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URBAN-RURAL LINKAGES AND GLOBAL PANDEMIC DISRUPTIONS IN AFRICA

Impacts on Mobility, Spatial Interaction and Food Systems in Cameroon, Kenya, Niger State (Nigeria), Senegal and Zimbabwe

RESEARCH REPORT

UN-HABITAT
UNIVERSITY OF NAIROBI
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REPUBLIQUE DU CAMEROUN
MINISTERE DE L'HABITAT ET DU DEVELOPPEMENT URBAIN
LANDS & HOUSING NIGER STATE

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RESEARCH REPORT

EXECUTIVE SUMMARY

The interconnection between urban and rural areas is increasingly attracting renewed attention in research, territorial planning and policy agenda for national, regional and local governments in Africa. The need to foster urban-rural linkages is crucial as these spaces are inextricably linked economically, socially and environmentally. There is no doubt that urban-rural linkages are important in enhancing territorial development, food and income sources, livelihood sources and strategies, poverty reduction, and sustainable development. However, during the coronavirus pandemic (COVID-19), urban-rural linkages and spatial interactions were greatly affected. It became evident that urban-rural linkages must be considered more carefully in the short, intermediate and long-term responses in future pandemics.

This study contributes to a better understanding of the impact of COVID-19 on spatial interaction and flow of food and related commodities in the urban-rural nexus in Africa, with a view to suggest policy, legislation, and governance measures to reduce the impact and improve resilience of transport and food supply chain sectors of the economy to such pandemics. This was achieved through the lenses of flow of food along the urban-rural continuum within the context of food systems, as well the flow of goods and spatial interaction of people along the urban-rural continuum within the context of public transport systems.

The study falls within the broader global track of Sustainable Development Goals (SDGs), in particular, Goal 11 on making cities and human settlements inclusive, safe, resilient and sustainable, while at the same time contributing to Goal 1 on access to food as part of poverty reduction, and Goal 17 on strengthening and revitalizing partnerships in sustainable development. The study is also aligned to the general thematic areas of the UN-Habitat's Urban-Rural Linkages Programme.

The case-study countries selected for the study were Cameroon, Kenya, Nigeria (Niger State), Senegal and Zimbabwe. The selected study areas in each country represented transport corridors that reflected, in as much as possible, urban-rural linkages in terms of flow of food, people and commodities between urban and rural areas. Specifically, the transport corridors were between Yaoundé city and Akono rural area in Cameroon; Nairobi city and Magumu and Kinale rural areas in Kenya; Minna city and Gwada and Beji rural areas in Nigeria's Niger State; Dakar city and Lompoul-Potou rural area in Senegal; and Harare city and Mutoko and Murewa rural districts in Zimbabwe.

Using standardized data collection tools, the study collected relevant information from a total of:184 rural smallholder farming households, 200 rural food retailers, 157 urban food retailers, 218 urban informal food vendors, 221 urban households, 16 rural market-based food transporters, 15 urban market-based food transporters, 6 rural market officials, 6 rural market officials, 6 supermarket officials, 16 public transport operators, 10 government officials.

The study findings show that COVID-19 containment measures had varying degrees of unintended negative effects on rural food production, rural and urban food supply and distribution, food transportation between urban and rural areas, flow of people and goods within and between territories, and on lives and livelihoods of urban households. Food supply and distribution chains were largely disrupted and therefore affecting access to and availability of food in both rural and urban areas. The disruption of the food supply and distribution chains led to increase in the prices of food and less types and varieties of food - potential in increasing incidences of food insecurity, hunger and malnutrition, especially for the poor households. Furthermore, poor households were subjected to difficult economic conditions because of job lay-offs, lack of wage unemployment, and reduced income and wages - potential in worsening the poverty situation in both urban and rural areas. In addition, COVID-19 containment measures disrupted a number of social activities such as weddings, funerals, family gatherings, worshiping, celebrations, and school going. Besides, fatalities associated with coronavirus were socially and economically devastating to the concerned households.


