritious food category-meat, fish and eggs, which are necessary for boosting the immune system of the population.

Among the key strategies adopted by households to mitigate COVID-19 effects on food consumption include relying on less preferred and less expensive foods (62.7%), purchase food on credit or incurred debt (48.2%) and decreased buying some non-food products (33.2%).

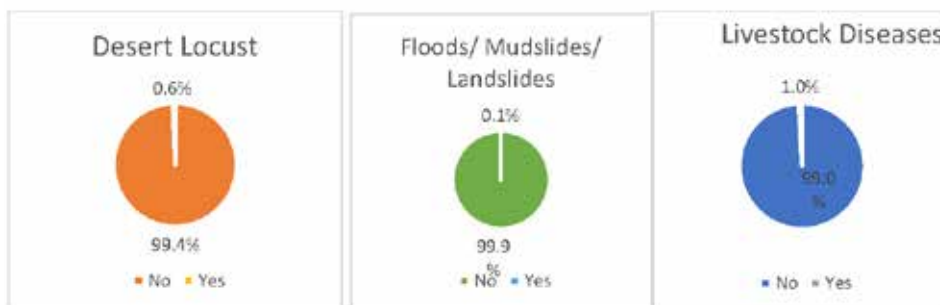
Figure 3.9: Percentage of households where the following strategies were adopted for at least one day



Source: KNBS Survey on Socio Economic Impact of COVID-19 on Households-Wave 2

Additional challenges, albeit at low levels, faced by the county during the COVID pandemic period include: Desert locusts (0.6%); Floods/ Mudslides/ Landslides (0.1%); and Livestock Diseases (1.0%).

Figure 3.10: Percentage of households who experienced the below shocks in the past two weeks the KNBS Wave 2 survey



Source: KNBS Survey on Socio Economic Impact of COVID-19 on Households-Wave 2

Agri-Food Constraints Faced in the County

Among the Key Constraints the County faces include:

- Variable and extreme weather events which have increased in frequency and intensity over the years adversely affecting crop and livestock production
- Dependence of rain fed agriculture despite frequency in extreme climate conditions, such as drought episodes, delayed and erratic rains among other climate shocks,
- Land fragmentation due to land sub-division which affects productivity as production activities are becoming uneconomically viable.
- Low productivity due to subdivisions and traditional methods of farming, raising concerns of food shortages
- Low productivity due to natural resource management
- Water scarcity which is a constraining factor that limits productivity for both crop and livestock production
- Farmers low access to quality and affordable inputs including certified seeds, water, animal feeds, artificial insemination (AI) services, fertilizers, livestock vaccination and mechanized ploughing services by County tractor hire services.
- Low crops, livestock, and livestock products marketing opportunities necessary for improved incomes
- Low commercialization of farming where majority of farmers practice farming for subsistence purposes and as cultural practices.
- Low agro-processing and value addition opportunities among small scale farmers

- (k) Slow uptake of digital platforms to market agricultural produce.
- (l) Pests and Livestock Diseases
- (m) Slow uptake of digital platforms to market agricultural produce.
- (n) Inadequate extension and veterinary services
- (o) Inadequate and weak farmers' associations and cooperative which hamper agricultural marketing
- (p) Farm losses and post-harvest waste.

3.2 Opportunities with COVID-19 in Agriculture sector

An assessment of the sector linkages to other sectors highlights that the sector is enabled by:

- (i) Businesses/ MSMEs: Businesses and MSMEs are crucial in providing inputs and requirements to the agricultural sector. The sector would facilitate the efficient access to
- (ii) Transport, Storage and ICT sectors
- (iii) Financial and insurance activities
- (iv) Accommodation Food services
- (v) Manufacturing: The manufacturing sector plays a crucial role in agro-processing. Agricultural inputs also contribute to the processing of other manufacturing commodities

The County has opportunities in:

- (a) Developing County-private partnership in enhancing agro-processing and value addition capacities; Construction of abattoirs; and Linking farmers to product markets
- (b) Expand/ exploit innovative marketing opportunities for farmers produce including uptake of innovative marketing platforms, such as milk ATMs, so that farmers are not exploited by middle men.
- (c) Adoption of drought resistant livestock pastures/fodder and crops
- (d) Adoption of fodder and feed conservation
- (e) Scaling up conservation agriculture, post-harvest management, planting drought-tolerant and early-maturing varieties, and agro-forestry.
- (f) Enhanced water harvesting, sustainable and efficient irrigation.
- (g) Increased livestock production through: - routine vaccination, deworming and vector control to maintain animal health; decentralized veterinary services; disease surveillance; storing and conserving pastures and fodder; capacity building on animal management and training on preservation and value addition techniques; and improved milking hygiene and animal housing.

- (h) Adoption of natural resource management to include soil and water conservation, tree planting, changing of crop type and water harvesting.
- (i) Access to quality and affordable inputs including certified seedlings, AI services, fertilizers, livestock vaccination, ploughing services by County tractor hire services. The County government has ventured to reduce cost of farming inputs. It has partnered with companies that manufacture seed to supply these seed to farmers at subsidized cost
- (j) Provision of storage and cooling facilities particularly at collection points to minimize spoilage and post-harvest losses particularly for milk.
- (k) Uptake of digital platforms to build capacities of farming households in modern agricultural technologies and marketing of agricultural produce
- (l) Enhance supportive services to include early-warning systems, credit, advisory and information services through extension and training.
- (m) Enhancing farmers technical capacities to act on advisory information received
- (n) Improved crop and livestock emergencies surveillance systems in the County.
- (o) Strengthening farmers' associations and cooperatives as an additional solution to marketing challenges

3.3 Emerging Issues

- (i) Environmental degradation has reduced productive capacity of farms leading to increased risks to food insecurity and reduced farmers income.
- (ii) Climate change, manifested in increased frequency and intensity of extreme weather conditions such as floods, droughts and pest invasion

3.4 Recommendations

To successfully build resilience and enhance growth of the agriculture sector, the County will:

- (i) Develop partnership with the National Government, NGOs, Development Partners, Research Institutions and the Private sector in enhancing agro-processing and value addition capacities of the County as envisioned in the national Agricultural Transformation and Growth Strategy (ASTGS). Some of the value addition processes currently in place include 7 macadamia and 1 mango processing plants for exports. The County projects to have a honey processing firm. There are also opportunities in establishing, upgrading, and reviving agro-processing plants/industries in milk, meat and leather processing plants.
- (ii) In addition to agro-processing, provision of storage and cooling facilities particularly at collection points to minimize spoilage and post-harvest losses.
- (iii) Revive the agricultural sector especially coffee farming through enhanced commercialization opportunities among small holder farmers in the County

by strengthening market linkages beyond the County level, domestically and internationally, across the agricultural value chain.

- (iv) Digitize the agri-food sector to support: - training and building capacities of farming households in modern agricultural technologies, provision of advisory and information services, marketing agricultural produce at a wider scope beyond the County level, and improving access to innovative support services including credit and insurance services.
- (v) Enhance access to quality and affordable inputs including certified seeds, water, animal feeds, artificial insemination (AI) services, fertilizers, livestock vaccination and mechanized ploughing services by County tractor hire services.
- (vi) Establish programmes for surveillance of disasters such as extreme weather conditions, crop pest and diseases, and livestock disease at the County level equipped with relevant technical specialists and finances to effectively prepare, respond and prevent risks. There is also need for the County to mitigate disasters, such as those related to floods, through institutional capacity development, vulnerability analyses and updates, monitoring and early warning systems, and public education.
- (vii) Build the capacity of farmers in adoption of modern farming technologies (such as fodder establishments) and practices and adopt sustainable land management practices to minimize environmental degradation. This can be done by establishing model farms and Farmers Training Centre (ATC) in collaboration with development partners as planned in the County's 2018-2022 CIDP.
- (viii) Strengthen agricultural cooperatives through effective stakeholder engagement and implementation of interventions for more sustainable models of financing and customized training of cooperative members.

4 Water, Sanitation, and Hygiene

4.1 Characteristics of the sector

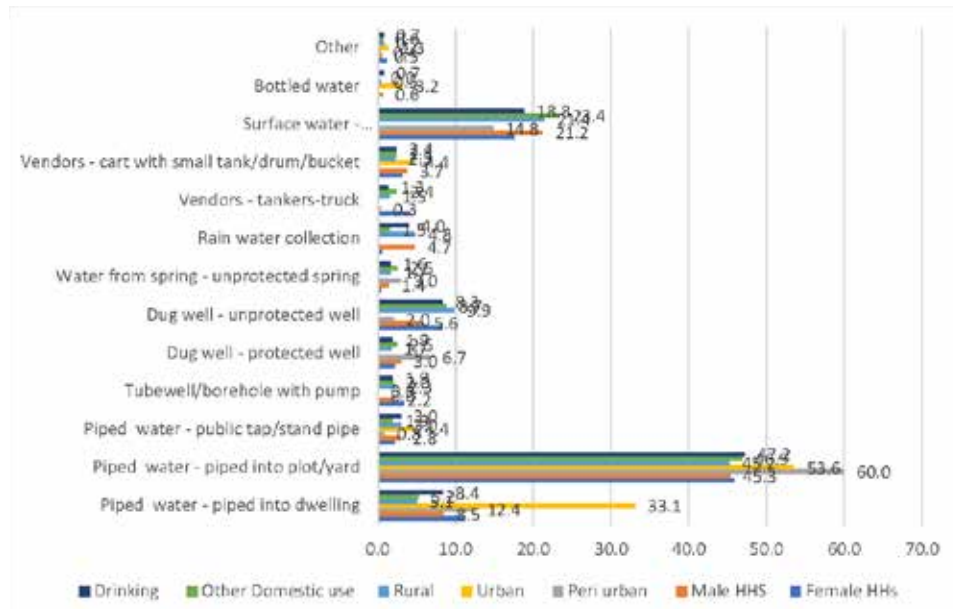
The main sources of drinking water in the county include rivers, dams, piped water, boreholes, springs, wells and pans. The County is served by six major rivers; Thuci that borders Tharaka- Nithi that borders, Tana that borders Machakos County, forms the boundary to Kirinyaga County, Rupingazi forms the boundary to Kirinyaga, Thiba and Ena. These major rivers originate from Mt. Kenya Forest in Manyatta and Runyenjes sub-counties, 30.1 per cent of the population get water from rivers, 35 per cent from piped water and 21 per cent from dug well. In Mbeere North and Mbeere South constituencies, 40.4 per cent get water from rivers, 8.2 per cent from piped water, 23.7 per cent from dug wells and 10.9 per cent from boreholes.

On sanitation, majority of the people in the county use pit latrines for human waste disposal. Of all urban centres in the county, only Embu has a sewage treatment plant that does not have adequate capacity to serve the whole town.

Access to source of water by households

The major source of water for drinking utilized by households in the county is piped water into the plot/yard (47.2 per cent), surface water at 18.8 per cent and piped water into dwelling at 8.4 per cent. Majority of the rural (45.2%), urban (53.6 per cent) and peri-urban (60%) households have access to piped water into the plot. In addition, there are larger proportions of urban households (33.1%) have access to piped water into the dwelling. On the other hand, both male (45%) and female (45.8%) headed households also rely on piped water into the plot/yard. Only a small portion of the households relies on water from dug wells, tube well as well as rainwater.

Figure 4.1: Access to sources of water by households



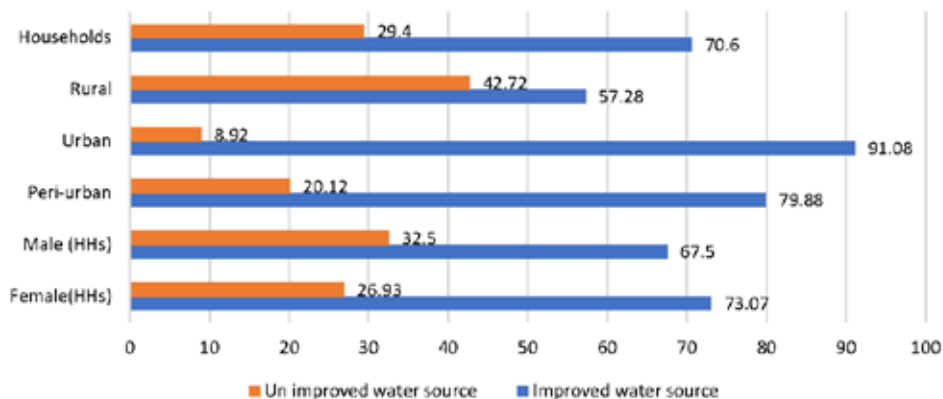
KNBS 2015/2016

Combating COVID-19 pandemic has already placed high demand for water for both domestic usage in households, health care institutions, learning institutions, marketplaces and other public places. Water also remains important to other sectors of the economy such as agriculture and industrial usage, among others. With the planned re-opening of schools and upcoming low rain seasons means that the pressure on water resources will be high, this therefore means that the demand for water will be high and if the supply will be low, households are likely to fail to observe COVID-19 prevention measures of hand washing which may in turn lead to high transmission of COVID-19.

To ensure continuity of quality water supply, there is need for the county to invest in water harvesting and storage facilities both at household and institutional level, this may include supporting schools in building rain harvesting and storage structures in schools from the school structure rooftops, supporting households in rainwater harvesting during rainfall times. Other interventions may include digging boreholes, supply of water to households that experiences water scarcity. Therefore, for equality in access to water the county government can waive or reduce the water bills for urban households who uses piped water as well as support water vendors in access to clean safe water at a reduced cost. This will mean financial support to water service companies. Other long-term measures include inclusion of both rural, urban, and peri-urban dwellers into decision making in regard to water management and governance.

Clean and safe water is essential for good health and goes a long way in ensuring reduced infections. Access to improved sources of drinking water² is high among households (70.6 per cent) both in rural (57.3 per cent) urban areas (91.1 per cent) and peri urban (79.9 per cent). Additionally, both male and female headed households have low access to improved drinking water source as shown in the figure below.

Figure 4.2: Access to improved and unimproved sources of water by households



Source: KNBS 2015/2016

Inequalities in access to safe and clean drinking water may put households at risk of contracting infectious diseases as well as make the households less observance of COVID-19 measures of hand hygiene. One mitigation measure that may be undertaken by the county to increase access to improved water source, include connecting the households with piped water, increase the development of improved sources of water especially in rural areas. Long term measure to support access to water all households is to have both male and female headed households to be part of water management/governance team and in decision making in water management.

Other important consideration is to have separate water drinking point for livestock, different from the household water drinking water sources to minimize water contamination as well as conflict over water resource. Other long-term measures is to avoid agricultural activities along the upstream to minimize water pollution.

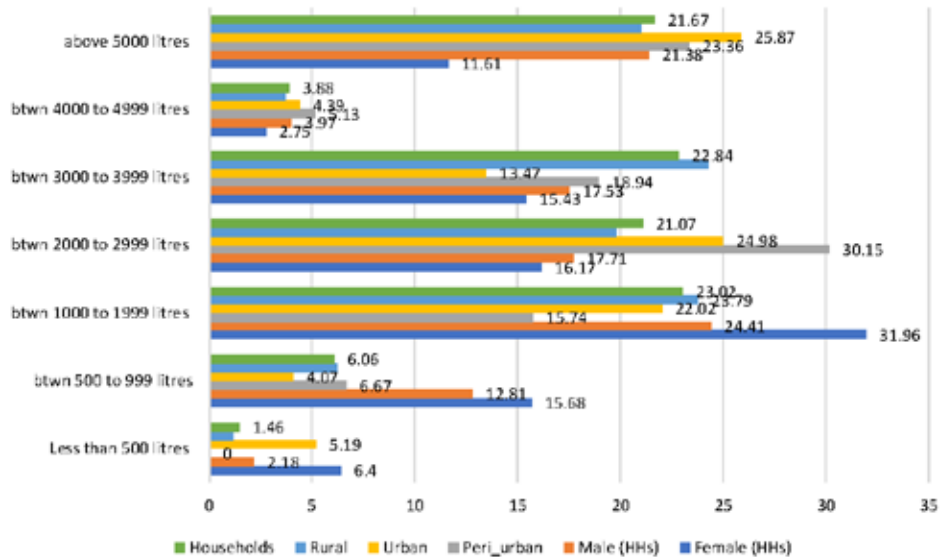
Volumes for water used by households in the past one month

Most households (23 per cent), rural (23.8 per cent) and urban (22 per cent) used between

² Improved source of drinking water includes; water from the following sources Piped water - piped into dwelling, Piped water - piped into plot/yard, Piped water - public tap/stand pipe, Tubewell/bore-hole with pump, Dug well - protected well, Dug well - unprotected well, Water from spring - protected spring). While unimproved sources of water include water from spring - unprotected spring, Rainwater collection, Vendors - tankers-truck, Vendors - cart with small tank/drum/bucket, Vendors-bicycles with bucket, Surface water, river/streams/pond/dam/lake/cannal/irrigation channel Bottled water. This is according to the WHO and UN classification of sources of water.

1000-1999 litres of water per month. Further, more female (32 per cent) than male (23.4 per cent) has used between 1000 to 1999 litres of water.

Figure 4.3: Volumes of water used by households in the past month



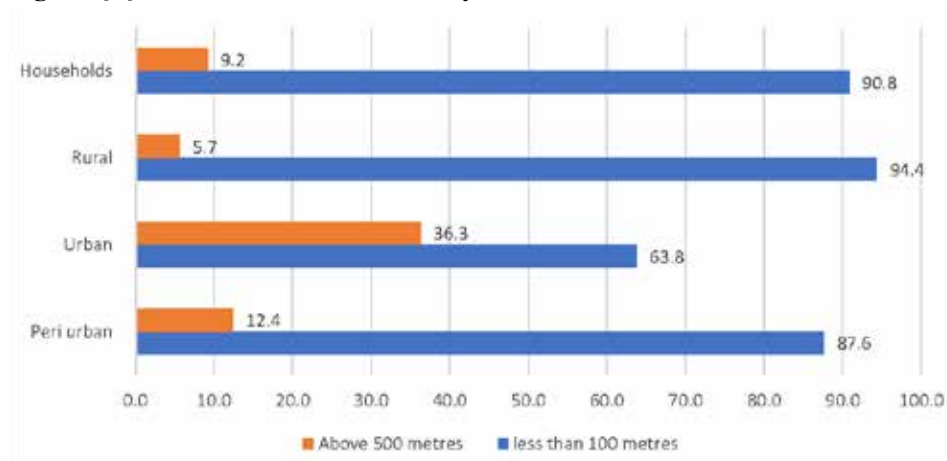
Source: KNBS 2015/2016

Figure 4.3 shows that most households utilize large volumes of water on a monthly basis, with the planned re-opening of schools it means more water will be needed by the institutions. Water remains a scarce commodity and in places or months where water is scarce, this may have an effect on families and hinder them from observing COVID-19 prevention guidelines. Correct utilizations of water resources should be emphasized at households’ level, similarly, there is need for conservation of water catchment areas.

Distance covered by households to and from water source

Majority of the households (90.8 per cent) both rural, urban and peri-urban covers less than 100 metres to water sources meaning they have water within their premises or close to their compounds (See the figure below).

Figure 4.4: Access to water sources by distance



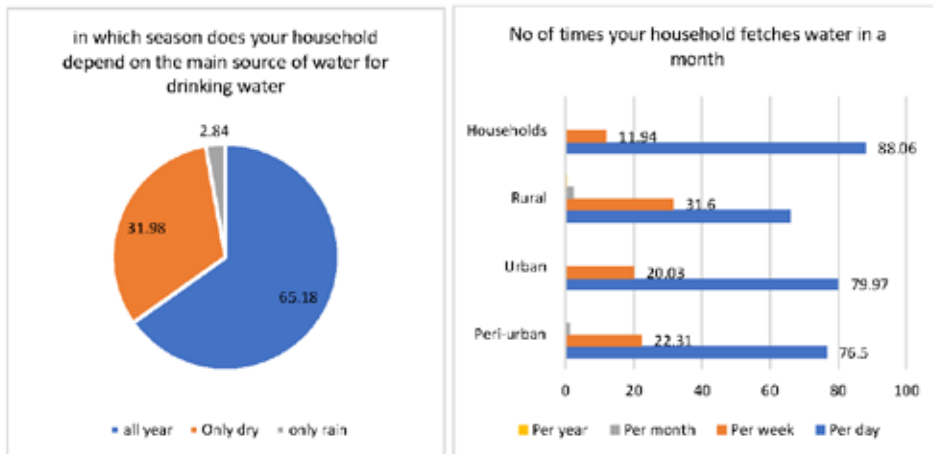
Source: KNBS 2015/2016

If water is available to households, schools, health institutions within the shortest distances possible, it easily encourages observing hand hygiene thus minimizing infections. In learning institutions, it minimizes rates of school dropouts among girls. Women headed households are disadvantaged in access to drinking water within shortest distances and this may make them vulnerable to contracting COVID-19 as well as other infectious diseases. To support hand hygiene among households there is need to have water supply closer to households headed by women.