Market harvest © FiledIMAGE/AdobeStock

The following key facts emanate from data analysis and the study findings:

- **67.2%** of the smallholder farmers experienced an increase in cost of food production as a result of high costs of transport and farm inputs, bribes at enforcement roadblocks, and increased cost of fuel, largely triggered by lockdown and curfew measures.

- **76.2%** of the smallholder farmers experienced reduced sales, while **92%** experienced low prices for farm produce as a result of decreased production, limited transport and logistical delays, closure of markets, reduced market operation hours, decreased number of customers, lack of storage facilities for perishable produce, and exploitation by middlemen.

- **68%** of the rural food retailers and **72%** of urban food retailers and vendors experienced low sales of food products due to reduced number of customers occasioned by reduced market and business operation hours, as well as curfew and lockdowns.

- **67%** of the rural food retailers and **76%** of urban food retailers and vendors experienced increased cost of running business because of increased cost of transport and food supplies, cost of installing handwashing points, cost of buying water, soap and masks, and bribes to law enforcers.

- **69%** of the rural food retailers and **73%** of urban food retailers and vendors were affected by unpredictable food prices dictated by market supply and demand forces, which resulted in either a decrease or an increase in both wholesale and retail food prices.

- **74%** of the urban households experienced reduced spatial interaction and regular social and economic routines within the city, largely attributed to curfew and lockdowns, including high transport costs, travel and work at home advisories, general fear of contracting COVID-19, and closure of schools.

- **76%** of the urban households noted that their regular interactions with their rural homes and family were affected as a result of travel restrictions and advisories, lockdowns, and increased costs of transport.

- Half of the urban households experienced disruption in their regular access to food (**54%**) and availability of food (**56%**) due to closure of markets, reduced food supplies, reduced market and supermarket operation hours, movement restrictions, scarcity of some food products, and increased food prices – which in turn limited types and varieties of food consumed in 48% of the households.

- The public transport operators experienced a general increase in daily operation costs per vehicle and passenger fares; and a general decline in daily revenue per vehicle, number of passengers per trip, number of trips per day, number of vehicles per day, and number of full-time employees.

- The supermarkets experienced a general decline in supermarket operating hours, number of customers, daily sales, and daily costs and expenditure; an inconsistent supply of fresh farm produce to the supermarkets but with no significant effect on fresh food supplies prices; and a marginal increase in retail prices of fresh farm produce in the supermarkets.

- The food transporters experienced a general decline in the number of trips per week, volume of food supplies transported, as well as income revenue and profits. They also experienced a general increase in the number of police/ heath checks, required number of transport permits, and cost of operations and expenditure.

- Relatively large proportions of the smallholder farmers (**40%**), rural food retailers (**36%**) urban food retailers and vendors (**47%**), and urban households (**42%**) reported that they had recovered to a small extent or had not recovered at all from the impacts of COVID-19 pandemic.

- The rural and urban food supply markets experienced a general decline in market operating hours, volume of food supply, food sold and buyers, number of food transporters and distributors, and daily income and revenue. They also experienced a general increase in wholesale and retail food prices, as well as market forces driven increase or decrease in markets expenditure and cost of operations.

The rural smallholder farmers, rural food retailers, urban food retailers, urban informal food vendors, and the urban households adopted a number of coping strategies to mitigate against the negative impacts of COVID-19 containment measures. Risk reduction strategies included increasing or lowering of food prices according to the market forces, storage of grains, engaging in other income sources, reducing stock and food supplies, temporary closure of business, bulk purchase, prevention of waste, reliance on food assistance, and growing own food.

Sustaining food production strategies included taking loans and use of organic manure. Sustaining food supply strategies included selling food directly to consumers and customers, sourcing food directly from farmers, and selling food through mobile phone Apps. Lastly, sustaining food retailing and vending business strategies included taking loans, buying and selling food on credit, increasing food retail prices, maintaining a clean food environment, and bribing enforcement officers to operate during curfew hours.

Based on the findings, the study recommends policy and legislative recommendations to enhance sustainable urban and rural food systems; provision of food subsidies, food aid and food assistance during pandemics; and sectoral development plans that recognizes rural and urban as territories with interconnected and interdependent sub-systems. On the other hand, the governance recommendations include creation of food retailing markets and points with adequate sanitation facilities; improving the management and governance of urban-rural flows in the context of crises, calamities and disasters; implementation of COVID-19 control and containment measures with wider consultations of all the stakeholders and public participation and awareness campaigns; recognition of the role of informal food vendors in the rural and urban food supply and distribution chain; efficient decision-making and procedures on issuance of travel permits to food transporters during such pandemics; and allowing food markets and supermarkets to operate for longer hours under strict supervision of public health workers in collaboration with the market and supermarket officials.

Family of farmers harvesting onions in a field in Dear Alla, 50 kilometers west of Amman © FAO/Khalil Mazraawi

Table of Contents

List of Figures

List of Tables

1

Study Background and Context

1.1. Introduction

The interconnection between urban and rural areas is increasingly attracting renewed attention in research, territorial planning and policy agenda for national, regional and local governments in Africa. The need to foster urban-rural linkages is crucial as these spaces are inextricably linked economically, socially and environmentally. The spatial and functional interconnections of territories entail conceiving urban and rural areas as a continuum, in which there are not only flow of people, food, goods, services, capital and information, but also sectoral linkages and interactions. Furthermore, urban-rural linkages are important in enhancing territorial development, food and income sources, livelihood sources and strategies, poverty reduction, and sustainable development. Sustainable development and urban-rural linkages are interrelated components that cannot be addressed separately as achieving sustainability also implies forging strong urban-rural linkages.

During the coronavirus pandemic (COVID-19), the world came to a near standstill. Spatial interaction and urban-rural linkages were greatly affected. From local transport to global supply chains, nothing was spared. It became evident flows of people, goods, services, resources and capital between urban and rural areas must be considered more carefully in the short, intermediate and long-term responses to the pandemic. Measures such as international and national travel bans, partial and total lockdowns, curfews, and physical and social distancing, as a response to the outbreak of COVID-19, led to the disruption of transportation and flow of food, people, goods and services between and within geographical territories.

However, the nature and dimension of the impact of COVID-19 containment measures on urban-rural linkages and transportation of food and related commodities in the urban-rural nexus remains unclear, especially in Africa.

It is therefore critical to better understand the impact of COVID-19 on spatial interaction and flow of food and related commodities in the urban-rural nexus in Africa, with a view to suggest policy, legislation, and governance measures to reduce the impact and improve resilience of transport and food supply chain sectors of the economy to such pandemics. Undoubtedly, this will strengthen evidence-based approaches to inform resilient decision making in transport and food supply chain sectors. Transport systems and operators enhance urban-rural linkages and interactions through facilitating the daily flow of people, food, and goods between urban and rural areas, as well as linking rural food producers to urban food consumers. In addition, rural and urban areas are linked by agro-food value chains and food systems and by ecosystem services, labor, natural resources, energy, transport, and intermediate towns.

This study falls within the broader global track of Sustainable Development Goals (SDGs), in particular, Goal 11 on making cities and human settlements inclusive, safe, resilient and sustainable, while at the same time contributing to Goal 1 on access to food as part of poverty reduction, and Goal 17 on strengthening and revitalizing partnerships in sustainable development.

The study is also aligned to the general thematic areas of the UN-Habitat's Urban-Rural Linkages Programme, including urban and territorial planning; strengthening small and intermediate towns; spatial flows of people, products, services and information; fostering food systems; reducing environmental impacts in urban-rural convergences; developing legislation and governance structures; promoting inclusive financial investments and transportation between urban and rural areas; and fostering partnerships.