Access and reliability of water sources

Majority of households (65.2%) in the county relies on the main source of drink water all year round. Most households (88.1 per cent) go to fetch drinking water from the sources per day, this is more among urban (80 per cent) and peri-urban (76.5%) compared to rural (66%) household. This means there may be more of interactions with other household members in areas where water sources are shared, this may lead to increase on infections of COVID-19 where COVID-19 guidelines of social distance and avoidance of crowded place may not be observed. It also implies that households may not be having water enough water storage facilities that can minimize number of trips to water points in a day putting them at risk of water shortages as well as saving on time for other economic activities.

Figure 4.5: Access and reliability to water sources by households



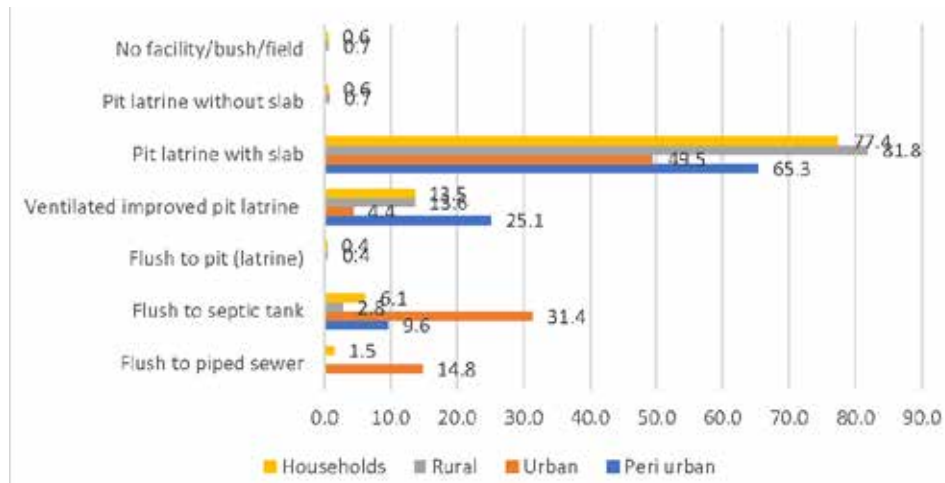
Source: KNBS 2015/2016

Top interventions are protection of the existing major water sources for households and development of new water sources, this may include rainwater harvesting at individual and institutional level. Protection of water catchment areas.

Access to sanitation

Majority of the households (77.4%) as well those in rural (81.8%), urban (49.5) and peri-urban (65.3%) areas use pit latrine with slab. Further small proportions of urban households (31.4%) flush to septic tank as well as flush to piped sewer (14.8%)

Figure 4.6: Access to sanitation in Embu County

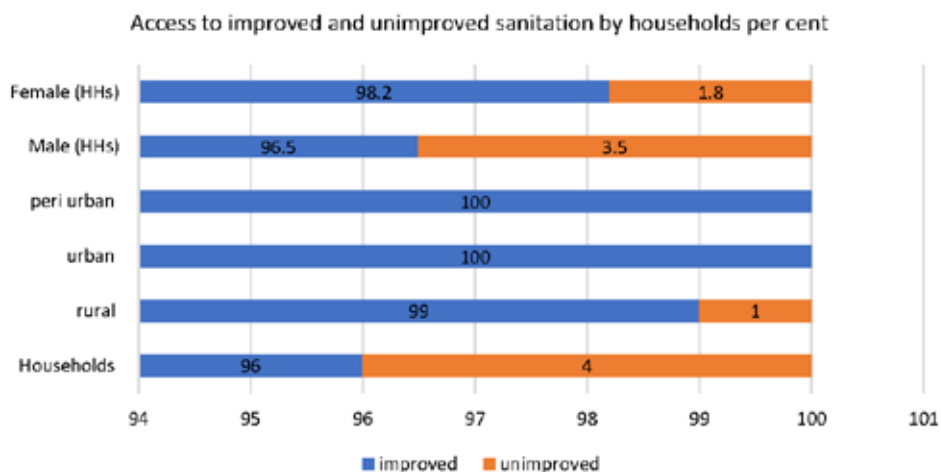


Source: KNBS 2015/2016

Access to improved and unimproved sanitation

Majority of the households (96%) have access to improved sanitation facilities³. This is also similar among rural (78%) and urban (100%) headed households. Improved sanitation is also high among male and female headed households as shown in the figure below.

Figure 4.7: Access to improved and unimproved sanitation by households



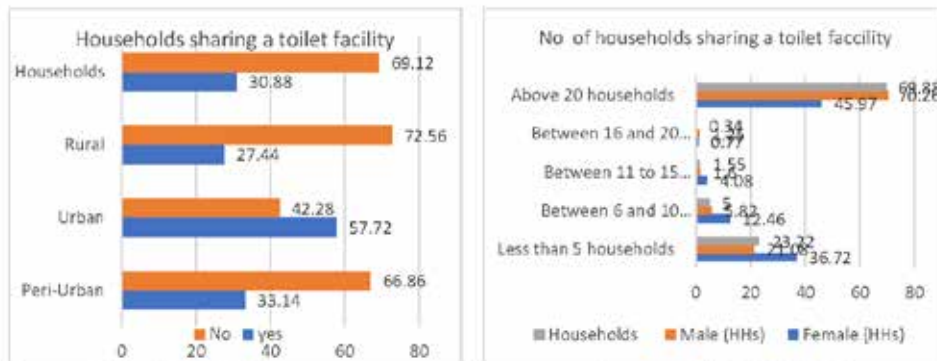
Source: KNBS 2015/2016

Sharing of a toilet facility

Additionally, small proportions of the households (30.9%) do share a toilet facility with other households, this is more in urban (57.7%) compared to peri-urban (33%). On the other hand, most households (69.9%) share a toilet facility with more than 20 households (male headed households 70.3% and female-headed households 45%).

³ Improved sanitation includes; flush to piped sewer, flush to septic tank, flush to pit (latrine), flush to somewhere else, flush to unknown place, ventilated improved pit latrine, pit latrine with slab, pit latrine without slab). Unimproved sanitation includes; composting toilet, bucket toilet, hanging toilet/hanging, no facility/bush/field, others

Figure 4.8: Number of households sharing a toilet facility



Source: KNBS 2015/2016

Sharing of toilet facilities with large number of households puts individuals at risk of contracting COVID-19, and other infectious diseases in cases where proper hygiene is not maintained as well as social distancing measures. Similarly, WHO guidelines require separate sanitation facilities for suspected COVID-19 cases which households may not be able to achieve

Access to WASH during the COVID-19 period

WASH has been identified very important in helping to curb transmission of infectious diseases, currently most households (83.6 per cent) do not have a handwashing facility in their households. Despite this most households (68.7 per cent) have access to WASH (Water and soap) during this period of COVID-19. This is more among male (74.9%) than female (43.8%) headed households. Additional 27.7 per cent of the households having access to both water, soap, and hand sanitizer.

Figure 4.9: Access to water and sanitation during the COVID-19 period



Source: KNBS KIHBS 2015/2016

Source: KNBS COVID-19 wave 2, 2020

More of hand washing should be emphasized especially to those who are not observing hand hygiene to help decrease the spread of the virus, this should be facilitated by provision of water, soap/hand sanitizer to households.

4.2 Opportunities with COVID-19 in Water and Sanitation Sectors

COVID-19 has highlighted the need to maintain a clean safe water, proper sanitation and hand hygiene which places more demand on water and therefore the county needs to leverage on lessons learned from COVID-19 by improving its water and sanitation coverage.

4.3 Emerging Issues

The County has provided wash taps within shops in the town centre as well as handwashing facilities in County and sub-County offices. The county has undertaken a distribution of water tanks, water and soaps at points of entry as well as developed hand washing booths in the informal settlements. The booths are made by students from the TVET institutions

Key messages

Frequent and correct hand hygiene has been emphasized by WHO as one of the measures to curb transmission of COVID-19. This has placed a higher demand for water more so at the households, health care facilities, marketplaces, public places and among essential services providers.

- (i) Most households in the county have higher access to improved sources of water both in rural (66.7%), urban (91.1%) and peri urban (81.9%). Clean and safe water guarantees good health leading to low health expenditures among households.
- (ii) There is a higher access to piped water both in rural (53%), urban (91%) and peri-urban areas (73%). This means more revenue from piped water for the county government. Similarly, it also implies high access to clean and safe water which is guaranteed through piped water system.
- (iii) Access to improved sanitation remains high in the county both in rural (99.3%), urban (100%) and peri-urban households (100%).
- (iv) Sharing of a toilet facility with other households is common among households, this is more in urban (57.7%) and peri-urban (33.1%) compared to rural areas (27.4%). Toilet sharing puts households at risk of contracting COVID-19, and other infectious diseases in cases where proper toilet hygiene is not maintained.
- (v) There is a higher access to hand washing, with majority of households in urban (44.7%) having access to a place for hand washing. Access to WASH (water and soap) 27.7 per cent of the households had access to both water, soap and hand sanitizer during this period of COVID-19. This minimizes the risks of infections.
- (vi) The most commonly used sources of energy for cooking by households are firewood (80.1 per cent) and followed closely by liquified (6.9%).
- (vii) Furthermore, most households dispose their households solid waste in the compound (42.5%), burnt in the open (25.4%) and dumped in the latrine
- (viii) Further only 7 per cent of the household solid waste is collected by the county government for disposal, while a small percentage is collected by private companies for safe disposal. This means that only a small portion of household solid waste

is safely disposed, thus exposing many households to environmental and health hazards.

- (ix) Further, a number of households (22.18%) in the county had experience droughts or floods in the past year.

4.4 Recommendations

To ensure continuous availability of water, the county can undertake the following:

- (i) Increase water supply in households, institutions and public places through drilling of boreholes in all the sub-counties.
- (ii) Increase water storage capacity to store harvested water during rainy seasons.
- (iii) Expand/increase water supply through construction of Dams, Treatment Plants, drilling of boreholes and rainwater harvesting.
- (iv) Promote partnership with Private Sector and Non-State Actors in water resource provision and management.
- (v) Fast track and rehabilitate stalled water project .
- (vi) Promote good governance on water resource management Increasing investment in development and maintenance of water harvesting structures.
- (vii) Develop effective human resources for the water sector to ensure quality water and sanitation service provision.
- (viii) Promoting adoption of appropriate technologies in protection and conservation of catchment areas.
- (ix) The county to work with other stakeholders to undertake water resources management.
- (x) Strengthening and supporting community institutions including Water Users Associations (WRUAs), Community Forest Associations, farmers groups among others, in catchment conservation and protection.
- (xi) Gazette wetlands as public land to prevent encroachment.
- (xii) Rehabilitate the water catchment areas.
- (xiii) Rehabilitate existing water infrastructure to reduce water leakages to reduce water losses.
- (xiv) Upscale abstraction of water from rivers, spring protections, harvesting of rainwater from roof and other catchments to help achieve increase to water access.
- (xv) Introduce automated billing software to help curb the increasing value of non-revenue water.
- (xvi) Undertake water trucking during times of prolonged drought and emergencies to affected households.
- (xvii) Establish water supply monitoring system for efficiency water supply and management.

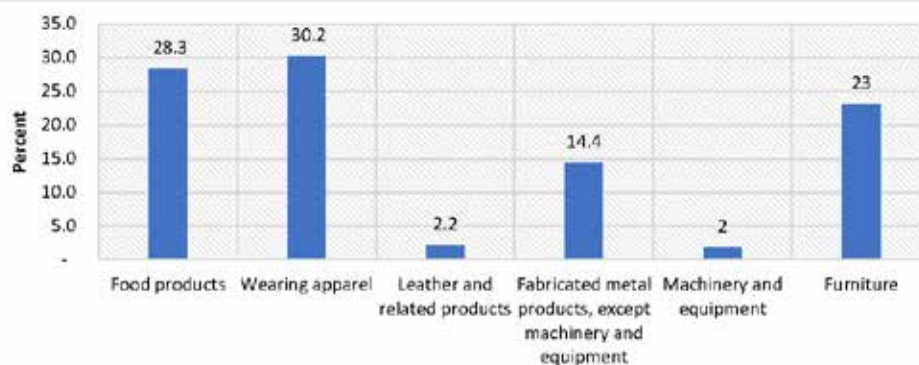
- (xviii) Expand and rehabilitate the existing piped water connection infrastructure to help increase access to water.
- (xix) Develop and implement wastewater management strategy.
- xx. Expand sewer infrastructure to accommodate more households.
- (xxi) Support the implementation of Community Led Total Sanitation (CLTS) initiatives.
- (xxii) Create public awareness on the importance of connecting to sewer system.
- (xxiii) Provide personal protective equipment to staff working in water and sanitation sector for maximum safety and uninterrupted service delivery during this period of COVID-19.
- (xxiv) Improve access to safe and improved toilets in schools, health care facilities, workplaces and public places.
- (xxv) Enforce the WASH regulation of having toilets in all public facilities such as supermarkets, hotels and banks, among others.
- (xxvi) Sensitize the public on the importance of WASH.
- (xxvii) Promote the importance of handwashing and construct WASH facilities to increase access at the household level.
- (xxviii) The county to organize sensitization forums on the importance of handwashing through the media and in community forums.
- (xxix) Inculcate a culture of hand hygiene in the county.

5 Manufacturing, Trade and MSMEs

5.1 Characteristics of Manufacturing Sector

Embu County had 3,771 establishments involved in manufacturing activities which comprise of 15.8 per cent of a total of 23,826 firms (KNBS, 2016). In terms of size, 3,353 (88.9%) are micro, 191 (5.1%) are small and 227 (6%) are medium. The main drivers of the economy of the county include services (48%), agriculture (38%), and manufacturing (2.4%) (GCP, 2019).

Figure 5.1: Sector of operation in manufacturing



Source: KNBS (2016)

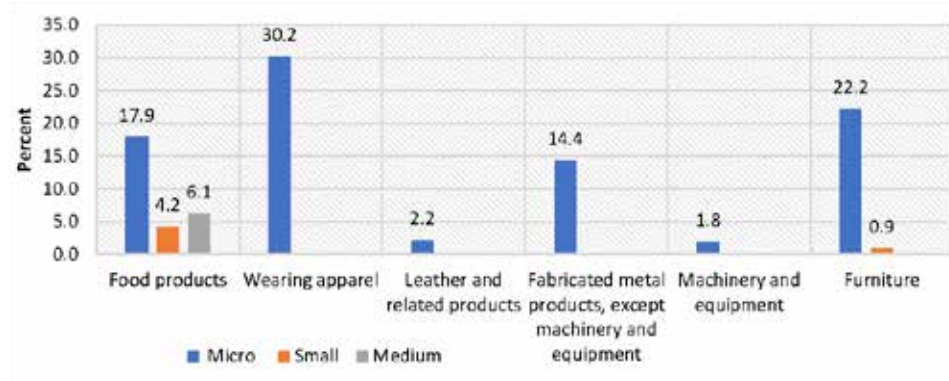
From the KNBS, 2016 survey, the key sub-sectors that drive manufacturing to include: wearing apparel (30.2%), food products (28.3%), furniture (23%), and Fabricated metal products, except machinery and equipment (14.4%) (Figure 5.1). These are fundamental sub-sectors when it comes dealing with effects of COVID-19 and therefore experienced increased activity with focus on food production, production of Personal Protective Equipment (PPEs) and hospital beds. The key products useful in value addition and driving manufacturing include: tree tomato, avocado, bananas, loquat, passion fruit, mangoes, macadamia, tea, coffee. Large industries and factories driving manufacturing sector in the County are involved in tea, coffee, milk processing, saw-mills, hydro-power generation, bakeries, and grain milling.

Sector of operation by size

Most establishments in Embu County are micro in nature and operate in the wearing apparel (30.2%), furniture (22.2%), fabricated metal products except machinery and equipment (14.4%) among others (Figure 5.2). Small sized establishments operate in food

products (4.2%) and furniture (0.9%). Moreover, medium enterprises operate mainly in food products (6.1%).

Figure 5.2: Manufacturing firms by sector and size

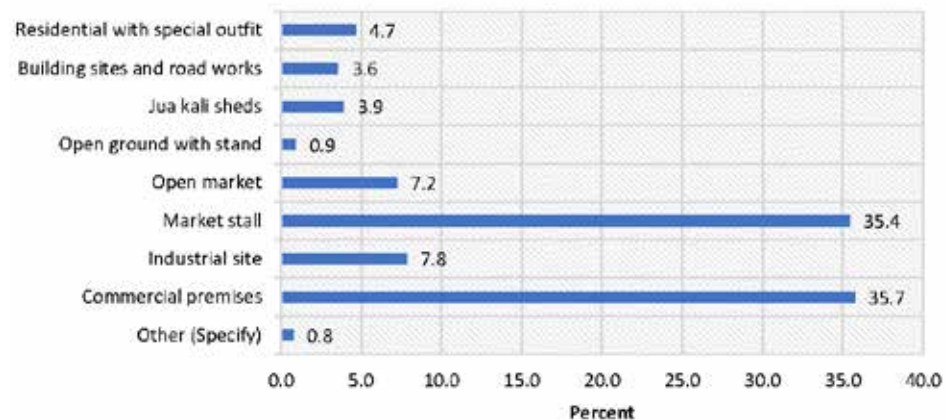


Source: KNBS (2016)

Location of manufacturing firms by type of premises

Common premises used by manufacturing firms in Embu County are commercial (35.7%), market stall (35.4%), industrial site (7.8%), and open market (7.2%) (Figure 5.3).

Figure 5.3: Location of manufacturing firms by premises



Source: KNBS (2016)

Distribution of manufacturing firms by gender and size

Manufacturing establishments in Embu County are dominantly owned by male (53.5%), with females comprising 25.6 per cent while 20.9 per cent are jointly owned. In terms of micro-sized firms, 56.8 per cent are male owned, 28.8 per cent female owned and 14.4 per

cent jointly owned. Small sized firms are largely male owned (59.6%) while the rest are jointly owned (40.4%) (Table 5.1).

Table 5.1: Distribution of manufacturing firms by gender and size -N (%)

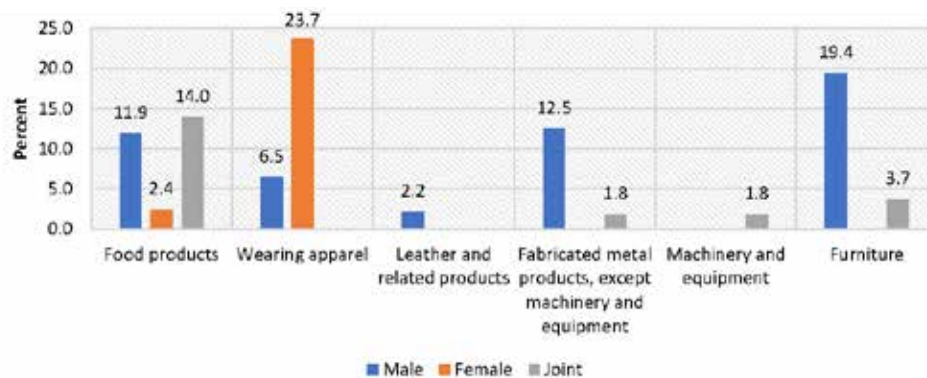
| Gender | A11 | Micro | Small | Medium |
|--------|--------------|--------------|------------|----------|
| Male | 2,018 (53.5) | 1,904 (56.8) | 114 (59.6) | 0 (0) |
| Female | 966 (25.6) | 966 (28.8) | 0 (0) | 0 (0) |
| Joint | 787 (20.9) | 482 (14.4) | 77 (40.4) | 227(100) |
| Total | 3,771 (100) | 3,353 (100) | 66 (100) | 227(100) |

Source: KNBS (2016)

Distribution of Manufacturing firms by gender and sector

Most sub-sectors in manufacturing are male dominated including wearing furniture (19.4%), fabricated metal products except machinery and equipment (12.5%), food products (11.9%) and wearing apparel (6.5%). Females are mostly found in the wearing apparel (23.7%) and food products (2.4%). There is also joint ownership in food products (14.0%), and furniture (3.7) (Figure 5.4).