The countries selected for the study are Cameroon, Kenya, Nigeria, Senegal and Zimbabwe. The selection was based on their spatial location in Eastern Africa (Kenya), Western Africa (Nigeria and Senegal), Central Africa (Cameroon), and Southern Africa (Zimbabwe). In addition, the choice of these countries was based on their existing or potential institutional linkages with the UN-HABITAT, as well as institutional capacity to implement the study. As such, the country case studies were implemented by the University of Nairobi in Kenya, Ministry of Urban Development and Housing in Cameroon, Niger State Ministry of Lands and Housing in Nigeria, Université Gaston Berger de Saint-Louis du Sénégal in Senegal, and University of Zimbabwe in Zimbabwe. The study was conceived at a time when COVID-19 infection rates were increasing at rates that the governments of Cameroon, Kenya, Nigeria, Senegal and Zimbabwe were grappling to deal with. The various travel and mobility restrictions, including public health, hygiene and sanitation measures, were being strictly implemented and enforced. The situation has since changed. COVID-19 infection rates are relatively low, most of the COVID-19 restriction, prevention and control measures have been reviewed, lifted, relaxed and/or phased out depending on their efficacy, while vaccination exercises and campaigns have been up-scaled. Given these changes, urban-rural flows and interactions have resumed in the new normal.

There is, therefore, need for further investigation and understanding of urban-rural linkages dynamics in the context of post-pandemic resilience and adaptations. As such, this study has two main objectives, namely:

1. to assess the impact of COVID-19 on transportation of food and related commodities in the urban-rural nexus in Africa; and
2. to suggest policy, legislation, and governance measures to reduce the impact and improve resilience of the transport and food supply chain sectors of the economy to such pandemics.

As illustrated in the conceptual framework (**Figure 1.1**), the two objectives will be achieved through the lenses of flow of food along the urban-rural continuum within the context of food systems, as well the flow of goods and spatial interaction of people along the urban-rural continuum within the context of public transport systems.