Figure 5.4: Distribution of manufacturing firms by gender and sector



Source: KNBS (2016)

In terms of employment, the manufacturing sector employs more men (66.5%) than women (33.5%). Most men are found in the medium-sized enterprises (42.3%) while 16.5 per cent are in micro-sized establishments. Majority of the women are mostly in the medium micro enterprises (24.6%) (Table 5.2).

Table 5.2: Employment by gender and size for manufacturing firms

| Number of employees | Micro | Small | Medium | Total |
|---------------------|--------------|-------------|---------------|---------------|
| Male | 4,871 (16.5) | 2,252 (7.6) | 12,481(42.3) | 19,605 (66.5) |
| Female | 1,904 (6.5) | 725 (2.5) | 7,262 (24.6) | 9,891 (33.5) |
| Total | 6,775 (100) | 2,977 (23) | 19,743 (66.9) | 29,496 (100) |

Source: KNBS (2016)

Education levels of manufacturing firm owners

Majority of owners of firms in manufacturing have primary (46.3%), secondary (29.1%), and mid-level college diploma or certificate education (12.2%) (Figure 5.5).

Figure 5.5: Education levels of manufacturing firm owners

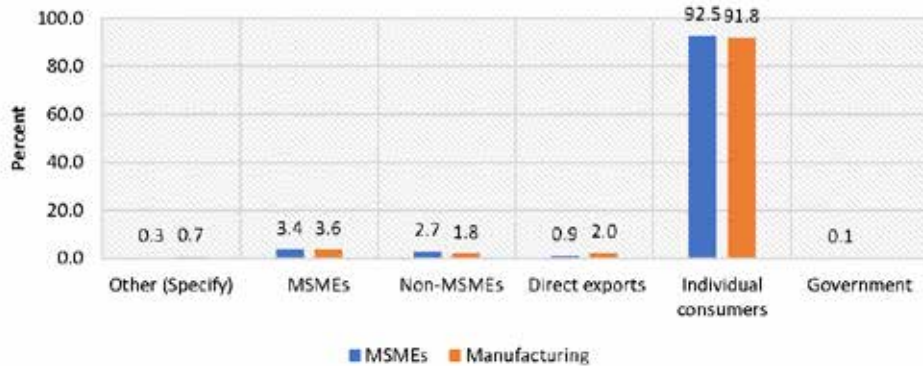


Source: KNBS (2016)

Source of markets

Most manufacturing enterprises and MSMEs in general rely on individual consumers for markets at 91.8 per cent and 92.5 per cent, respectively (Figure 5.6). MSMEs and non-MSMEs are also important sources of markets for these two sectors. Moreover, manufacturing firms and MSMEs are also involved in direct exports at 2 per cent and 0.9 per cent, respectively.

Figure 5.6: Source of markets

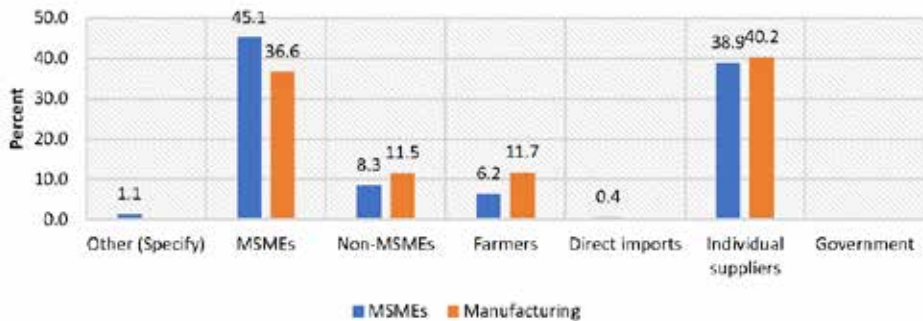


Source: KNBS (2016)

Source of material inputs

Overall, manufacturing establishments and MSMEs source for material inputs from amongst individual suppliers at 40.2 per cent and 38.9 per cent, respectively (Figure 5.7). MSMEs and non-MSMEs are also important to the supply of inputs. Direct imports are not a major source of inputs for both manufacturing firms and MSMEs (Figure 5.7). Therefore, disruptions in the external source markets may not necessarily have adverse implications to manufacturing and MSME operations in Embu County.

Figure 5.7: Source of material inputs



Source: KNBS (2016)

Level of innovation by firms in Manufacturing

Manufacturing establishments in Embu County were involved in both product, process and market innovations. More market innovations are seen under the micro category at 16.4 per cent, product 14.7 per cent and process 13.1 per cent. Fewer innovations are observed in the small category at a rate of 1.4 per cent for product and process and 3.6 per cent for market innovations respectively (Table 5.3).

Table 5.3: Level of innovation by firms in manufacturing

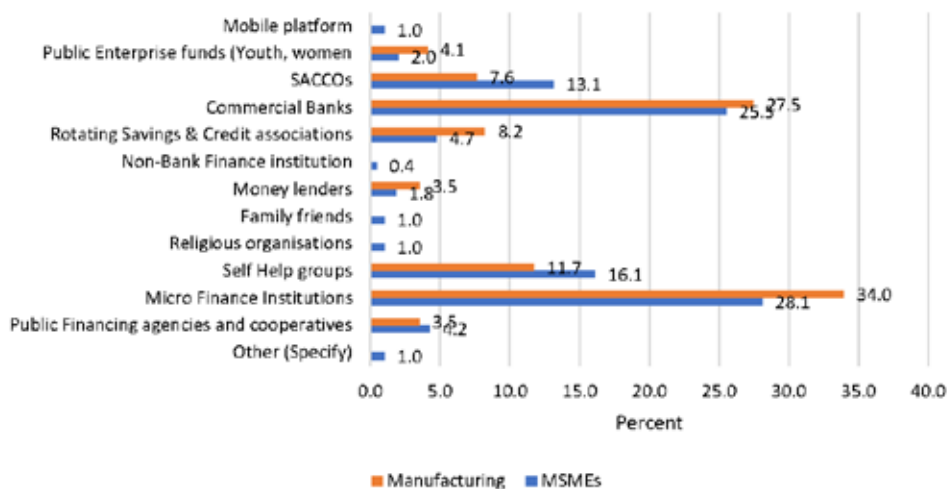
| Type of innovation | Micro | | | Small | | Medium | | Total |
|--------------------|------------|--------------|------------|-----------|-----------|---------|-------|-------------|
| | Don't know | No | Yes | No | Yes | No | Yes | |
| Product | 0 (0) | 2,797 (74.2) | 556 (14.7) | 136 (3.6) | 54 (1.4) | 227 (6) | 0 (0) | 3,771 (100) |
| Process | 0 (0) | 2,860 (75.8) | 493 (13.1) | 136 (3.6) | 54 (1.4) | 227 (6) | 0 (0) | 3,771 (100) |
| Market | 0 (0) | 2,735 (72.5) | 618 (16.4) | 57 (1.5) | 134 (3.6) | 227 (6) | 0 (0) | 3,771 (100) |

Source: KNBS (2016)

Access to credit for Manufacturing and MSMEs firms

According to the MSME 2016 survey, 66.3 per cent of MSMEs and 48.5 per cent of those in manufacturing applied for credit. The key sources of credit for establishments in manufacturing include microfinance institutions (34%), commercial banks (27.5%), self help groups (11.7%), and rotating saving and credit associations (8.2%). MSMEs largely rely on micro finance institutions (34%), commercial banks (25.5%), self help groups (16.1%), and SACCOs (13.1%) (Figure 5.8).

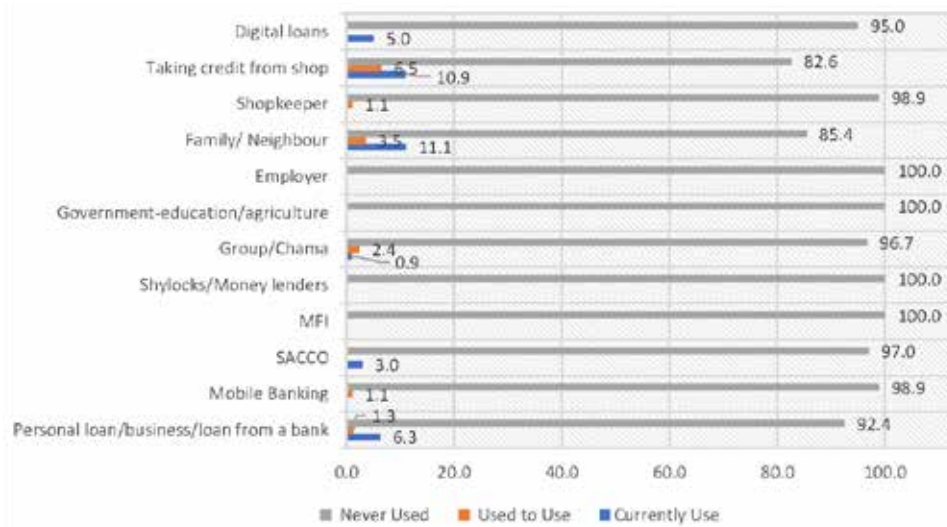
Figure 5.8: Sources of finance



Source: KNBS (2016)

Recent evidence from FinAccess 2019 provides further insights on sources of credit for businesses in Embu County. Businesses commonly obtain credit from the conventional sources such as family/neighbour (11.1 per cent), shops (10.9%), personal/business loans from banks (6.3%), SACCOs (3%), and groups/chama (0.9%). Emerging sources of credit for businesses in Embu county include digital loans (5%) (figure 5.9).

Figure 5.9: Recent sources of credit

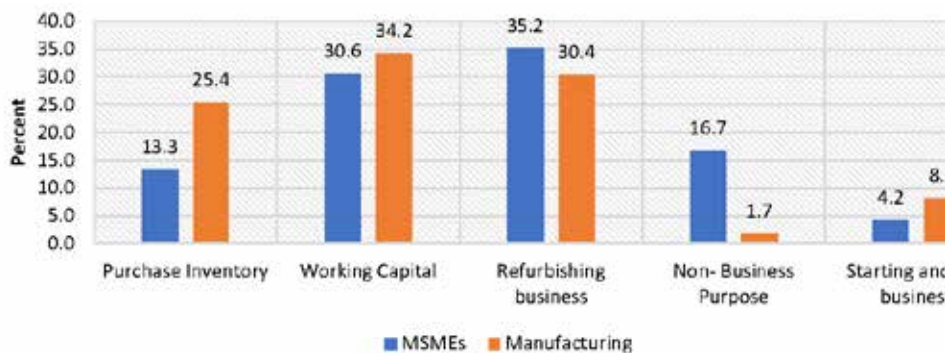


Source: FinAccess (2019)

Purpose of credit

Figure 5.10 presents the main purpose of credit by both MSMEs and firms in manufacturing. In general, manufacturing firms require credit for: working capital (34.2%), business refurbishment (30.4%), and purchase of inventory (25.4%). MSMEs in Embu County require credit for business refurbishment (35.2%), working capital (30.6%), and purchase of inventory (25.4%).

Figure 5.10: Main purpose of credit

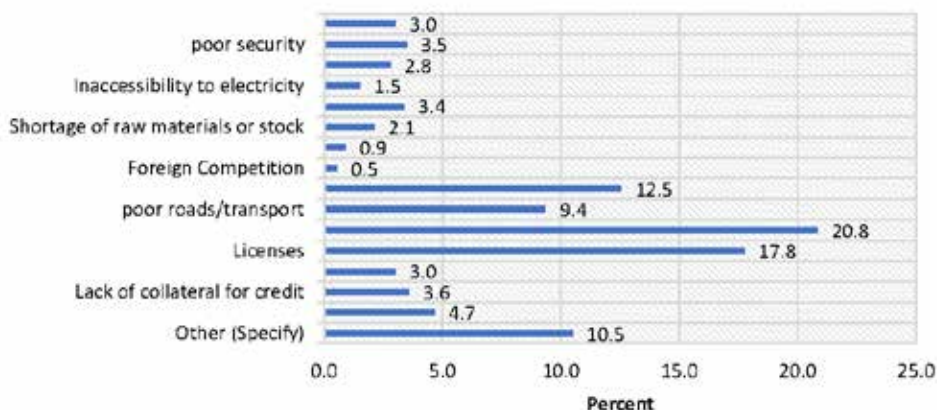


Source: KNBS (2016)

Constraints faced by manufacturing firms

The main constraints faced by establishments in manufacturing include: lack of markets (20.8%), licenses (17.8%), local competition (12.5%), poor roads/transport (9.4%), poor security (3.5%), and power interruption (3.4%) (Figure 5.11). There were also no industrial parks in Embu County.

Figure 5.11: Constraints faced by manufacturing firms



Source: KNBS (2016)

b) Micro Small and Medium Enterprises (MSMEs)

Embu County has 23,826 establishments⁴ with 22,218 (93.2%) being micro; 1,326 (5.4%) are small; and 282 (1.2%) are medium enterprises (KNBS, 2016) (Figure 5.12).

Figure 5.12: Distribution of MSMEs by size



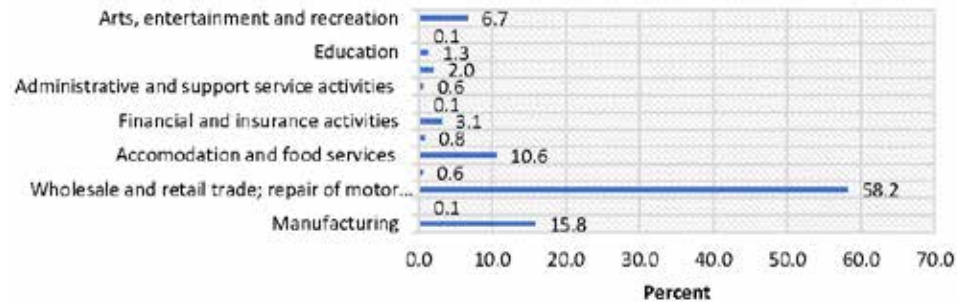
Source: KNBS (2016)

⁴ After applying weights

Sector of operation by MSMEs

Majority of MSMEs in Embu County operate in the wholesale and retail trade; repair of motor vehicles and motorcycles (58.2%), manufacturing (15.8%), accommodation and food services (10.6%), and arts, entertainment and recreation (6.7%) (Figure 5.13). Generally, these are the sectors that have been worst hit by the pandemic and need focus in achieving re-engineering and recovery.

Figure 5.13: Sector of operation by MSMEs

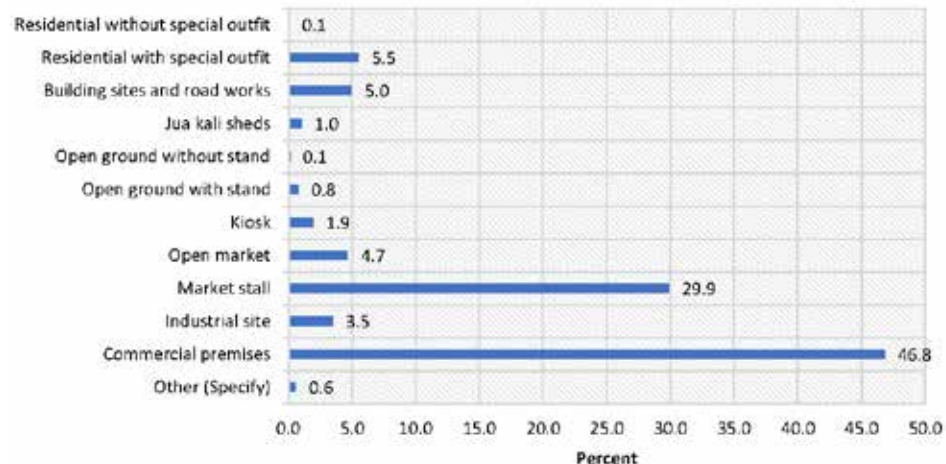


Source: KNBS (2016)

Location of the businesses by type of premises

MSMEs in Embu County are largely located in commercial premises (46.8%), market stalls (29.9%), and residential with special outfit (5.5%) (Figure 5.14). Majority of the businesses in the county could be having many difficulties in meeting their rental obligations due to income disruptions occasioned by COVID-19. According to the May 2020 KNBS COVID-19 survey, 95.1 per cent of the non-farm businesses attributed non-payment of household rental obligations to reduced incomes/earnings while 4.9 per cent attributed the same to delayed incomes/earnings. For those involved in farm businesses, all the respondents attributed the same to reduced incomes/earnings.

Figure 5.14: Location of businesses by premises



Source: KNBS (2016)

Distribution of MSMEs by gender and size

Table 5.4 shows the distribution of MSMEs in Embu County by gender: 44.3 per cent are male owned, 32.7 per cent are female owned, while 23 per cent are jointly owned (male/female). For Micro establishments, 48.3 per cent are male owned, 35.1 per cent are female owned, while 21.1 per cent are jointly owned. Male owners also dominate ownership among small sized establishments at 56.5 per cent, while 43.6 per cent are jointly owned. Considering medium sized establishments, ownership is either jointly owned (80.4%) or controlled by males (19.6%).

Table 5.4: Distribution of MSMEs by gender and size- N (%)

| Gender | A11 | Micro | Small | Medium |
|---------------|-------------------------------|-------------------------------|------------------------------|----------------------------|
| Male | 10,544 (44.3) | 9,740 (43.8) | 749 (56.5) | 55 (19.6) |
| Female | 7,794 (32.7) | 7,794 (35.1) | 0 (0) | 0 (0) |
| Joint | 5,488 (23) | 4,683 (21.1) | 578 (43.6) | 227 (80.4) |
| Total | 23,826 (100) | 22,218 (100) | 1,326 (100) | 282 (100) |

Source: KNBS, 2016

In terms of employment, the micro sized establishments employ more people (55.4%) compared to small (21.1%), and medium (23.5%) (Table 5.5). Micro firms employ 31.2 per cent male and 24.2 per cent female and small sized employ 14.1 per cent male and 7 per cent female. Equally, more men are employed among medium establishments at 15 per cent while females include 8.5 per cent, respectively. Overall, more men (60.3%) are employed by MSMEs in Embu County than women (39.7%) are.

Table 5.5: Employment by gender and size -N (per cent)

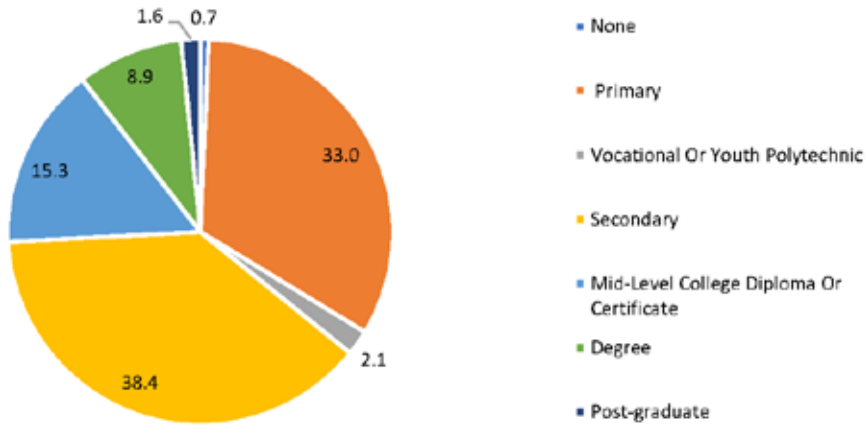
| Gender | Micro | Small | Medium | Total |
|---------------|----------------------|----------------------|----------------------|---------------------|
| Male | 30,099 (31.2) | 13,615 (14.1) | 14,422 (15) | 58,136 (60.3) |
| Female | 23,310 (24.2) | 6,769 (7) | 8,205 (8.5) | 38,283 (39.7) |
| Total | 53,409 (55.4) | 20,384 (21.1) | 22,627 (23.5) | 96,420 (100) |

Source: KNBS (2016)

Education levels of MSME owners

Figure 38 indicates that majority of MSME owners in Embu County have a secondary education (38.4%) while 33 per cent have primary and 15.3 per cent mid-level college diploma or certificate, 8.9 per cent degree education, respectively (Figure 5.15).

Figure 5.15: Education levels of MSME owners



Source: KNBS (2016)

Level of innovation by MSMEs

Table 5.6 presents the levels of innovation in Embu County by MSMEs according to size. Overall, there were low levels of innovation across MSMEs with 19.8 per cent involved in product, 19.8 per cent for process, and 19.8 per cent in market innovation for micro-sized enterprises. Regarding small-sized enterprises, 1.2 per cent engaged in product, 1.2 per cent process and 1.2 per cent market innovation innovations, respectively.

Table 5.6: Level of innovation by MSMEs

| Type of Innovation | Micro | | | | Small | | | | Medium | | Total |
|--------------------|--------------------|------------|---------------|--------------|--------------------|------------|-----------|-----------|---------|-----|-------------|
| | Re-fused to answer | Don't know | No | Yes | Re-fused to answer | Don't know | No | Yes | No | Yes | |
| Product | 0 (0) | 273 (1.1) | 17,200 (72.5) | 4,710 (19.8) | 0 (0) | 124 (0.5) | 907 (3.8) | 296 (1.2) | 227 (1) | 0 0 | 3,273 (100) |
| Process | 0 (0) | 273 (1.1) | 17,200 (72.5) | 4,710 (19.8) | 0 (0) | 124 (0.5) | 907 (3.8) | 296 (1.2) | 227 (1) | 0 0 | 3,273 (100) |
| Market | 0 (0) | 273 (1.1) | 17,200 (72.5) | 4,710 (19.8) | 0 (0) | 124 (0.5) | 907 (3.8) | 296 (1.2) | 227 (1) | 0 0 | 3,273 (100) |

Source: KNBS (2016)

E-commerce

Participation in e-commerce by households in Embu County is below the national average. About 2.3 per cent of the households participate in online e-commerce which is below a national average of 4.3 per cent (KPHC 2019). In comparison, men participate more in online e-commerce (2.7%) than women (2.3%). With introduction of stay-at-home protocols due to COVID-19 online trade has been expected to thrive, little may be impacted in Embu County since fewer households participate in the same.

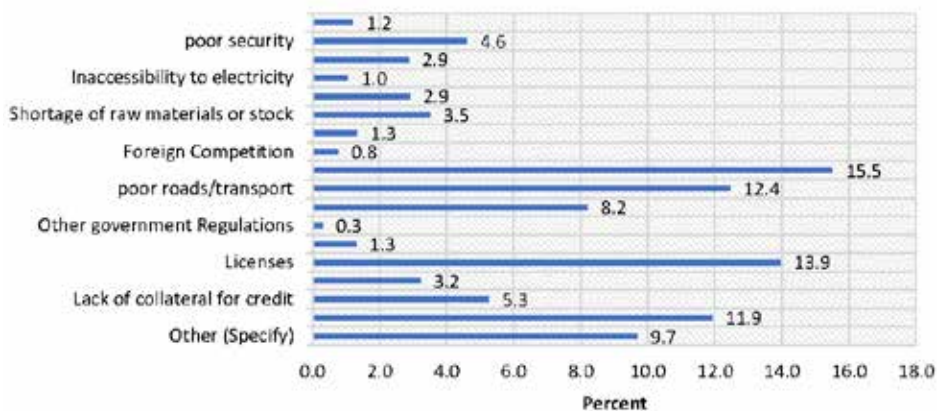
Turnover tax

Only 14.4 per cent of MSMEs in Embu County (3,442) had a previous monthly turnover of above Ksh 83,333, which translates to Ksh 1 million a year. Ideally, this would be the establishments that are eligible for turnover tax with the new thresholds recently introduced vide the tax laws (Amendment) Act, 2020. The actual impact of this move may be difficult to estimate due to data challenges on actual revenue streams and the number of establishments that comply with the same.

5.2 Emerging Issues and Constraints faced by MSMEs

The main constraints faced by MSMEs in Embu County include: local competition (15.5%), licences (13.9%), poor roads/transport (12.4%), lack of markets (8.2%), and poor security (4.6%) (Figure 5.16).

Figure 5.16: Main constraints faced by MSMEs



Source: KNBS (2016)

A study on County Business Environment for MSEs (CBEM) identified other constraints faced by MSMEs in Embu County as: financial and technical capacity, market environment, and worksite and related infrastructure (KIPPRA 2019 and 2022). On worksites, MSEs face inadequate and unequipped worksites, lack of public toilet facilities, lack designated areas for waste disposal, poor road infrastructure, frequent power interruptions. On technical capacity MSEs are characterised by low levels of innovation, lack of training and

apprenticeship programme for artisans, fragmentation due to multiplicity of players who offer training and capacity building, and lack of monitoring and evaluation of training programmes. With the market environment, MSEs face inadequate market for their local products; stiff competition among themselves; and unfair trade practices which manifest through; contract enforcement, counterfeiting, dumping (substandard goods) and misrepresentation (through weight, price, ingredient). MSEs also face bottlenecks related to; insecurity; multiple licenses and permits; numerous procedures for obtaining licenses; and shortage of raw materials.

Effects of COVID-19 on household non-farm and farm businesses

Figure 5.17 presents the effects of COVID-19 on household non-farm and farm businesses in Embu County. 100 per cent of the respondents reported a decrease in their business activities due to the pandemic, hence they were all affected. Equally, 100 per cent of the respondents have had a decrease in their income due to COVID-19. This is an indicator that COVID-19 is already having a negative effect on the non-farm and farm businesses even though the situation is still evolving.

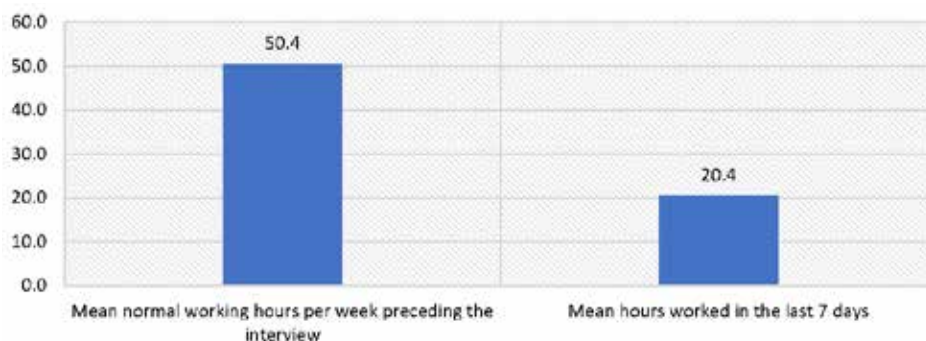
Figure 5.17: Effects of COVID-19 on household non-farm and farm businesses



Source: KNBS, COVID-19 Survey 2020 Labour dynamics

During the period considered in KNBS, COVID_19 Survey 2020, respondents reported a decrease in 30 hours in the mean working hours for household non-farm and farm businesses in Embu County which implies a decrease in economic activities between the interview periods (figure 5.18). This could be as a result of services, agriculture and manufacturing activities considering this considerably form the main stay of the County.

Figure 5.18: Labour dynamics on household non-farm and farm businesses



Source: KNBS, COVID_19 Survey 2020

The survey also indicates the wholesale and retail trade sector lost 13.1 hours in usual and actual hours worked while accommodation and food services lost 10 hours. This is an indicator of the adverse effects of the pandemic on the service sector of Embu County implying loss of productivity, output and employment. Equally, the manufacturing sector was hard hit losing 33.5 hours.

Key Messages:

- (a) The key sectors that drive Embu County economy include: Services, Agriculture and Manufacturing. Hence, support should be targeted to these sectors to ensure re-engineering of the County economy.
- (b) The main constraints faced by establishments in manufacturing include: lack of markets, licenses, local competition, poor roads/transport, poor security and power interruption
- (c) The key constraints faced by MSMEs in Embu County include: local competition, licences, poor roads/transport, lack of markets, and poor security.
- (d) COVID-19 presented opportunities that could be harnessed like development and support of innovations to address the pandemic. These include production of essential goods such as; masks, Personal Protective Equipment (PPEs), and sanitizers, disinfectants, canned foods, immunity boosting products, hospital beds and ventilators. As the pandemic subsides a strategy is required for smooth transition.
- (e) Training and capacity building are important in assisting MSMEs to surmount the shocks faced during the pandemic but also allow for re-emergence.
- (f) In terms of re-engineering, there is need to consider establishing support measures to re-vitalize and re-open businesses that collapsed during the crisis within the county.

5.3 Opportunities with COVID-19 in Industrial Recovery and Growth

The following are some of the opportunities created by COVID-19 in trade, manufacturing and the MSMEs sector:

- (i) Agro - processing for value addition with important areas of focus include horticulture, maize production and processing, and dairy production; other areas of priority include tree tomato, avocado, bananas, loquat, passion fruit, mangoes, macadamia, tea, and coffee.
- (ii) The textile and wearing apparel sectors can be enhanced to provide PPEs for use within the County and potentially for the export market.
- (iii) There are opportunities to step up innovations among the manufacturing firms and MSMEs in Embu County.
- (iv) COVID-19 has increased demand for locally produced goods. It is an opportunity for industry and MSMEs development and generation of jobs for the youth.

5.4 Recommendations

To support trade, manufacturing and the MSMEs sector, the County will:

- (i) Develop a land development strategy that safeguards the high potential agricultural land by setting the urban growth limits to preserve the high potential areas and regulate the subdivision of this land.
- (ii) Develop urban-based agro-industries in Embu town to focus on proximity to agricultural raw materials and promote agricultural value addition.
- (iii) Promote rural development through provision of infrastructure and agricultural sector development and related economic activities.
- (iv) Enhance agricultural production by intensifying the use of the land.

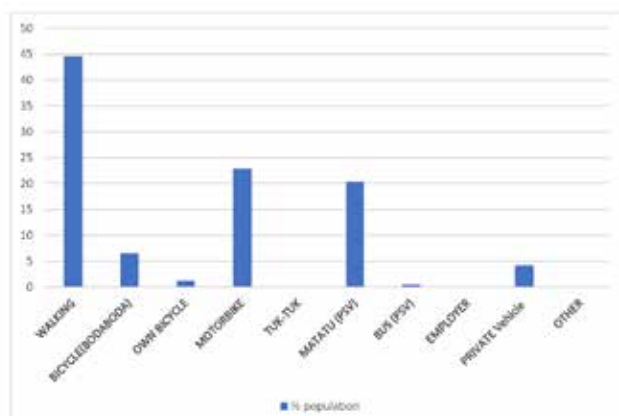
6. Infrastructure

6.1 Transport Sector

6.1.1 Characteristics of the Sector

Majority of households own a bicycle (17.5%) and a motorcycle (13.9%). Car ownership is at 6.6 per cent (KNBS, 2019). The main means of transport used in the county is walking at 44.61 per cent, followed by motorbike 22.79 per cent, PSV matatus at 20.35 per cent, bicycle (boda boda) 6.49 per cent and private car at 4.22 per cent (Figure 6.1) while 69.95 per cent of the population had not changed the main means of transport (KNBS, 2020b). On average, residents travel 4.2 kilometres to their workplace at an average cost of Ksh 70.37. For the commute to school, residents spend on average Ksh 554.41 (KIHBS, 2015/16).

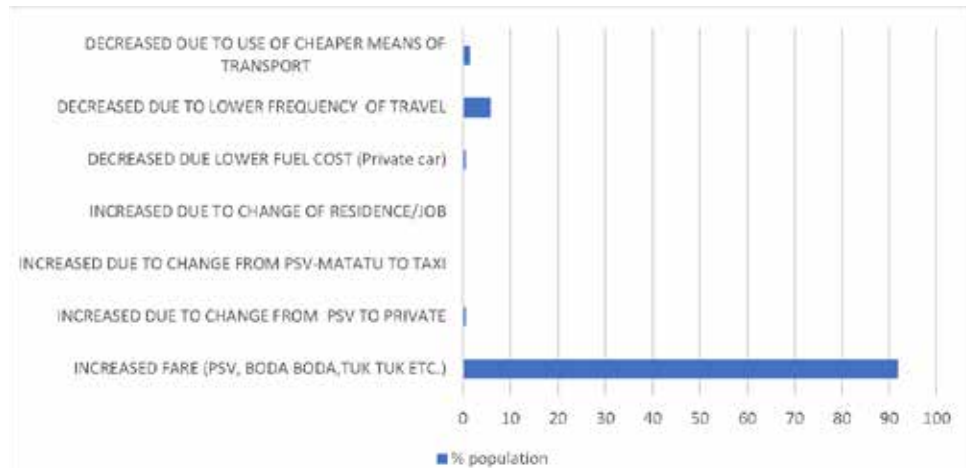
Figure 6.1: Main means of transport



Source: KNBS COVID-19 Impact Survey 2020

The KNBS COVID-19 Impact Survey 2020 revealed that 75.98 per cent of the population reported a change in the cost of travel/commute, figure 6.2. The expenditure on transport increased by 61.43 per cent from Ksh 70 before February 2020 to Ksh 113 in May 2020 for a one-way trip. The main change (91.83%) in transport cost was attributed to increased fares for PSV, BodaBoda and TukTuk.

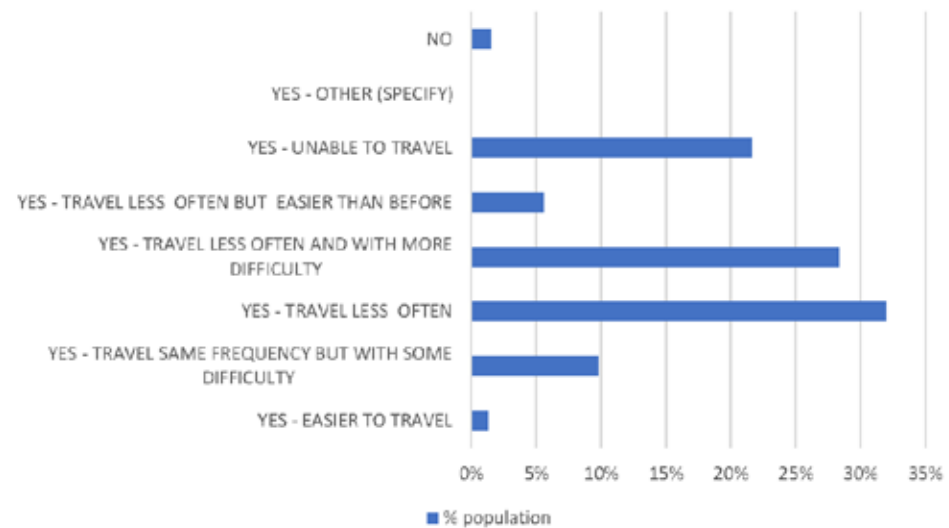
Figure 6.2: How has the cost of your MAIN travel changed?



Source: KNBS COVID-19 Impact Survey 2020-wave 2

Residents had changed their travel patterns with 32 per cent of the population travelling less often, while 9.76 per cent travelled with the same frequency but with some difficulty, and 21.61 per cent were unable to travel. However, 1.53 per cent of the population did not change their travel pattern, figure 6.3.

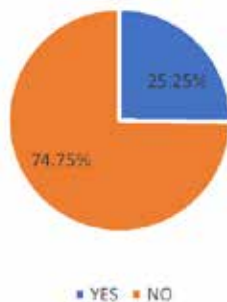
Figure 6.3: Change in travel patterns



Source: KNBS COVID-19 Impact Survey 2020-wave 2

The pandemic has affected delivery of goods and services for 25.25 per cent of households.

Figure 6.4: Has delivery of your household goods and services been affected by COVID-19?



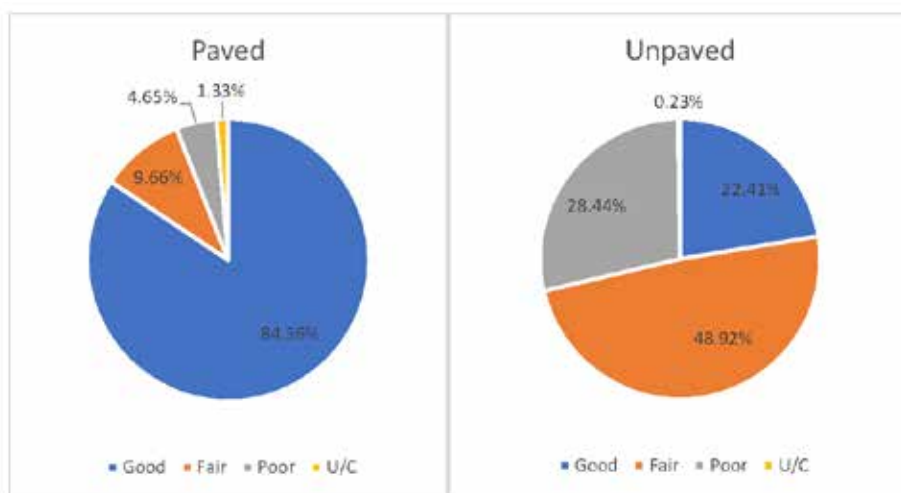
Source: KNBS COVID-19 Impact Survey 2020-wave 2

The county was allocated a total of Ksh 163,522,813 from the Road Maintenance Levy Fund towards road maintenance in the Financial 2017/18 (OCOB, 2019).

Road network

The county has a total of 3,993.42 kilometres of classified road network. The paved County road network covers 56.09 km, while the paved National roads cover 239.17 km. Out of the total paved road network of 295.26 km, 84.4 per cent is in good condition, 9.7 per cent in fair condition and 4.7 per cent in poor condition. The unpaved road network in the county covers 2599.59 km (county roads) and 311.17 km (National roads), of this, 22.4 per cent is in good condition, 48.9 per cent fair and 28.4 per cent in poor condition as depicted in figure 1 (KRB, 2019).

Figure 6.5: Road condition mix-classified road network



Source: KRB (2019)

The unclassified road network in the County covers 787.13 km, with 747.07 km of narrow roads, that is, road with a reserve of between 4 -9 meters, while there is a total of 40.06 km of new roads.

Constraints faced

The Rural Access Index (RAI) measures the proportion of the rural population who live within 2 km of an all-season road⁵. The county has a RAI of 77 per cent which is above the National Average of 70 per cent, indicating that access to transport in rural areas is above average (KRB,2019). This has positive implications with regard to sectors that rely on accessibility such as agriculture, trade and overall development. The road condition mix of the unpaved network at 28.4 per cent is a constraint to development.

Linkages to other sectors

Transport has linkages in providing accessibility to the agriculture sector for inputs and market access.

6.1.2 Opportunities in Infrastructure

The county has the opportunity to strategically improve the road network for economic development, while creating jobs for youth, women and vulnerable groups as espoused in the Roads 2000 programme⁶ on labour based road development approaches.

The Roads 10,000 programme being implemented nationally by the roads sub-sector actors, and specifically, the Low Volume Sealed Roads (LVSR) approach⁷ offers a strategic and cost-effective approach to improve rural accessibility in the County.

Residents predominantly rely on matatu walking and motorbike this is an opportunity during the pandemic period as this mode reduces the risk of infections that would arise from use of motorized public transport⁸.

6.1.3 Emerging Issues

- Poor road conditions for unpaved road network.