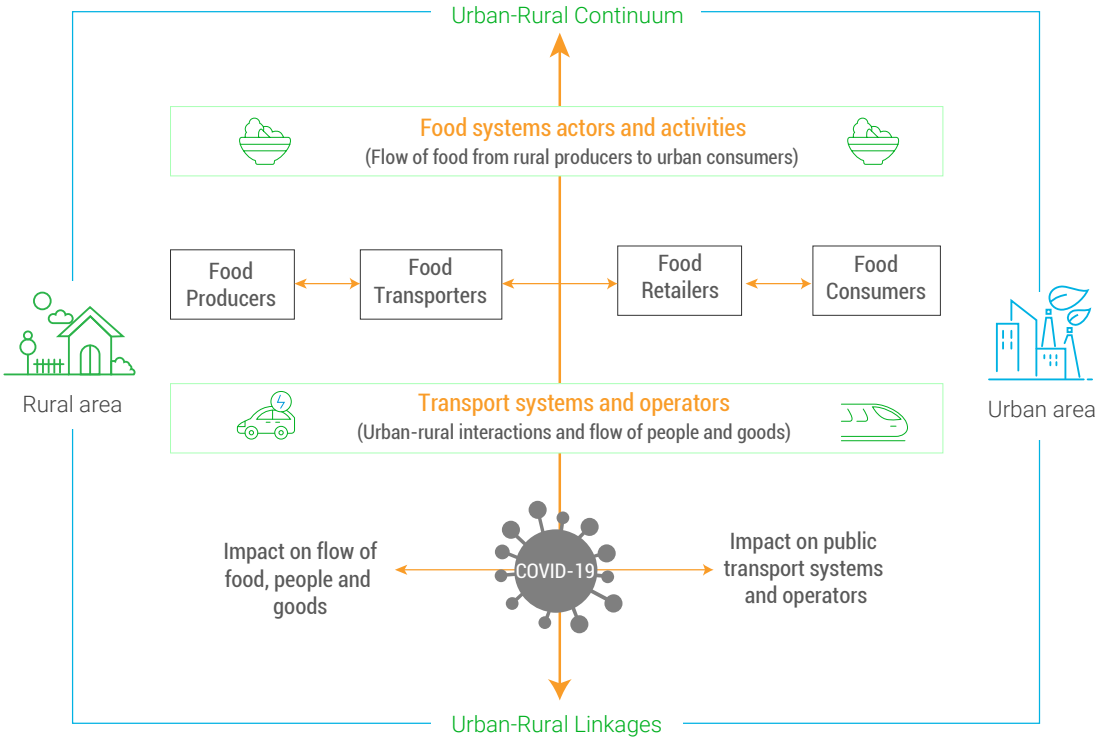


Figure 1.1. Conceptual Framework

1.2. Covid-19 Containment Measures in Cameroon, Kenya, Nigeria, Senegal and Zimbabwe

When the World Health Organization (WHO) declared COVID-19 outbreak a public health emergency of international concern, the governments of Cameroon, Kenya, Nigeria, Senegal and Zimbabwe put in place a number of COVID-19 infection, prevention and control measures. To provide a framework for coordination, the governments established national committees and task forces to respond to the pandemic. The Government of Cameroon put in place Inter-Ministerial Committee to monitor and evaluate implementation of the government's response strategy to the pandemic. The Government of Kenya established the National Emergency Response Committee on Coronavirus to coordinate her preparedness, prevention and response to the threat of coronavirus disease. The Federal Government of Nigeria established a Presidential Task Force on COVID-19 to coordinate, monitor and enforce COVID-19 preventive and containment measures. The Government of Senegal set up a National Epidemic Management Committee, while the Government of Zimbabwe established a Cabinet Inter-Ministerial Task Force on COVID-19 preparedness and response.

These national committees and task forces suggested a mix of COVID-19 containment measures in time and space, including international travel ban and mandatory screening at international entry and exit border posts; total, partial and selective lockdowns; curfews; restricting carrying capacity of public service vehicles; physical and social distancing in public places; and general public health hygiene measures.

Other measures that may have, directly or indirectly, affected mobility through restricting spatial interaction were suspension of local air transport operations, closure of education institutions, encouraging people to work from home, restrictions on public gatherings, closure of entertainment and recreational premises, and limiting of market trading hours.

International Travel Ban

The immediate response to contain the spread of COVID-19 was a ban on international travel that restricted movement into and out of the country. The international travel bans were enforced at varying scales and periods through closure of international borders; suspension of international passenger flights, especially those from countries with reported cases or high incidences of COVID-19 infection; suspension of issuance of entry visa; and suspension of missions abroad by government and state agencies officials. Authorized cross-border passengers and cargo transport operators were required to undergo mandatory COVID-19 screening at the international entry points (airports) and at inland and port border posts. The screening followed the WHO procedures and guidelines of completing a health declaration form, body temperature checks, quarantine measures, undertaking a COVID-19 test at the entry point or being tested 48 hours before travel, and having a COVID-19 free certificate that is valid for 14 days.

Lockdown Measures

Lockdown measures were enforced in varying degrees, geographical scales, and periods of time. However, Cameroon declared a state of emergency and put in place measures that restricted inter and intra-urban travel and limited trading hours, among others.

Generally, lockdown measures restricted movement of persons (either by road, rail or air) and public transport and commuter services into and out of areas that were considered COVID-19 hotspots and had high numbers and incidences of infection cases. Whereas movement within the restricted areas in Kenya was allowed, movement within the restricted areas in Nigeria was limited and controlled.

In Kenya, lockdown measures restricted movement into and out of Nairobi Metropolitan Area, Mombasa County, Mandera County, Kilifi County and Kwale County. Lockdown was also enforced in city neighbourhoods of Eastleigh in Nairobi and Old Town in Mombasa. In addition, the government prohibited hawking and public gatherings and ordered closure of public spaces, malls, markets, restaurants, and eateries in the two neighbourhoods. In Nigeria, total lockdown measures were enforced in the major cities of Lagos, Ogun, Abuja and Minna. During this period, all the borders linking these cities to the rest of the country were shut. In addition, there was a ban on non-essential inter- and intra-state passenger (air, road and train) travels, while all forms of economic activities, shops, malls, schools and offices remained closed.