⁵ RAI defined : <https://datacatalog.worldbank.org/dataset/rural-access-index-rai>

⁶ Roads 2000 programme <http://krb.go.ke/our-downloads/roadsper cent202000per cent20strategicper cent20plan.pdf>

⁷ LVSR /Roads 10,000 programme <https://www.kerra.go.ke/index.php/lvsr>

⁸ Non-Motorized Transport strategy <https://www.weforum.org/agenda/2020/05/cities-support-people-walking-and-cycling-work/>

6.1.4 Recommendations

- (i) Sensitize PSV and boda boda operators on COVID-19 prevention measures and assist vehicle owners in retrofitting vehicle designs for social distance, hygiene and ventilation.
- (ii) Improve and expand infrastructure for Non-Motorized Transport (NMT) in urban areas and along roads with heavy -high speed traffic to promote sustainable mobility options and enhance road safety for all road users. This is in line with the Integrated National Transport Policy 2009 and the Sustainable Development Goals⁹.
- (iii) Re-develop bus parks and termini to address crowding and social distancing concerns stipulated in the public health guidelines.
- (iv) Identify county significant infrastructure projects, with project speed emphasis, for implementation to support economic recovery from the effects of the pandemic.
- (v) Apply labor based and local resource-based approaches for road development and maintenance, where technically and economically feasible, in line with the Roads 2000 national policy¹⁰.
- (vi) Focus on increasing the share of unpaved roads in good and fair condition to above 62 per cent which is the national average. For the unpaved road network, focus on adopting the Low Volume Sealed Roads (LVSR) technology for greater network coverage cost effectively.
- (vii) Adopt climate smart road engineering designs to safeguard road and bridge infrastructure from floods and to harvest storm water for irrigation and productive use. Use the Kenya Urban Support Programme funding to build storm water management systems in urban areas.

6.2 Information and Communication Technology

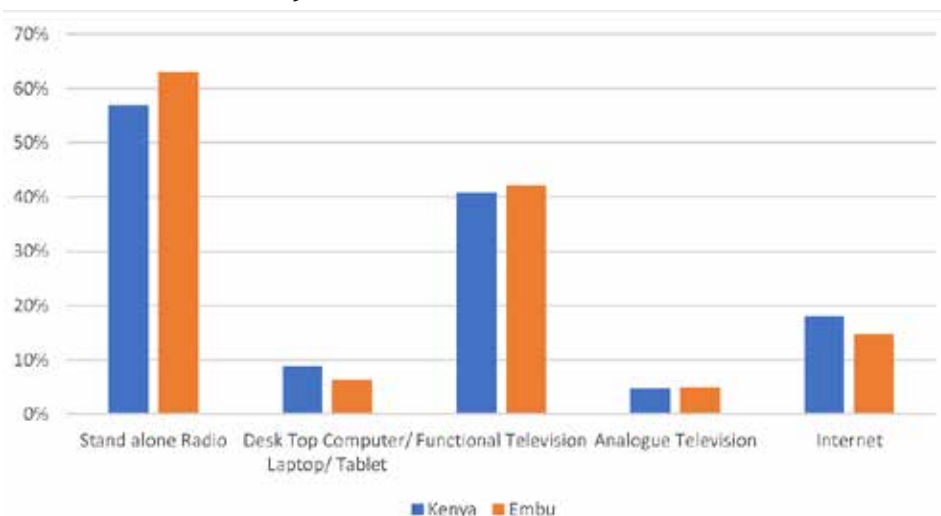
6.2.1 Characteristics of the Sector

The analysis of the 2019 KPHC reveals that only 14.7 per cent of the conventional households in the county 'own' internet with 6.3 per cent owning a desktop, computer laptop or tablet. Internet access, ICT device ownership and TV ownership is particularly critical not only for access of COVID-19 information, but as well as supporting remote learning by the pupils as well as remote working (figure 6.6).

⁹ Sustainable Mobility for All: <https://sum4all.org/implementing-sdgs>

¹⁰ Roads 2000 programme <http://krb.go.ke/our-downloads/roadsper cent202000per cent20strate-gicper cent20plan.pdf>

Figure 6.6: Percentage distribution of conventional households by ownership of ICT assets KPHC 2019



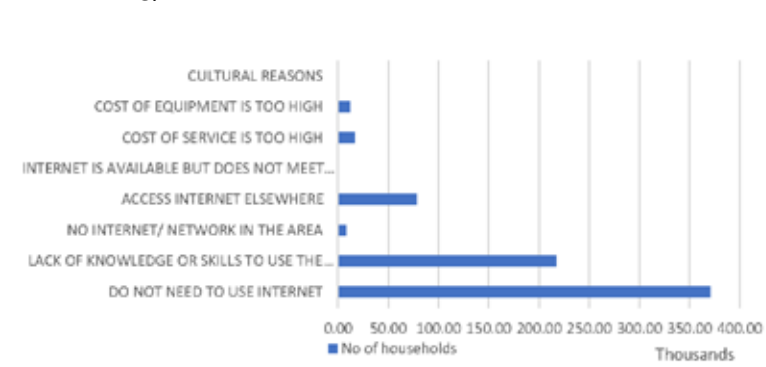
Source: KNBS, 2019- Kenya Population and Housing Census

Online shopping is not prevalent in the County. 2.5 per cent of the conventional households searched and bought goods/services online. There exists gender disparity in online shopping with more men (2.7 per cent) than women (2.3 per cent) undertaking online shopping.

The perception of that the individuals do not need to use the internet, lack of knowledge and skills on internet are the leading reasons that the people of in the County don't have internet connection (KIHBS, 2015/16). Other key factors include the lack of internet/network in the area, and the high cost of service and equipment, figure 6.7.

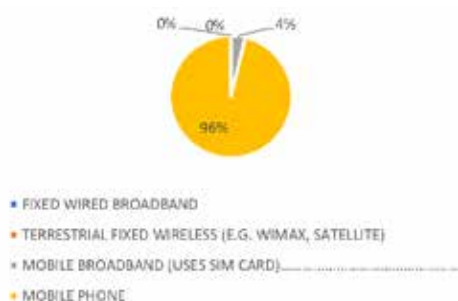
Approximately 96 per cent of the internet users in the county rely on mobile phone for connectivity, with a marginal population of 4 per cent relying on mobile broad band that uses a sim card for connectivity, figure 6.8.

Figure 6.7: Why doesn't this household have any type of internet connection? KHIBS 2015/16



Source: KHIBS 2015/2016

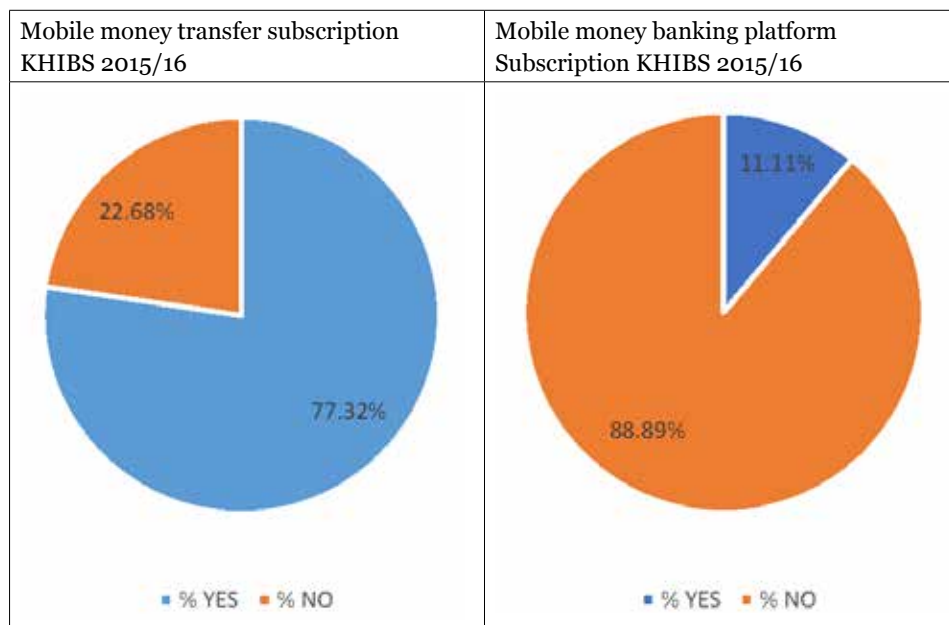
Figure 6.8: Type of internet connection



Source: KHIBS 2015/2016

Approximately 57 per cent of the population aged 3 years and above own a mobile phone which is lower than the national average of 47.3 per cent. Approximately 77.3 per cent of the people in the county have a mobile money subscription compared with only 11.1 per cent that have mobile money banking platform subscription (KHIBS 2015/16)

Figure 6.9: Mobile money transfers subscription and mobile money banking platform



Source: KNBS (2016), KIHBS (2015/16)

The county experienced gender divide in use of internet and ICT devices as well as mobile money subscriptions. Both internet and ICT device use are higher among the male with 23.6 per cent of the men and 20.6 per cent of the women using internet, while 10.2 per cent of the men and 8.7 per cent of the women using Desktop/Laptop/Tablet devices (KPHC 2019). While the usage is below the national averages, the county recorded a similar gender disparity with the national averages in internet and ICT usage.

Constraints faced

- (i) Low household ownership and use of ICT assets
- (ii) Low penetration of e-commerce
- (iii) Households perceive that they do not need to use the internet,
- (iv) Households lack knowledge and skills on internet

Linkages to other sectors

- ICT is applicable in public service delivery for business continuity during time of lockdowns, emergencies and disasters.
- Public primary schools have been provided with ICT infrastructure and services for digital literacy.

6.2.2 Opportunities in ICT

- (i) Potential to use ICT infrastructure and services in public primary schools for community access to ICT.
- (ii) Emerging technology such as satellite and airborne transmitters for internet connectivity.
- (iii) Potential to create and transform home based economies dependent on e-commerce **for women and youth.**

6.2.3 Recommendations

- (i) Support programmes in partnership with the private sector that will enable households acquire ICT assets such as smart phones and laptops and increase mobile phone ownership from the low of 57.0 per cent to 100 per cent in line with the global agenda for Universal Access to Mobile Telephony¹¹
- (ii) Collaborate with the Communications Authority of Kenya and telecom service providers to utilize the Universal Service Fund¹² as a “last resort” in providing ICT access in remote areas where market forces fail to expand access.
- (iii) Speed up the construction of fiber-optic broadband networks in underdeveloped areas and collaborate with telecom companies to upgrade and improve the communication networks in remote areas. Adopt programmes to ensure ubiquitous access to reliable and affordable internet (internet everywhere) by applying aerial and satellite-based communication technologies.
- (iv) Harness the power of technology and use innovative solutions to bridge the gender digital divide. Negotiate with the public primary schools for community access to ICT infrastructure and collaboratively build and equip youth empowerment, ICT centres and ICT laboratories as provided in the CIDP. The IT personnel in public primary

¹¹ Universal access to mobile telephony: <http://www.itu.int/itu-news/manager/display.asp?lang=en&year=2007&issue=07&ipage=universal-telephony>

¹² Universal Service Fund: <https://ca.go.ke/industry/universal-access/purpose-of-the-fund/>

schools can be deployed to support the development of ICT competence and skills among the public.

- v) Enhance internet connectivity to public buildings and key trade centres to boost e-commerce especially for MSMEs in trade and business. The NOFBI programme can be expanded to the sub-county administrative units to further enable deployment of e-governance solutions.
- vi) Make ICT a standalone sector for planning and budget allocation. This is aimed at giving strategic prominence to planning, budgeting and investment in ICT.
- vii) Review and implement ICT policies and procedures to manage ICT and mitigate cyber threats. Collaborate with the national Computer Incident Response Team (CIRT) and the Communications Authority (CA) towards managing cyber threats, disasters and pandemics. This is because enhanced use of ICT is known to raise threats and risks related to cyber-crime and misinformation.

7. Housing and Urban Development

There are three urban centres in the County with a total population of 48.8 per cent males and 51.1 per cent females, table 7.1. The urban land area covers 42 square kilometres with a population density of 1800 persons per sq.km

Table 7.1: Distribution of population by urban centres by gender in Embu County

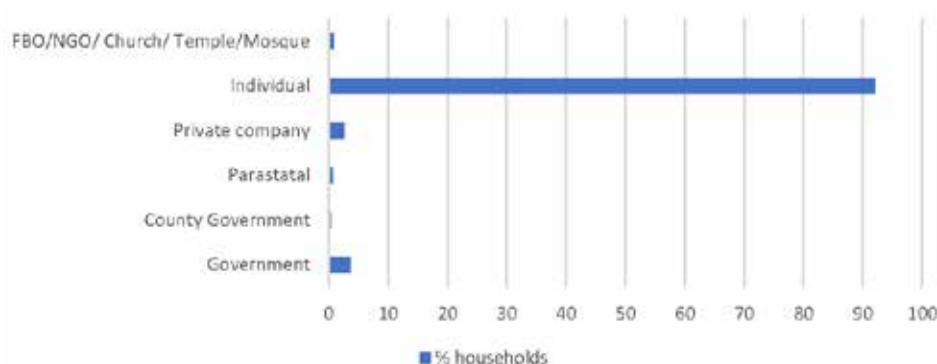
| Urban Centre | Population | Male | Female |
|--------------|------------|--------|--------|
| Embu | 64,979 | 31,782 | 33,188 |
| Runyenjes | 4,943 | 2,406 | 2,537 |
| Siakago | 4,315 | 2,078 | 2,237 |

Source: KNBS 2019- Kenya Population and Housing Census

7.1 Characteristics of the Sector

The housing tenure is predominantly owner occupied at 73.0 per cent, with 27.0 per cent of the households under rental tenure. Individuals are the primary providers of rental housing at 92.0 per cent, followed by National Government (3.7%); and Private Companies (2.6%), Figure 7.1. For those who own homes, 96.3 per cent constructed the houses while 0.9 per cent purchased the house and 2.8 per cent inherited their homes (KNBS, 2019).

Figure 7.1: Distribution of households renting/Provided with the main dwelling unit by provider



Source: KNBS, 2019 -Kenya Population and Housing Census

Majority of households are headed by men (63.6%) compared to women (36.4%) in the County (KIHBS, 2015/16).

Housing quality

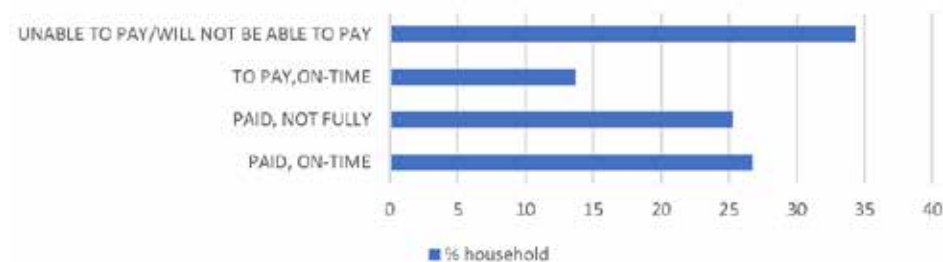
On average, the main dwellings of houses in the County have 3.09 habitable rooms against an average household size of 4.23 persons in a household, translating to approximately 1.37 people per room. According to the UN-Habitat, overcrowding occurs when there are more than three people per room¹³. In terms of housing quality (building material), 73.46 per cent of houses are constructed using finished materials for walls, floor and roofing compared to 26.54 per cent constructed using rudimentary materials (KIHBS, 2015/16). Majority of households (95.0 per cent) have iron sheets for roofing, bricks walls (20.9 per cent) and Concrete/Cement/Terrazo floors (50.9%) (KNBS, 2019).

Rent payment

On average, rental households spend approximately Ksh 4610 on rent with a minimum of Ksh 500 and the maximum of Ksh 15000 (KNBS, 2020b). The county recorded a rent to income ratio of 15.82 per cent which is within the acceptable threshold of 30 per cent (KNBS, 2012/13).

With the advent of COVID-19 pandemic, households' ability to pay rent has been affected, with 34.29 per cent of the population indicating inability to pay rent on the agreed date for April 2020, figure 7.2, compared to 26.7 per cent of the population that were able to pay rent on the agreed date and 47.76 per cent who paid rent on agreed date before COVID-19 pandemic, figure 7.3.

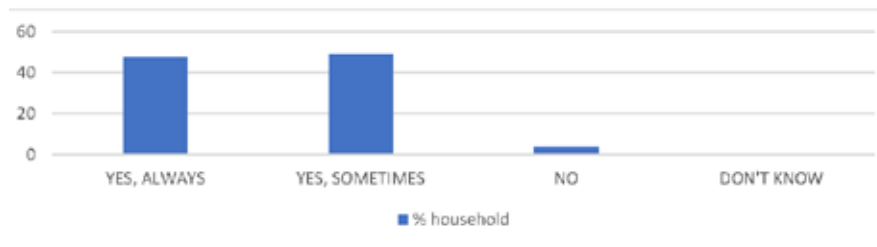
Figure 7.2: Has your household paid the rent for April 2020 on the agreed date



Source: KNBS COVID-19 Impact Survey 2020-wave 2

¹³ Household crowding measure: [https://www.ncbi.nlm.nih.gov/books/NBK535289/table/ch3.tab2/#:~:text=Overcrowdingper cent20occursper cent20ifper cent20thereper cent20are,perper cent20habitableper cent20roomper cent20\(88\).&text=Crowdingper cent20occursper cent20ifper cent20thereper cent20is,per cent20Drooms\)per cent20\(89\).](https://www.ncbi.nlm.nih.gov/books/NBK535289/table/ch3.tab2/#:~:text=Overcrowdingper cent20occursper cent20ifper cent20thereper cent20are,perper cent20habitableper cent20roomper cent20(88).&text=Crowdingper cent20occursper cent20ifper cent20thereper cent20is,per cent20Drooms)per cent20(89).)

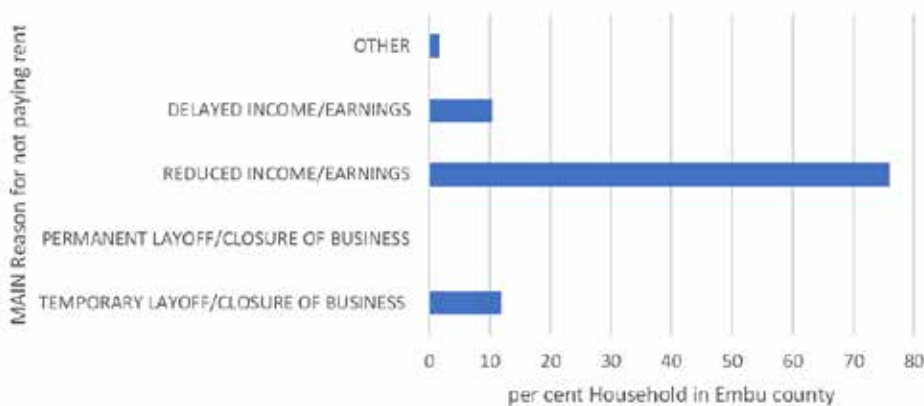
Figure 7.3: Was the household paying rent on the agreed date with the landlord before COVID-19?



Source: KNBS COVID-19 Impact Survey 2020 wave 2

The main reason that has made households unable to pay rent was attributed to reduced incomes /earnings, reported by 75.89 per cent of the population. The inability to pay rent was attributed to the COVID-19 pandemic by 94.31 per cent of the population, figure 7.4.

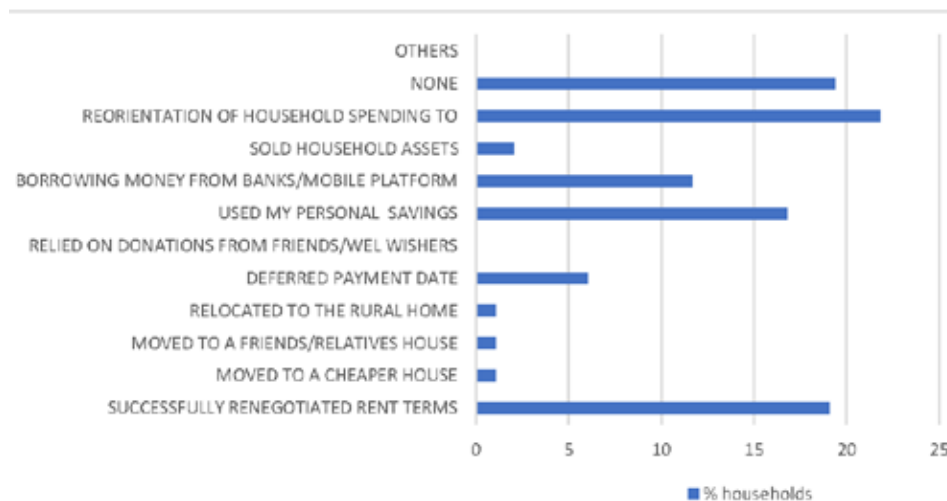
Figure 7.4: What is the MAIN reason that has made your household unable to pay rent?