In Senegal, lockdown measures restricted movement between regions as well as suspension of national formalities related to pilgrimages to holy places of Islam and Christianity for the year 2020. In Zimbabwe, total lockdown measures were enforced throughout the country for the first three months of COVID-19. However, a letter of permission from the police was required for one to travel from one town to another or from a rural to an urban area, while medical issues were handled as emergencies. In addition, movement within a town was allowed for essential service providers or through an authorization letter from the employer, indicating the reason to be physically at work.

Curfew Measures

National curfews restricted movement of persons during certain hours of the night. In Cameroon, the curfew affected operations of entertainment and recreation places. These establishments were ordered closed by 6.00pm but only for a short period of time. In Kenya, the national curfew restricted public gatherings, processions or movement during the period and time of curfew. The curfew was initially from 7.00pm to 5.00am, then from 9.00pm to 4,00am, then from 10.00pm to 4.00am, and lastly from 11.00pm to 4.00am. Public transport operators, business owners and members of public were advised to adjust their working times so as to comply with the curfew hours. In Nigeria, the national curfew was implemented as one of the measures to address the impacts of the severe lockdown policies, with a view to restore some economic and business activities in certain sectors. The curfew was gradually enforced from 8.00pm to 6.00am, then from 10.00pm to 4.00am, and lastly from 12.00am to 4.00am. In Senegal, curfew measures were implemented over a period of time, initially between 7.00pm and 7.00am and later adjusted to between 9.00pm and 5.00am. Even then, people were advised to work from home during the non-curfew hours.

In Zimbabwe, the national curfew restricted public gatherings, processions or movement during the period and time of curfew. The curfew was initially from 5.00pm to 6.00am with businesses operating from 8.00am to 3.00pm, then from 8.00pm to 5.30am, then from 10.00pm to 5.00am, and the last one was from 12.00am to 4.00am.

Restricting Carrying Capacity of Public Service Vehicles

All the countries limited the carrying capacity of public service vehicles in order to achieve physical and social distancing in the public transport sector. In Cameroon, this measure was implemented according to the actors in the public transport sector and basically entailed reducing the number of passengers by about 50% of their licensed capacity. In Kenya, public transport services, passenger rail, bus, ***matatu*** and taxicab service vehicles were required to carry not more than 60% of their licensed capacity. Motorcycles, bicycles and tricycles were allowed to carry not more than one passenger. Commercial vehicles or vessels, including lorries and pick-up trucks, were restricted to carry the driver and no more than three assistants. In Nigeria, the guidelines reduced the occupancy of all public transport buses by 50% of usual occupancy, while taxi operators were limited to three passengers and tricycles to two passengers. In Senegal, public transport operators were required to reduce their carrying capacity by 50%, while private saloon vehicles were limited to three occupants. In Zimbabwe, combis were to carry 50% of their normal carrying capacity, while conventional busses were limited to about 60% of their normal carrying capacity.

Physical and Social Distancing Measures

Physical and social distancing measures were enforced in public places, including public service vehicles, markets, supermarkets and shopping malls. Every person in a public place was required to maintain a physical distance of at least one to three metres from the next person. This measure restricted gatherings of more than 50 people in Kenya, 20 people in Nigeria, and between 30 to 50 people in Zimbabwe. It also affected service operations in bus termini, in food retail premises, as well as impacting on the carrying capacity of passenger service vehicles. Every business entity, trader or vendor was required to put in place measures to ensure that physical and social distance is maintained. In particular, supermarkets and shopping malls were required to regulate the number of customers within their premises at any given time.

General Public Health Hygiene

The governments enforced guidelines to enhance general public health hygiene in public places. In particular, regular handwashing and use of face masks was recommended. As such, business premises, markets, food retail outlets and public transport operators were required to provide their clients with handwashing points (with running water and soap) and/or alcohol-based sanitizers. In some cases, the national or regional/county governments provided handwashing facilities and disinfection kits in bus termini.

Other hygiene measures included regular cleaning of contact surfaces, use of contact-less payments such as MPESA in Kenya and Ecocash in Zimbabwe, regular disinfection of bus termini, passenger vehicles and markets, and body temperature checks before boarding public service vehicles and at the entrance of supermarkets and shopping malls.

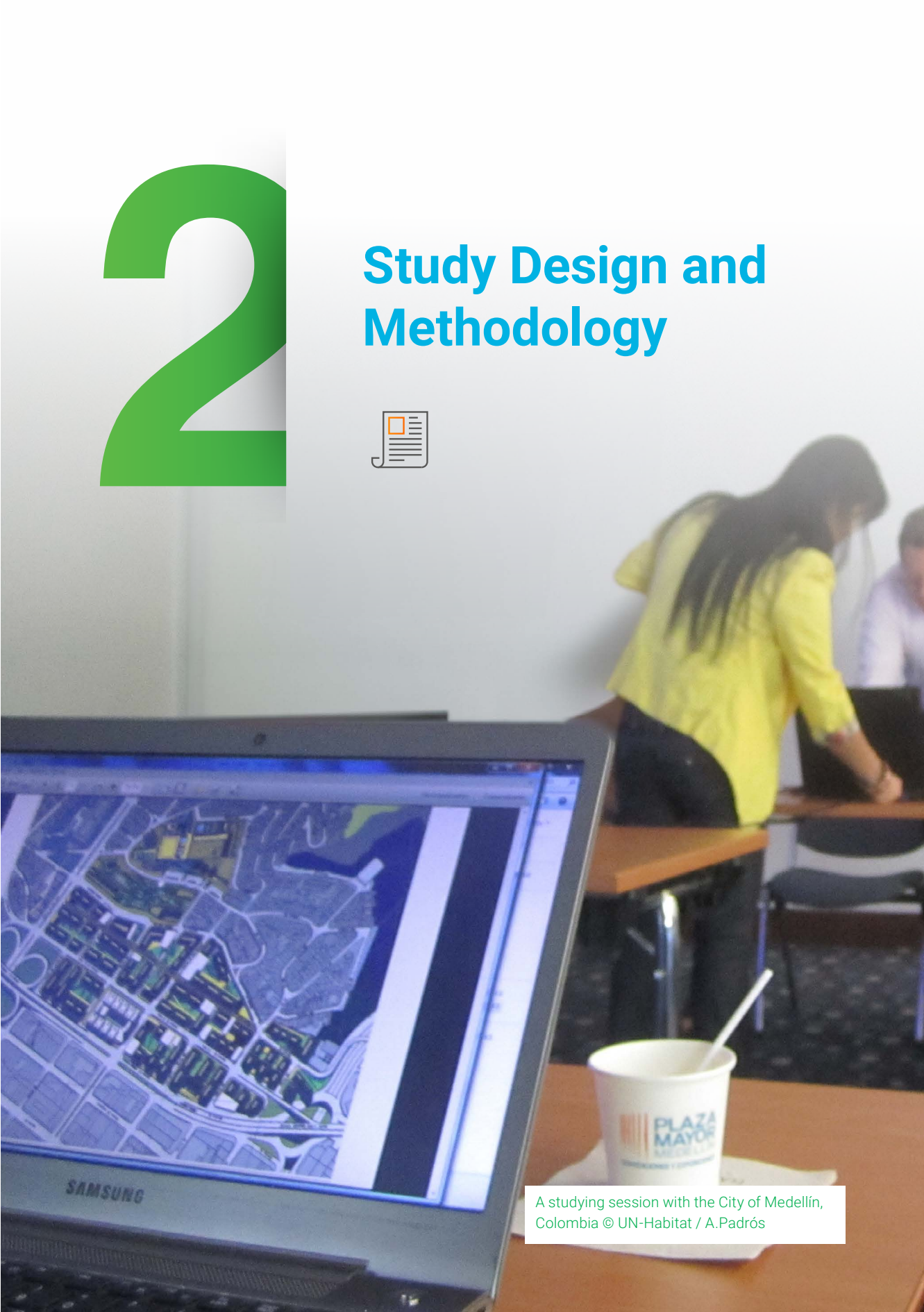
Government Actions that Facilitated Flow of Goods and Food