Source: KNBS COVID-19 Impact Survey 2020 wave 2

Majority of the households (81.32%) did not receive a waiver or relief on payment of rent from the landlord, with 4.15 per cent reporting a partial waiver and 1.04 per cent reporting a full waiver. To overcome the effects of Corona virus on payment on rent, majority 19.08 per cent of households renegotiated rent terms, while 19.41 per cent of households did not take any measures. Approximately 16.81 per cent used personal savings to pay rent (Figure 7.5).

Figure 7.5: What measures has your household taken to overcome the effects of Corona Virus – rent



Source: KNBS COVID-19 Impact Survey 2020-Wave2

With regard to primary energy source for cooking, 80.5 per cent of households rely on unclean sources of energy for cooking such as firewood, paraffin and charcoal, which could adversely affect respiratory health of women and children.

Constraints faced

- (i) Household inability to pay rent due to livelihood shocks

7.2 Opportunities in housing and Urban development

- (i) Partnership with National Government and Private Sector for home improvement (roof, floor and walls) under the Big Four Agenda.

7.3 Emerging Issues

- (i) Existing stock of owner-occupied homes that can be improved using finished building materials for roofing, walls and floors.

7.4 Recommendations

- (i) Avail appropriate building technology for use by the public in house construction and improvement in every sub-county, that responds to local cultural and environmental circumstances.
- (ii) Fast-track implementation of the affordable housing programme with a focus on improving living conditions and building quality applying finished materials for walls, floors and roofing.

- (iii) Identify and designate urban centres for upgrade pursuant to provisions of the Urban Areas and Cities (amendment) Act, 2019.
- (iv) Develop and implement urban planning and design instruments that support sustainable management and use of natural resources and land in line with the New Urban Agenda and as mitigative measure to future pandemics and disasters.
- (v) Formulate and seek approval of urban development plans and development control policies to support investment and development of urban areas.
- (vi) Adopt programmes aimed at an increasing household access to clean energy sources and technologies for cooking to mitigate against exposure to respiratory diseases.

8. Tourism

8.1 Characteristic of the sector

Tourism is a key sub-sector in Embu County that has a high potential in the county for both local and international tourists. Some of the available sites include caves, waterfalls and rocky hills (Karue, Kianjiru, Kiambere, Ndune, Kirimiri, Maranga, Kiang'ombe) to support hiking; Kamburu and Masinga hydro-electric power dams; Mt Kenya and Mwea National Parks that host various wildlife (including elephants, Zebra, Buffalo; Elephant, lesser kudu, Nile crocodile, hippo, giraffe, Burchell's zebra, buffalo, leopard, grey duiker, black-backed jackal, bushbuck, waterbuck, olive baboon, sykes' monkey, serval cat, spotted hyena, warthog) and over 200 bird species. The Mwea Game Reserve is the only protected area in which the globally threatened and Kenya-endemic Hinde's babbler is known to occur. Embu is also a gateway to Mt. Kenya which, if aggressively marketed can bring huge incomes to the county. Other attractions include 3751 Ha of forests that supports eco-tourism; Agro-tourism (coffee and tea plantations); medical tourism (Traditional herbalists and medicine men; Embu referral hospital).

Development and recurrent expenditure incurred on the Trade, Tourism, Investment, and Industrialization sector in 2013-2017 was only 1.2 per cent and 0.4 per cent respectively of the total spending; while in the same period, accommodation and food services accounted for 0.8 per cent of total GCP. This indicating the need to prioritize development of the tourism sector.

8.2 Opportunities with COVID-19 in Tourism

Existing stock of owner-occupied housing.

- (i) Improving sanitation aspects in tourism attraction sites.
- (ii) Refurbishment of accommodation facilities
- (iii) Promoting domestic tourism

8.3 Emerging Issues

Sanitation is a key component in ensuring business continuity in the tourism sub-sector.

8.4 Recommendations

- (i) Promotion of domestic tourism to cushion the economy from impacts of travel advisories and constraints caused by the pandemic on international tourist arrivals.
- (ii) Regular maintenance of tourism attraction sites.
- (iii) Tourism marketing and promotion
- (iv) Diversification of tourism products.
- (v) Opening of access routes to the tourist sites.
- (vi) Community sensitization on tourist sites in the county.
- (vii) Promotion of eco-tourism, cultural and sports tourism in the 6 main rivers (Tana, Rupingazi, Kii, Ena, Thiba, Thuci) and two hydro-electric dams.
- (viii) Development of tourism infrastructure (route to Mt. Kenya, star-rated hotels, tourist sites, tented camps).
- (ix) Enforcing guidelines on high sanitation standards for the hospitality sector to stop the spread of COVID-19 and other pandemics while ensuring business continuity.
- (x) Inspect all the tourism establishments in the county and train tourism service providers.

9. Health

9.1 Characteristics of the Sector

General health provision in the county

The government owned 50 per cent of the facilities, 33 per cent of these facilities were owned by private and 17 per cent owned by faith-based organizations. However, government indicating increased reliance on public facilities for curative healthcare services owns approximately 56 per cent of the health centres and hospitals.

Table 9.1: Health provision

| Year | 2018 | 2019/20 |
|--|-------|---------|
| Health facility density | | |
| Primary health facilities | 141 | 210 |
| Hospitals | 8 | 8 |
| Number of health facilities | 149 | 218 |
| Health facility density | 2.5 | 3.2 |
| Bed density | | |
| Hospital beds | 1,576 | 1,648 |
| No. of Beds per 10,000 population | 24 | 24 |
| Human resource density | | |
| Total workforce | 2,966 | 2,858 |
| Human Resources for Health (Technical) | 2,268 | 2,282 |
| Number per 10,000 population | 42.5 | 45.9 |

Source: Ministry of Health (2021)

In 2019/2020, the number of health facilities in the county were 218 which comprised of 210 primary health facilities and 8 hospitals. This was an improvement from a total of 149 health facilities in the previous year, 2018. The number of beds per 10,000 population is 24 which is lower than the WHO recommendation of 30 beds per 10,000 population. The health facilities and personnel serve a growing population of 608,599 people according 2019 census. In 2019/20, total health workforce was approximately 2,282 representing 45.9 health workers per 10,000 population which is higher than the WHO target of 23 health workers per 10,000.

Table 9.2: Percentage distribution of the population that reported sickness/ injury by type of health provider in the county (%)

| Type of Health Provider | Percentage Distribution of the Population |
|---|---|
| Government hospital | 28.1 |
| Government health centre | 7.7 |
| Government dispensary | 37.8 |
| Faith Based (church, Mission) Hospital / Clinic | 1.6 |
| Community Health | 0.0 |
| Private hospital / clinic | 27.2 |
| Nursing/ Maternity Home | 0.4 |
| Pharmacy/ chemist | 0.8 |
| Community health worker | 0.0 |
| Shop/ Kiosk | 0.0 |
| Traditional healer | 0.0 |
| Faith healer | 0.0 |
| Herbalist | 0.3 |
| Other | 0.0 |
| Number of Individuals ('000) | 102 |

Source: KIHBS 2015/2016

Table 9.2 presents the distribution of population reported to have been sick or injured and the type of health provider they visited. Majority of the County residents who reported illness visited government dispensaries at 37.8 per cent followed by those who visited government hospitals and private hospitals at 28.1 per cent and 27.2 per cent, respectively. About 7.7 per cent visited government health centres, while 1.6 per cent visited Faith Based (church, Mission) Hospital / Clinic.

Population with health insurance cover

The percentage distribution of the population with health insurance cover by type of insurance provider is presented in Table 9.3. In general, 32.7 per cent of the county population had some form of health insurance cover. The National Hospital Insurance Fund (NHIF) was the leading health insurance provider reported by 94.5 per cent of the population. Employer contributory insurance cover was reported by 3.3 per cent of the population. Private contributions to insurance cover were reported by 2.9 per cent of the population.

Table 9.3: Percentage distribution of the country's population with health insurance cover by type of health insurance provider (%)

| Source of Health Insurance | Percentage Distribution of the Population (per cent) |
|--|--|
| Population ('000) | 560 |
| Share of population with health insurance (per cent) | 32.7 |
| NHIF | 94.5 |
| Private-Contributory | 2.9 |
| Private-Non-Contributory | 0.7 |
| Employer-Contributory | 3.3 |
| Employer-Non-Contributory | 0.1 |
| Other | 4.5 |
| Number of Individuals ('000) | 183 |

Source: KIHBS 2015/16

Place of delivery

In the 2015/16 KIHBS, women in Embu county were asked the place where children aged 5 years and below were delivered. Table 9.4 shows the percentage distribution of children by place of delivery, in the county. About 20.2 per cent of children were delivered at home which is below the national percentage of 31.3 per cent. The proportion of children born in hospitals, health centres, dispensary/clinics was 61.1 per cent, 15.3 per cent, and 1.4 per cent respectively.

Table 9.4: Proportion of children aged 0-59 months by place of delivery (per cent)

| Place of Delivery | Proportion of Children aged 0-59 Months by place of delivery (per cent) |
|-------------------------------------|---|
| Hospital | 61.1 |
| Health Centre | 15.3 |
| Clinic/ Dispensary | 1.4 |
| Maternity Home | 0.0 |
| At Home | 20.2 |
| Other | 0.0 |
| Not stated | 1.7 |
| Number of Individuals ('000) | 57 |

Source: KIHBS 2015/16

Immunization for children

The 2015/16 KIHBS covered data on measles immunization for children below 5 years at; 9 months (Measles I) and at 18 months (Measles II). The information was collected from vaccination cards where they were available while mother's recall was used where the card was not available. Table 9.5 presents information on the proportion of children immunized (from vaccination cards) against measles. The analysis focused on children aged 12-23 months (or one year). The county had 53.1 per cent of the children aged 12-23 months were fully immunized against measles at 9 months while 21.6 per cent were fully immunized against measles at 18 months.

Table 9.5: Proportion of children aged 0-59 months immunized against measles

| | | Proportion of Children |
|-------------------------------------|--------------------------------------|------------------------|
| Vaccination Card | Yes Seen | 67.0 |
| | Yes, Not Seen | 26.3 |
| | No | 6.7 |
| | Not stated | 0.0 |
| Measles Vaccination | Measles I (At 9 months Card) | 53.1 |
| | Measles II (At 18 months Card) | 21.6 |
| | Measles II (Mother/ Guardian memory) | 30.5 |
| | Either (card or memory) | 83.6 |
| Number of Individuals ('000) | | 57 |

Source: KIHBS 2015/16

Health outputs

The main conditions causing morbidity are outpatient health facility visits and mortality in the county across all ages were upper respiratory tract infections, malaria, skin diseases, and diarrheal diseases. The conditions attributed to several risk factors in the environment in which the people of Embu live in, such as inadequate water, and inadequate ventilation. The prevalence of injuries is attributed to poor road condition largely while malaria is attributed to seasonal flooding. An underlying factor across the conditions among populations with low socio-economic status include low immunization coverage, lack of adherence to exclusive breast feeding, and poor nutrition.

In terms of inpatient morbidity cases, the main contributors to the burden are both communicable and non-communicable diseases such as diarrhoea diseases, malaria, pneumonia, peptic ulcers, hypertension, psychosis, poisoning, diabetes, anaemia, and road injuries. Notably, abortion is also a contributor to admissions indicating that there is gap in provision of family planning and other reproductive health services. The associated morbidities risk factors for other conditions include inadequate water, inadequate

ventilation, lifestyle habits, poor health seeking behaviours, drugs, and alcohol abuse as well as inadequacies in diagnosis and treatment.

The most affected groups during COVID-19 pandemic were the infant, young children, mothers, adults and elderly. For instance, the maternal and child services indicators indicate that 86 per cent of mothers accessed skilled delivery, while about 16 per cent of the children are born at home and 82 per cent of children get full immunization. This implies almost 1 in 5 children are at the risk of getting diseases, poor health and immunity system. The infant mortality rate and under-five mortality is high recorded as 44 deaths per 1000 births and 49 deaths per 1000 births respectively.

The county proportion of stunted children of 26.8 per cent, wasted children of 3 per cent and underweight children of 11.1 per cent almost at par with the national averages of 26 per cent, 4 per cent and 11 per cent respectively. Additionally, the HIV adult prevalence stood at 2.8 per cent, with adult and child ART coverage standing at 80 and 87 per cent. The county performed relatively better than national averages in terms of the low prevalence of communicable conditions including HIV, Malaria and TB.

Table 9.6: Health sector performance

| Key Health Indicators | County Estimates |
|------------------------------------|------------------|
| Maternal and Child Services | |
| Skilled delivery (per cent) | 81.5 |
| Children born at home | 16.2 |
| Fully immunized child | 85.5 |
| Child Mortality | |
| Infant mortality (* /1000) | 44 |
| Under-5 mortality (* /1000) | 49 |
| Neo-natal mortality (* /1000) | 0 |
| Nutrition Status | |
| Stunted children (per cent) | 26.8 |
| Wasted children (per cent) | 3 |
| Underweight children (per cent) | 11.1 |
| HIV (per cent) | |
| HIV adult prevalence (per cent) | 2.8 |
| Children with HIV(No.) | 0 |
| ART adult coverage (per cent) | 80 |
| ART children coverage (per cent) | 87 |

Source: KDHS (2014); DHIS 2018

The county established 404 beds in readiness for management of COVID-19 cases, and another 18 ICU beds for those who may need critical care. To support the ICU, the County had also put in place an oxygen plant in the main isolation centre in Embu Level 5 Hospital, which runs at 80 litres per minute. The county had also cascaded services to manage the spread of the virus to all the four Sub-Counties through the county emergency response

team. The county had also put in place other measures to mitigate the impact of pandemic. This included the prioritization of health services, identifying and setting up centers for COVID-19 pandemic to limit interference and contact with those seeking services in the big hospital. The county also identified and set up centres for the pandemic making them COVID-19 centres to ensure there was no interference with services in the main hospital.

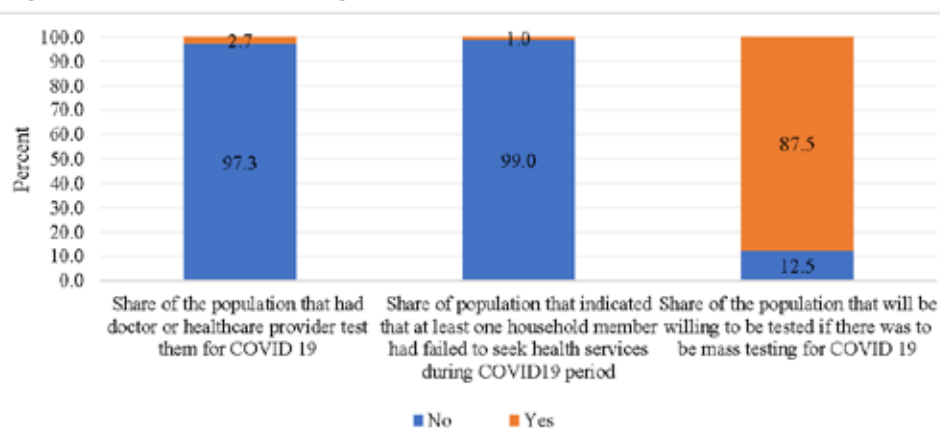
Recruitment for more health workers was carried out to boost the human resource (nurses and clinical officers) in the hospitals. The county also offers counselling services to her health care professionals over and above the safety measures for the front-line health providers. To enhance mobility and access, the county had purchased a new vehicle to facilitate more efficient transportation of reagents to Nairobi, which is depended upon for testing services.

However, the county faced some drawbacks in the fight against the pandemics for some instances. The county had shortage of doctors, nurses and specialists. Most of the healthcare workers in the county required adequate training on the COVID-19 management protocols and infection prevention. The County had two isolation centres. Inadequate PPEs among the frontline healthcare workers working in various health care facilities. The health sector needs to focus on empowering the workforce and upgrading of working conditions and provision of requisite health commodities and equipment, especially in relation to personal protective equipment and occupational safety, implementing the following strategies.

Effects of COVID-19

In June 2020, Kenya National Bureaus of Statistics conducted a survey of COVID-19. The results showed share of the population that had doctor or healthcare provider testing or confirming to them the status in regards COVID-19 was estimated at 2.7 per cent in 2020 (COVID-19, Wave 2 survey). Further only 1 per cent of the population indicated that at least one household member had failed to seek health services and 87.5 per cent of the population indicated they will be willing to be tested if there was mass testing for COVID 19.

Figure 9.1: COVID-19 testing, 2020



Source: COVID-19 Wave 2 (June 2020)

As per the latest National Adolescents and Youth Survey (NAYS) report of 2020, the main health problems affecting young people are teenage pregnancies, drug and substance abuse (DSA), STI and/or HIV and AIDS infections, malnutrition, mental health problems, SGBV and abortion. Other problems identified were poor sanitation and existence of diseases such as malaria. Other causes of the health issues in the county were high levels of poverty in households, fear of knowing HIV status. Addiction to drugs and substance abuse, idleness, parental negligence / lack of parental guidance and lack of or inadequate health information and services

COVID-19 has worsened the situation as far as youths and women were concerned. These groups had faced several challenges even before the outbreak of the COVID-19. FGM and Gender based violence cases had increased with the lock down.

9.2 Opportunities with COVID-19 in Health Sector

DANIDA Health Sector Programme Support III (Kenya) introduced Nomadic Clinics which can help handle community support for any emerging health issues including COVID-19 cases. The clinics offer basic health services such as immunization and skilled birth attendance. To ensure further outreach motorbikes are attached to each clinic and these are sent out into the community in special circumstances such as to ensure that children do not miss their immunization shots.

World Vision had donated hundreds of water tanks, over 1000 liquid hand soaps ,700 litres of hand sanitizers and 10 fumigating equipment in a programme aimed at creating awareness on the need to do regular hand washing. The World Vision also partnered with the public health officials in the county to train and sensitize the public over COVID-19.

The Safaricom foundation had also handed over PPEs to benefit around 300 healthcare workers in two health centres and an isolation facility. The PPEs included N95 Masks, Surgical masks and protective clothing. The Kenya Red cross in partnership with Safaricom foundation also support the county in helping the households affected by flood.

9.3 Emerging Issues

Hepatitis B and Snakebites are two emerging conditions which are of public health concern in the county. There is an upsurge of cases of Hepatitis B in the lowland areas of the county. Inadequate community awareness on the prevention of transmission of Hepatitis B is considered a contributing factor. Snakebites incidences are also common and are attributable to human animal wildlife conflict. There is an acknowledged gap in capacity of health care workers to treat snakebites and lack of supply of anti -venom; hence implying expected demand for referral services.

The most common cases of referrals relate complications in the County are chronic kidney diseases, broncho-pneumonia, intestinal obstruction, and acute anemia. These critical conditions do require a functional ICU and a blood transfusion unit which have yet to be completed and operationalized.

Due to the stigma of COVID-19, the health-seeking behavior of the Embu citizens had also

been affected. There was a decline in the number of pregnant women attending maternal child health clinic thereby increasing their risk of early and late pregnancy complications. In addition, there was acute decline in the number of children going for immunization services therefore this could lead to increased susceptibility of these children to infections and nutritional imbalances.

Access to other services like patient support centres (PSC) for People Living with HIV (PLHIV) was also at risk as people shy away from health facilities; causing another risk of likely surge in new HIV infections and reduced viral suppression.

9.4 Recommendations

In line with the health status in the county, some of the recommendations that need attention include the following:

- (i) The need creates awareness on availability and importance of free maternity services and address other constraints to access of maternal health services in the county to address fear of contracting COVID19 in event of visiting a health facility.
- (ii) In addition, the County needs to consistently allocate resources towards nutrition specific and sensitive programmes in the various sectors by establishing specific budget lines for nutrition support initiatives.
- (iii) Adopt community health outreach programs to sensitize its members to adopt proper health seeking behaviours that could have been affected due to the stigmatization that comes along with the pandemic.
- (iv) The county government through the Department on planning will need to secure full board accommodation to the frontline healthcare workers to minimize cross-infection.
- (v) The county government will need to sensitise expectant women on the need to attend regular antenatal clinics for checkup and the caregivers of children need to be sensitized on the importance of immunization.
- (vi) Revamp, expand, modernize and equip existing health facilities such as Embu Level 5 hospital as well as recruiting additional public health officers and community health workers to strengthen preventive and primary health systems in the County.
- (vii) Implement a comprehensive human resource health management system including undertaking training needs assessments and strengthening information system including contact tracing; ensure skilled, motivated and equitable deployment of health care workers.
- (viii) Promote and support public and community health including the installation of hand washing facilities in homes, and public and private institutions such as schools, workplaces and health care facilities within all the sub counties of Embu County.
- (ix) Proactively address the mental health needs including those of the health workforce,

mental illnesses from depression, especially in response to shut downs. Establish counselling office specifically for the people affected by COVID 19 in all health facilities in the County.

- (x) Provide appropriate antenatal care for high risk women in the current pandemic while encouraging all mothers to visit hospitals while taking precautions in preventing contracting the virus, and any other infectious diseases.

10. Education and Training

10.1 Characteristics of the Sector

General Education Provision in the County

Embu County has a total of 619 pre-primary centres, 552 primary. Infrastructures are in place to support water and sanitation efforts in learning institutions by the county. The county had rolled out plans to provide hand washing facilities in schools.

About 84.9 per cent of public primary schools in Embu County had been installed with ICT infrastructure and devices under the Digital Literacy Programme (DLP) (ICT Authority, 2019). The infrastructures include learner digital devices (LDD), teacher digital devices (TDD) and the Digital Content Server and Wireless Router (DCSWR).

There are 519 primary schools in the county: 385 public schools and 134 private. Total enrolment in primary schools stands at 124,774: 101, 425 in public primary schools and 23,349 in private primary schools. The average school size of public primary schools is 263, while in private primary schools is 174. The primary gender parity index in Embu County is 0.95. The primary pupil teacher ratio is 26:1.

The total number of secondary schools is 212: 197 public and 15 private. The total enrolment in secondary schools is 56,607; 54,368 enrolled in public schools and 2239 in private schools. The average class size in public secondary schools is 276 and 149 in private secondary schools. The gender parity index in secondary schools is 1.09. The pupil teacher ratio in secondary schools is 25:1.

The number of ECDE centres in the county stood at 610 of which 390 are public while 220 are private as at 2015. The total enrolment in ECDE centres is 22,010: 15,641 in public ECDE centres and 6369 private. The gender parity index in ECDE centres is 1. The total number of teachers in ECDE centres is 684, translating to a pupil-teacher ratio of 23:1.

The county has three university campuses namely: Chuka University College; Kenyatta University Campus; and Embu University College. Additionally, the county had 4 teacher training colleges and 26 youth polytechnics in four of the five sub-counties; 25 are public and 2 being private as at 2015. The total enrolment at the youth polytechnics was 1189. Furthermore, the county had 257 adult education centres (AEC) with a total of 5249 students enrolled and 113 teachers, translating to a student teacher ratio 46 of as of 2015.

Gross Attendance Ratio (GAR) and Net Attendance Ratio (NAR)

Gross Attendance Ratio (GAR) is the total number of persons attending school regardless of their age, expressed as a percentage of the official school age population for a specific level of education. Table 10.1 presents the GAR by sex and schooling level for Embu County. GAR for pre-primary school was 69.5 per cent while that of primary school and secondary

school was 119.0 and 66.0 per cent respectively. The GAR for pre-primary school was higher for males, 76.6 per cent, compared to that for females, 60.4 per cent. The GAR for primary school was higher for females, 125.6 per cent, compared to that for males, 113.9 per cent. The GAR for secondary school was higher for males, 67.8 per cent, compared to that for females, 64.3 per cent.

Net Attendance Ratio (NAR) is the total number of persons in the official school age group attending a specific level to the total population in that age group. Table 10.1 shows that total NAR for pre-primary, primary and secondary school was 57.0, 94.2 and 44.0 per cent, respectively.

Table 10.1: Gross attendance ratio and net attendance ratio by educational level in Embu County

| Education Level | Gender | Gross Attendance Ratio | Net Attendance Ratio |
|--------------------|--------|------------------------|----------------------|
| Pre-Primary School | Male | 76.6 | 65.5 |
| | Female | 60.4 | 45.0 |
| | Total | 69.5 | 57.0 |
| Primary School | Male | 113.9 | 93.6 |
| | Female | 125.6 | 94.9 |
| | Total | 119.0 | 94.2 |
| Secondary School | Male | 67.8 | 47.7 |
| | Female | 64.3 | 40.6 |
| | Total | 66.0 | 44.0 |

Source: KIHBS 2015/2016

Basic education gross and net enrolment rate

The pre-primary gross enrolment rate in the county was 82.4 per cent in 2019 and while the net enrolment rate was 56.8 per cent. The Gross Primary and Secondary enrolment rates stood at 111.7 per cent and 88.4 per cent respectively in 2019 while the Net enrolment rates (NER) were 88.4 per cent and 54.4 per cent for primary school and secondary school respectively during the same period.

Table 10.2: Gross and net enrolment rate (%), 2019

| | |
|--------------------------------|-------|
| Pre-primary | 2019 |
| Gross Enrolment rate (GER) (%) | 82.4 |
| Net Enrolment rate (NER) (%) | 56.8 |
| Gender parity index | 1.00 |
| Primary | |
| Gross Enrolment rate (GER)(%) | 111.7 |
| Net Enrolment rate (NER) (%) | 88.4 |
| Gender parity index | 0.95 |

| Secondary | |
|--------------------------------|------|
| Gross Enrolment rate (GER) (%) | 88.4 |
| Net Enrolment rate (NER) (%) | 54.4 |
| Gender parity index | 1.10 |

Source: KNBS (2022)

Literacy

The analysis of literacy is based on respondents' self-assessment as no reading and writing tests were administered during the data collection. Further it was assumed that anybody with secondary level of schooling and above could read and write. The percentage distribution of population aged 15 years and above by ability to read and write is presented in Table 10.3. The proportion of literate population in the county is 86.1 per cent with the male population more literate (90.1 per cent) compared to their female counterparts (82.2%).

Table 10.3: Percentage distribution of population aged 15 years and above by ability to read and write (%)

| | Ability to Read and Write | Percentage Distribution (%) |
|----------------|-------------------------------------|------------------------------------|
| Overall county | Literate | 86.1 |
| | Illiterate | 12.5 |
| | Not Stated | 1.4 |
| | Number of Individuals ('000) | 368 |
| Male | Literate | 90.1 |
| | Illiterate | 8.8 |
| | Not Stated | 1.1 |
| | Number of Individuals ('000) | 177 |
| Female | Literate | 82.2 |
| | Illiterate | 16 |
| | Not Stated | 1.8 |
| | Number of Individuals ('000) | 190 |

Source: KIHBS 2015/16

Educational Attainment

The distribution of population aged 3 years and above by educational qualification attained is presented in Table 10.4. Approximately 48.4 per cent of the population did not have any educational qualification. This was higher than the national percentage of 49.7%. Only 0.9 per cent of the population had attained university degree. The proportion of the population with CPE/KCPE qualification is 29.8 per cent and that of KCE/ KCSE qualification is 12.8 per cent.

Highest education

Table 10.4: Percentage distribution of population by highest educational qualification

| Highest Educational Qualification | Percentage Distribution of Population |
|-----------------------------------|---------------------------------------|
| None | 48.4 |
| CPE/ KCPE | 29.8 |
| KAPE | 0 |
| KJSE | 0.4 |
| KCE/ KCSE | 12.8 |
| KACE/ EAACE | 0.4 |
| Certificate | 3.3 |
| Diploma | 1.5 |
| Degree | 0.9 |
| Basic/post literacy certificate | 0.1 |
| Other | 0 |
| Not Stated | 2.5 |
| Number of individuals ('000) | 482 |

Source: KIHBS 2015/16

Percentage distribution of Embu County residents 3 years and above who have ever attended school by the highest level reached, and sex is presented in Table 10.5. The proportion of males who had reached primary school level was 63.6 per cent while that of females was 61.2 per cent. Except for primary school level and college (middle level), the proportion of males who had reached other levels of education were comparatively higher than females. There was a high disparity between the proportion of persons who had reached university education level, male recording a higher percentage than female (1.7% and 1.5%, respectively).

Table 10.5: Percentage distribution of residents 3 years and above who had ever attended school by highest level reached, and sex for Embu County (%)

| Educational Level | Gender | Percentage Distribution of Population 3 Years and above |
|-------------------------|--------|---|
| Pre-primary | Male | 4.6 |
| | Female | 5.7 |
| Primary | Male | 63.6 |
| | Female | 61.2 |
| Post primary vocational | Male | 1.4 |
| | Female | 1.2 |
| Secondary | Male | 21.4 |
| | Female | 23.2 |

| | | |
|------------------------------|--------|-----|
| College (Middle-level) | Male | 4.1 |
| | Female | 5.4 |
| University | Male | 1.7 |
| | Female | 1.5 |
| Madrassa / Duksi | Male | 0.0 |
| | Female | 0.0 |
| Other | Male | 0.1 |
| | Female | 0.3 |
| Not Stated | Male | 3.2 |
| | Female | 1.5 |
| Number of Individuals ('000) | Male | 250 |
| | Female | 232 |

Source: KIHBS 2015/2016

According to the National Adolescents and Youth Survey (NAYS, 2014), drugs and substance abuse, child labour, absenteeism of teachers and students were the main education problems affecting young people. The participants attributed the problems to peer pressure among youth as well as poverty which leads to school dropout as students cannot afford school fees.

Just like other counties, many people in Embu County lost their jobs because of the COVID-19 pandemic. Private schools were forced to lay off both teaching and support (casuals) staff because they could not sustain their salaries. Public schools faced challenges in making payment for the other expenses such as electricity, water and security bills. Apart from the other expenses, public schools could not pay teachers who were hired on contracts and were under boards of management.

The 26 Youth polytechnics are distributed as follows: 7 in Embu East; 7 in Manyatta; 8 in Mbeere North; and 4 in Mbeere South. There was one technical institute in the county as of 2015; the Institute of Technology Rwika (Jeremiah Nyagah) which had 420 students enrolled.

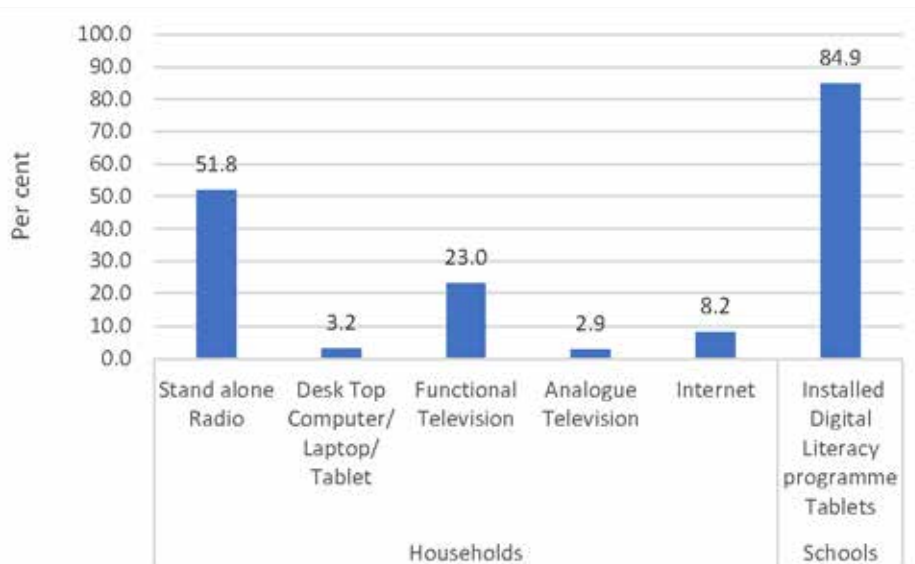
The main challenges in the education sector include inadequate infrastructure and equipment in schools; long distance travelled from home to ECDE centres acute shortage of qualified instructors; lack of modern teaching machines, tools and equipment in polytechnics; high examination fees in polytechnics; high dropout rate in Youth Polytechnics; inadequate institutions of higher learning; lack of an institution offering agro-based courses which would be more relevant to the economy of the county; lack of land tenure documents in primary schools and insufficient special schools.

COVID-19 was the main challenge over the past two years since it led to the closure of most education centres. In particular, private schools in Embu County were severely affected as a result of the COVID-19 pandemic because they could no longer receive income in form of school fees. Suppliers and vendors who sold their goods and services to schools lost their target market after the government ordered all schools to shut down.

ICT in education

Closure of all schools led to loss to learning time and teaching time. The e-learning program at home was strained because of limited access and capacity in ICT integration in education hence there was no learning for students in most homes during this COVID-19 pandemic.

Figure 10.1: Access to ICT in households and schools



Source: Kenya Population and Housing Census (KPHC, 2019)

Identifying the linkage between education and other sectors, the line Ministries and Departments such as Health, Ministry of Education and Development Partners such as UNICEF, AMREF was important and involved child immunization through multi-sectoral approach. In addition, through ICT, other children within the county had managed to continue with their school work at home.

10.2 Opportunities with COVID-19 in Education and Training

The demand for PPEs such as masks in the County had led to local production by vocational technical training centres (VTCs) hence creating employment and income for youth. It will however be important to address issues of standards and quality of the local produced PPEs. Further, the pandemic had provided an opportunity for enhancement of the health facilities through advancement in equipment and employment of more health personnel in the county.

10.3 Emerging Issues

The County with support from stakeholders will need to continue to invest in early childhood development through infrastructural development to allow for adequate social distancing; deployment of ECDE teachers, provision of sanitation facilities and enhanced

school feeding programme. To achieve these objectives, the county will require to partner with the national government and private sector to enhance ECDE and vocation training through infrastructural development as well as equipment of all ECDE, primary, secondary and vocational training; and University branches in the County with adequate WASH and adequate learning spaces.

10.4 Recommendations

- (i) The County with support from stakeholders to continue to invest in early childhood development through infrastructural development to allow for adequate social distancing when schools reopen; deployment of ECDE teachers and provision of sanitation facilities.
- (ii) The county to involve communities to mobilize learners to enrol in schools while deepening implementation of COVID 19 mitigation measures. The county would combine community participation and large-scale direct communication campaigns to parents, and where possible, increase attendance options to accommodate all children, including those with highest risk of dropping out, also promote back to school campaign and community outreach to ensure that no child dropped out of school due to COVID-19 emergency.
- (iii) The County to prioritize projects that improve school water, sanitation and hygiene facilities and management in order to reduce future effect of similar or related outbreak while promoting public health in learning institutions.
- (iv) The county to promote remedial/catch up lessons for learners who might have lagged behind also schools to utilize ICT platforms and have a depository of teaching and learning materials that learners could use at their own time and while at home.
- (v) The county to provide financial or in-kind support, such as school feeding, to help families overcome the increased costs of attending school, also provide psychosocial support to teachers and learners.
- (vi) Concerted efforts will also be required to fight drug and substance abuse among the youths in the county. This can be done through counselling and ensuring that they are not idle especially this period when learning institutions are locked.
- (vii) The County Government will need to support private institutions which are facing threat of closure due to losses as a result of closing schools. This can involve giving grants and loans to the private schools.

11. Social Protection

11.1 Characteristics of the Sector

Sources of vulnerabilities in the County

According to the KNBS census 2019, Embu County has a population of 608,599 of which 6.4 per cent are the elderly and 4.4 per cent are people living with disabilities. The overall poverty rates in the county stand at 44 per cent which was higher than the national average (36.1 per cent). Despite being an agricultural county, the county's food poverty levels were at 28 per cent and 28 per cent of the total population is multi-dimensionally poor. Further, about 27 per cent of the children population were stunted. The impact of the COVID-19 to the county's economy cannot be gainsaid.

To cushion the citizens, the county has implemented various safety net programmes. The County targeted to provide cash transfer to 200 households in each sub – county, provide cash transfer to 50 households in each sub – county for poor and severe disabled persons. The County also supported and built capacities of individuals, vulnerable groups and communities for equity and self-reliance through training. With increasing demand for cash transfers, the County government initiated targeted cash transfers to the elderly and food distribution to vulnerable households both before and during COVID-19 period.

Severe Shocks to the Households

Severe shocks have had negative impact to the household's economic and social welfare of county residents. Table 11.1 presents the proportion of households by the first severe shock in the county. The major shock in the county was dearth of livestock which affected 25.3 per cent of the households followed by drought/floods and Death of family Member which affected 21.2 per cent and 8 per cent of the households in the county.

Household business failure, large rise in price of food and Severe water shortage were also other major shocks in the county affecting 3.4 per cent, 1.5 per cent and 6 per cent respectively. Crop disease or crop pests were experienced by 1 per cent of households while the 3.6 per cent reported having their livestock stolen as other 4 per cent of the households reported to have experienced Break-up of the households.

Table 11.1: The proportion of households by the first severe shock in the County

| First Severe Shock | The proportion of households (per cent) |
|---|--|
| Droughts or Floods | 21.2 |
| Crop disease or crop pests | 1 |
| Livestock died | 25.3 |
| Livestock were stolen | 3.6 |
| Household business failure, non-agricultural | 3.4 |
| Loss of salaried employment or non-payment of salary | 4.6 |
| End of regular assistance, aid, or remittances from outside the household | 0 |
| Large fall in sale prices for crops | 0 |
| Large rise in price of food | 1.5 |
| Large rise in agricultural input prices | - |
| Severe water shortage | 6 |
| Birth in the household | - |
| Death of household head | 5 |
| Death of working member of household | 3 |
| Death of other family Member | 8 |
| Break-up of the household | 4 |
| Bread winner jailed | 1 |
| Fire | 1 |
| Robbery / Burglary / Assault | 4 |
| Carjacking | - |
| Dwelling damaged, destroyed | 0 |
| Eviction | - |
| Ethnic/ Clan Clashes | - |
| Conflict | - |
| HIV/ AIDS | - |
| Other | 6 |
| Number of households with Shock | 98,000 |

Source: KIHBS 2015/2016

Distribution of social assistance beneficiaries

Households in the county received various forms of social assistance or transfers or gift either in form of a good, service, financial asset or other asset by an individual, household or institution. Transfers constitute income that the household receives without working for it and augments household income by improving its welfare. Cash transfers include assistance in form of currency or transferable deposits such as cheque and money orders. The proportion of households that received cash transfers by source, household headship, residence and county is presented in Table 11.2. Overall, 24 per cent of the households received cash transfers. A higher proportion of households received transfers from within the country (65%), mainly from individuals (83%) while external transfers constituted 2 per cent.

Table 11.2: The proportion of households that received cash transfers by source, and household headship

| | | Beneficiaries |
|---|--|---------------|
| | Total Number of Households | 164,000 |
| | <i>Households receiving transfers (per cent)</i> | 24 |
| From Inside Kenya | Individual | 21,703 |
| | Non-Profit Institution | 643 |
| | National Government | 1,095 |
| | County Government | 664 |
| | Corporate Sector | - |
| Inside Kenya | | 24,106 |
| Outside Kenya | | 531 |
| Total | | 24,253 |
| Number of households that received transfers | | 40,000 |

Source: KIHBS 2015/2016

The gender inequalities issues in the county were evident. Embu County had 4 youth empowerment Centres aimed at skills development and talent harnessing. During the COVID-19 pandemic, the county experienced a surge in teenage pregnancies and violence meted against young boys, girls and women. This was attributed to COVID-19 and the resulting measures that led to staying at home and closure of schools. Teenage pregnancies were associated with high rates of school dropouts, stigma, increased mental health

concerns, sexually transmitted diseases, postpartum depression and suicidal ideation.

Most of the social protection operations were undertaken through non-contributory transfers in cash for the elderly, OVCs and PWDS. In some instances, in kind transfers which include school feeding programmes were also used to reach a wider audience and age group.

11.2 Opportunities with COVID-19 in social protection

Regional unity in the fight against corona pandemic and exploitation of the economic potential was observed. The disease had also provided an opportunity to measure how county governments are prepared to handle the devolved functions. Health being a devolved function, it has really exposed the counties as many of them lacked required health facilities such as ICU beds and enough medical personnel. The virus had also provided an opportunity to develop social protection programs to cushion the vulnerable groups in the community in case of outbreak of other diseases.

11.3 Emerging Issues

Gender based violence has social and economic implications in any society. It severely restricts women's ability to exercise their socio-economic and reproductive health rights; constrains women from fully contributing to overall economy's development leading to loss of incomes; and exacerbates health costs. Youth unemployment also leads to under-utilization of youth potential especially at the peak of their life cycle.

11.4 Recommendations

COVID-19 pandemic created effects with immediate and long-term economic consequences for children, PWDs, elderly and their families. In an effort to strengthen social protection response in face of a similar pandemic, the county government would:

- (i) Undertake research in collaboration with KEMRI, NCPWD and University of Embu to get a better understanding of the actual situation of disability and chronic illness in Embu County, and to map existing initiatives towards managing the effects of the pandemic in the County.
- (ii) Promote interventions towards the expansion of social protection initiatives targeting elderly persons. This to also involve increasing the cash given to elderly.
- (iii) Protect vulnerable groups in the population from health costs by enhancing NHIF coverage; improving knowledge of the existing insurance schemes to improve uptake; and subsidizing NHIF premiums for targeted vulnerable populations.

12. Labour Participation

12.1 Characteristics of the Sector

Sources of employment in the County

Agriculture is the main driver of the economy in Embu County with over 70 per cent of the residents being small scale farmers. Small percentages are business people and civil servants working in government institutions. Tea, coffee and cotton have been the main cash crops. The farmers in the county were greatly affected by COVID-19, mainly because of national lockdowns and social distancing policies. The agriculture sector was experiencing a low traffic on sales and movement of goods, which in turn had an adverse effect on market operations and cash flow for farmers. The export and import restrictions created uncertainty on the crop farming and tourism industry forcing the farmers to undertake emergency response measures to prevent the spread of COVID-19 in communities, this resulted to loss of jobs and income amongst the farmers.

Table 12.1: Distribution of population age 5 years and above by activity status, and sex in the County

| | Male | Female | Total |
|--|---------|---------|---------|
| Population | 270,430 | 272,976 | 543,425 |
| Working | 157,937 | 159,153 | 317,105 |
| Seeking Work/ No Work Available | 13,015 | 6,971 | 19,686 |
| Persons outside the Labour Force | 99,456 | 106,826 | 206,286 |
| Not Stated | 22 | 26 | 48 |
| per cent Working | 92.4 | 95.8 | 94.1 |
| per cent Seeking Work/ No Work Available | 7.6 | 4.2 | 5.8 |

Source: KNBS (2019)

Distribution of Population Age 5 Years and above by Activity Status, and Sex in the County is shown in Table 12.1 above. An assessment on the County population aged 15-64 years (labour force) was estimated at 337,091 people of whom 317,105 people were working and 19,986 were seeking work but work was not available representing an unemployment rate of 5.9 per cent (Kenya Population and Housing Census, 2019).

In terms of gender participation in economic activity, more females are involved in agricultural production for both food and cash-crop growing, which implies the social economic fallout of COVID-19 had an impulse effect on women over men in the county. Farming is mainly small-scale and is aimed at producing for own consumption and to generate income for the family. The men on the other hand are more involved into Jua Kali

activities which require some specialized skills through technical training or apprenticeship. Also, more men than women are involved in business because they can access credit more easily than their female counterparts.

Food crops, livestock and to a large extent horticulture production comprise the major economic activities in the agricultural sector. Cottage and small-scale industries are minor economic activities carried out in the market centres.

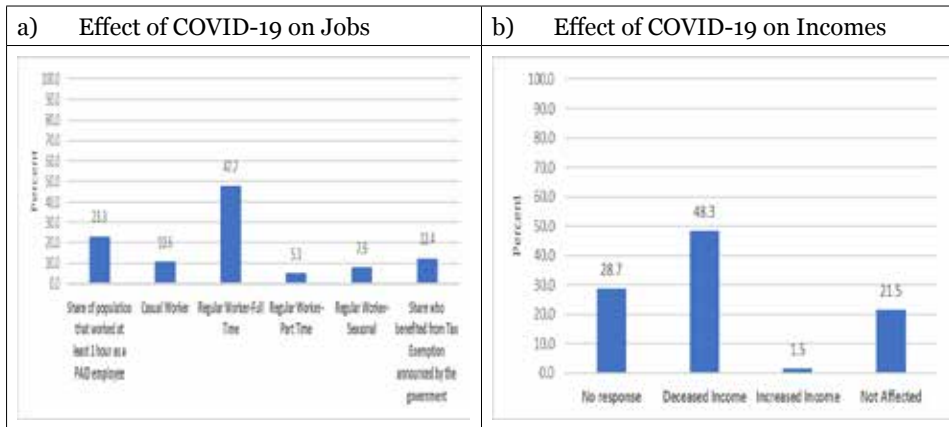
Effects of COVID-19

Several economic activities were disrupted as Markets were closed to prevent spread of COVID-19 including Ishiara market which is the largest goat market in the county. Other markets that were closed included Karaba, Kiritiri, Gachoka, and Kianjokoma. The public sector was not an exemption as Embu GK Prison was locked down due to fear of spread of the COVID-19 after some prisoners tested positive. Law courts were also closed limiting service delivery. Bars and entertainment joints were also closed. The county government relocated the miraa market from the central business district to Embu Stadium as a precaution. Miraa traders were required to pay Ksh 50 each daily for maintaining cleanliness at the stadium.

The unemployment level has increased during the period of COVID-19, according to May 2020 KNBS COVID-19 Survey, 13.1 per cent of the county labour force worked at least for 1 hour for pay; 8.1 per cent had never worked, and 78.6 per cent worked in the informal sector. However, 2.4 per cent of employees did not attend to work due to COVID-19 and 86.8 per cent of employees worked without any pay. On average, workers in the County lost 11.7 hours per week due to COVID-19; 67.0 per cent of county residents recorded decrease in income while 5.0 per cent recorded increase in their income.

During the pandemic, about 10.6 per cent of workers in the county were casual workers 47.7 per cent were regular workers (full time), 5.1 per cent employees were working as part time. However, majority of these workers (48.3%) reported decrease in income while 1.5 per cent of people reported to have experienced increased income. These could be the people working in the health sector who are supplying medical equipment such as masks and PPEs. About 12.4 per cent of workers indicated to have benefited from government tax exemptions which indicates about 87 per cent did not benefit from National government tax relief for low-income-earning persons, a reduction in the top Pay-As-You-Earn (PAYE) rate, and other changes such as cash transfers, credit relief, lower VAT, and a corporate tax cut.

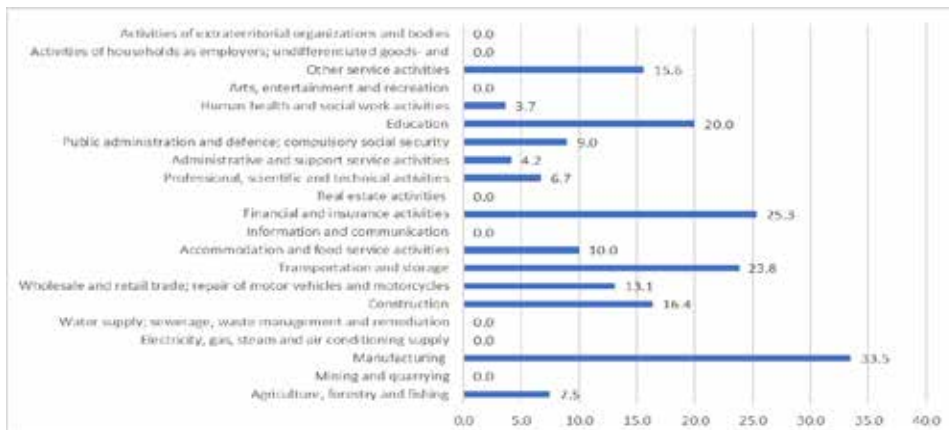
Figure 12.1: Effects of COVID-19, 2020



Source: KNBS (2020)

According to the May 2020 KNBS COVID_19 Survey, the manufacturing sector reported the highest level of loss of hours worked (33.5 hours) followed by workers in financial and insurance activities (figure 12.2). Workers in transportation and storage and education lost a total of 23.8 hours and 20 hours per week, respectively. Workers in other service activities recorded an average loss of 16.4 hours and 15.6 hours per week, respectively. The loss of working hours in service and agriculture (7.5 hours) sectors which contributes to 44.0 per cent and 38.4 per cent of County GDP respectively, implied the county economy was negatively affected.

Figure 12.2: Difference between usual hours worked and actual hours worked during COVID-19 period



Source: KNBS (2020)

According to the May 2020 KNBS COVID-19 Survey, 67.0 per cent of workers in Embu county recorded decreased income; 5 per cent reported increase in income; while 86.8 per cent recorded working as unpaid workers. The county recorded 78.6 per cent of workers in informal sector and 2.4 per cent never attended to work due to COVID-19 related issues. In

private sector schools, teachers and other workers lost their incomes. Some other businesses such as bars and hotels totally closed, leading to reduced business activities. Workers in the transport sector were rendered jobless due to restrictions of moving in and out of Nairobi and Mombasa counties; and reduced movement within Embu County. On average, the county lost 11.7 hours worked in a week, this indicating that although the measures that were imposed by the Government to mitigate the spread of COVID-19 contributed positively towards managing the pandemic; they had significant economic repercussions with implications on job losses.

12.2 Opportunities with COVID-19 in labour participation sector

The county government have been provided with the opportunity to use digital platforms to enable remote access to jobs for their employees where the Human Resource Management will have an essential role to play in navigation of the situation caused by the pandemic. There had been notable efforts by the county government to invest more money in training health workers. The county government now has an opportunity to reskill its employees and develop strategies (mid- and post-pandemic strategies) to adapt to any future pandemic.

12.3 Emerging issues

With the widespread stay-at-home orders, most of county employers were adjusting operations and shifting workforces online.

12.4 Recommendations

- (i) Create more employment opportunities through the development of pro employment policies; investment in education and training and skills development; and investments within the key sectors of agriculture. The county will establish Macadamia oil processing plant to improve the livelihood of county residents and job creation.
- (ii) The County has high gender inequalities and low women empowerment. The county will need to promote women's empowerment through income generating initiatives and affirmative action programmes for better health outcomes for youth and women.
- (iii) Enhance universal health access through publicly financed health services for all, including uninsured workers and their families. The county will invest in community and public health including community health workers, water, sanitation and immunization.
- (iv) Strengthen the capacity of workers in ICT skills amidst COVID-19 pandemic.
- (v) Improve access to finance for small and medium enterprises through lending institutions for sustained business. In addition, build capacity in areas related to marketing, operations, finance, and human resource development to enhance the chances of survival of SMEs.

- (vi) Encourage more investors to invest in Embu county by offering incentives such as tariff exemptions and tax waiver. This will enable individuals establish businesses therefore creating employment opportunities.

13. Conclusion and Key Recommendations

13.1 Conclusion

Fiscal policy

It is evident that much of expenditure particularly development expenditure happens in third and fourth quarters of the fiscal year, with the latter showing stronger performance. This pattern reveals systemic weaknesses in county public investment management system. Total county revenues grew from Ksh 3.60 billion in 2013/14 to Ksh 6.41 billion in 2020/21, an average annual growth rate of 6.8 per cent. OSR contributed 7.76 per cent to total revenues in 2013/14 and increased to 12.35 per cent of total revenues in 2020/21. Wage bill has largely exceeded 35 per cent of county actual expenditure averaging 56.8 per cent while development spending averaging 21.5 per cent. Priority expenditure has been on non-administrative and non-coordinational functions such as health, education, agriculture, roads etc., accounting for an average of 70.6 per cent of actual expenditure. Health sector leads at 31.1 per cent. Administrative and coordinational functions such as county executive, county assembly, public service management and finance account for 29.4 per cent of expenditure.

Agriculture, Livestock and Fisheries

The agri-food analysis highlights the sector was negatively affected by COVID-19 in terms of labour supply, trade and marketing operations, food supply and the resulting effects on food prices. The County's agricultural productivity is also affected by: - variable and extreme weather events; dependence of rain fed agriculture; low agro-processing and value addition opportunities; land fragmentation; low access to quality and affordable inputs; low crops, livestock, and livestock products marketing opportunities; poor access to agricultural finance; low access to major off-farm services including extension, climate and market information, and credit services; and pests and livestock diseases; and farm losses and post-harvest waste. This adversely affects the productivity of the sector and impairs marketing and consequently places livelihoods and food security at risk especially in times of emergencies. The analysis calls for strategies to enhance productivity, profitability, and resilience of the sector for improved livelihoods.

Water sanitation and hygiene

Most households rely on surface water, dug well as well as piped water among urban households. To minimize the risks of households missing water, it is important to put in place measures to ensure protection of water resources for continuity of access to clean and safe water by households.

Manufacturing, Trade and MSMEs

The momentum in manufacturing, trade and MSMEs was disrupted by the COVID-19 pandemic as the containment measures associated with COVID-19 pandemic took a heavy toll on the sector. In sustaining growth and building resilience in this sector, it is important to expand trade and strengthen production capacity of MSMEs and especially those involved in manufacturing by exploiting opportunities afforded by the pandemic such as production of masks, PPEs, hospital beds, ventilators, reagents, gloves, and sanitizers. However, it is also critical to ensure the transitioning out of such products is well managed as the Covid-19 pandemic slows.

Infrastructure, housing, and urban development

The main means of transport used in the County is walking followed by motorbike. The paved County Road network covers 56.09 km, while the paved National roads cover 239.17 km. Out of the total paved road network of 295.26 km, 84.4 per cent is in good condition, 9.7 per cent in fair condition and 4.7 per cent in poor condition. The status of ICT access and use in the county was low, especially among households. The perception that the individual does not need to use the internet, lack of knowledge and skills on internet are the leading reasons that the people in the County do not have internet connection, as well as accessing internet elsewhere. The housing tenure is predominantly owner occupied at 73.0 per cent, with 27.0 per cent of the households under rental tenure. The county has challenges in quality of the housing stock.

Tourism

Tourism has a high potential in Embu County for both local and international tourists. The Mwea game reserve is the only protected area in which the globally threatened and Kenya-endemic Hinde's babbler is known to occur. Embu is also a gateway to Mt. Kenya which, if aggressively marketed can bring huge incomes to the county. Other attractions include 3751 Ha of forests that supports eco-tourism; Agro-tourism (coffee and tea plantations); medical tourism (Traditional herbalists and medicine men; Embu Referral Hospital). Development and recurrent expenditure incurred on the Trade, Tourism, Investment, and Industrialization sector in 2013-2017 was only 1.2 per cent and 0.4 per cent respectively of the total spending; while in the same period, accommodation and food services accounted for 0.8 per cent of total GCP. This indicating the need to prioritize development of the tourism sector.

Health

COVID 19 has worsened the situation as far as youths and women are concerned. These are the groups of people that have been facing several challenges even before the outbreak of the COVID 19. FGM and Gender based violence cases have increased with the lock down. Youths who are entrepreneurs have also been affected losing jobs and businesses due to the lockdown. Other problems facing youths includes teenage pregnancies, malnutrition, STI/ HIV and Aids, poor environment, drug and substance abuse and malnutrition

Education and training

The County had gaps in early childhood development through infrastructural development to allow for adequate social distancing; deployment of ECDE teachers and provision of sanitation facilities. The county recorded low completion rates at all levels of education.

Social Protection

COVID-19 pandemic created immediate and long-term economic consequences for vulnerable groups including children, PWDs, elderly and their families. In an effort to strengthen social protection response in face of a similar pandemic, the county government will need to provide basic income security, especially for persons whose jobs or livelihoods have been disrupted by the pandemic. Build linkages with other Ministries, and with NGOs that work with people with disabilities to strengthen families, deliver assistive devices, reduce barriers to access and provide vocational training.

Labour participation

The COVID-19 pandemic has expedited the speed at which different firms and businesses within the county are changing their pay programmes through pay reductions and incentive resets. It is important for the County to promote implementation of appropriate labour market interventions especially those working in the agricultural sector, which is a major employer in the County and policy reforms that drive employment creation. Deepen technical education, training and skills development.

13.2 Key Recommendations

Fiscal Policy

To steer the county towards achieving its budgetary objective and development goals contained in the ADPs and CIDP; mobilize more finances from OSR to increase the available revenues for budgetary operations, seek for more funding in form of grants from development partners to cater for the critical development projects in the county, ensure that the ongoing projects are completed before launching new project and clear any pending bills and arrears owed to suppliers and ensure the ongoing infrastructure project are completed and suppliers paid within the specified timelines for optimal returns to investment and to spur private sector activity.

Agriculture, Livestock and Fisheries

To successfully build resilience and enhance growth of the agriculture sector: explore partnerships to develop agro-processing and value addition capacities at the County; invest in sustainable irrigation and water harvesting technologies; enhance access to storage and cooling facilities; enhanced commercialization opportunities among small holder farmers; link farmers to diverse product markets; strengthen the County's institutional capacity in disaster surveillance and management; enhance farmers access to critical agricultural inputs and services and build their technical capacity to act on information obtained; and strengthen agricultural cooperatives.

Water, Sanitation and Hygiene

To build resilience and mitigate the effect of COVID-19, increase water supply in households, institutions, and public places through drilling of boreholes, dams, and access to piped water in all the sub-counties. Promote the use of safe and improved toilets in schools, health care facilities, workplaces, and public places by connecting households to piped sewer. Promote handwashing as a stop gap measure against COVID-19.

Manufacturing, Trade and MSMEs

To sustain growth in the manufacturing, trade and MSMEs sector: Develop a land development strategy that safeguards the high potential agricultural land by setting the urban growth limits to preserve the high potential areas and regulate the subdivision of this land; Develop urban-based agro-industries in Embu town to focus on proximity to agricultural raw materials and promote agricultural value addition; Promote rural development through provision of infrastructure and agricultural sector development and related economic activities; and Enhance agricultural production by intensifying the use of the land.

Infrastructure, Housing and Urban Development

Improve and expand infrastructure for Non-Motorized Transport (NMT) in urban areas and along roads with heavy -high speed traffic to promote sustainable mobility options and enhance road safety for all road users; speed up the construction of fiber-optic broadband networks in underdeveloped areas; and avail appropriate building technology for use by the public in house construction and improvement in every sub-county, that responds to local cultural and environmental circumstances.

Tourism

For recovery of the tourism sector, promote domestic tourism to cushion the economy from impacts of travel advisories and constraints caused by the pandemic on international tourist arrivals, regular maintenance of tourism attraction sites, tourism marketing and promotion, diversification of tourism products, opening of access routes to the tourist sites, community sensitization on tourist sites in the county, promotion of eco-tourism, cultural and sports tourism in the 6 main rivers (Tana, Rupingazi, Kii, Ena, Thiba, Thuci) and two hydro-electric dams, development of tourism infrastructure (route to Mt. Kenya, star-rated hotels, tourist sites, tented camps), enforcing guidelines on high sanitation standards for the hospitality sector to stop the spread of COVID-19 and other pandemics while ensuring business continuity and inspect all the tourism establishments in the county and train tourism service providers.

Health

For a resilient health sector, create more awareness on immunization so that mothers can ensure their children get immunized. Implement a comprehensive human resource health management system including undertaking training needs assessments and information system to ensure skilled and motivated health care workers, equitable deployed across all sub-counties. Pay salaries in time to avoid cases of strikes and low staff morale. Recruit

additional of public health officers and community health workers to strengthen preventive and public health systems.

Education and Training

The County with support from stakeholders to invest in early childhood development through infrastructural development; deployment of ECDE teachers and provision of sanitation facilities. Provide financial or in-kind support, such as school feeding, to help families overcome the increased costs of attending school and provide psychosocial support to teachers and learners during and after the pandemic.

Social Protection

Build linkages with other Ministries, and with NGOs that work with vulnerable groups to strengthen families, deliver assistive devices, reduce barriers to access and provide vocational training. Undertake research to get a better understanding of the actual situation of disability and chronic illness in the County, and to map existing initiatives on social protection to improve on targeting to reach all those who deserve support

Labour Participation

Enhance investments and mechanisms for up skilling and reskilling, deepening technical skills as well as ICT skills; and retraining employees on how to work from home, where applicable. Protect workers in the informal economy by pursuing innovative policies to reach them quickly through a combination of non-contributory and contributory social security schemes and facilitate their transition to the formal economy in the longer term.

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