During the international travel ban, lockdown and curfew periods, the governments made provisions for continued flow of essential goods, services and food. Essential service providers, as determined by each country, were allowed to operate in strict compliance to the laid down guidelines. In Cameroon, exceptions were made for cargo flights and ships carrying daily consumer goods and essential goods and materials whose stopover times would be limited and controlled. In Kenya, commercial vehicles or vessels undertaking transportation of food and farm produce, cargo and goods were exempted from the lockdown restrictions. Kenya Airports Authority, Kenya Ports Authority, Kenya Railways Corporation, Kenya Ferry Services, and food and farm produce processors, distributors, dealers, wholesalers, and transporters were exempted from the curfew restrictions.

In Nigeria, cargo vessels that had been at the sea for more than 14 days were allowed to dock at the seaports. The seaport in Lagos and retail shops and malls selling essential goods were allowed to operate during the lockdown period. Transportation of essential goods, donated relief items, and movement of agricultural produce and foods was allowed. In addition, movement within the lockdown states was allowed strictly for the purpose of performing an essential service, obtaining essential goods or services, or seeking medical care. As such, selected businesses and service providers were allowed to operate within certain hours during the lockdown period. In other words, there was partial and controlled interstate movement of goods and services from producers to consumers. To avoid food supply and demand crises, the Government of Senegal authorized movement of goods and food between its regions. In Zimbabwe, the government allowed movement of people and transport operators for essential services such as food and medication.

2

Study Design and Methodology



A studying session with the City of Medellín, Colombia © UN-Habitat / A.Padrós

2.1. Study Approach

Figure 2.1 Illustrates the various steps in the study design and methodology. The study used a mixed method approach to achieve its objectives. The mixed methods included field surveys in the selected study sites, key informant interviews, focus group discussions, field observations and desktop literature review.

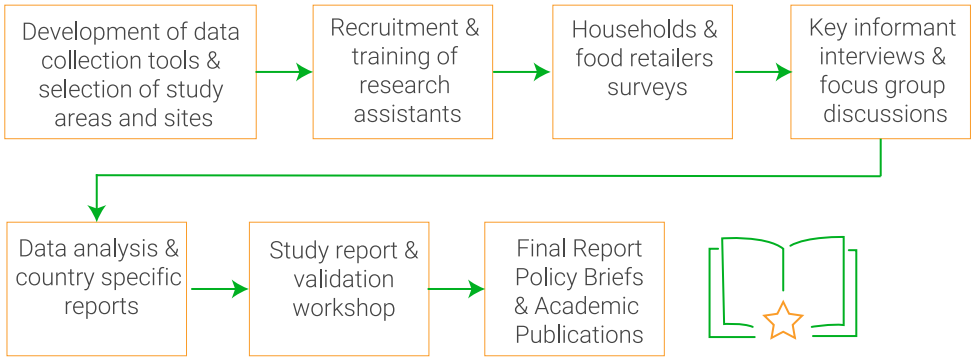


Figure 2.1. Study design and methodology

2.2. Determination and Selection of Study Areas

The study areas in Cameroon, Kenya, Niger State (Nigeria), Senegal and Zimbabwe were purposively selected to represent corridors that reflect, in as much as possible, urban-rural linkages in terms of flow of food, people and commodities between urban and rural areas.

The main consideration was that spatial and functional interactions between urban and rural areas occur in a continuum in which the flow of food, people and commodities thrive as dictated by their different but complementary sectors and activities. As such, the study areas include an urban area and a rural area that best presents enhanced and enduring urban-rural linkages and interactions.

The study area in Cameroon covers the urban-rural linkages corridor between Yaoundé city and Akono rural area, along the Yaoundé-Ngoumou-Akono road (Figure 2.2). Yaoundé is the capital of Cameroon with a population of 3.6 million people in 2019, while Akono is an important agricultural production rural area located about 60 kilometres from Yaoundé. Akono rural market plays a major role in supplying and distributing food from Akono to Yaoundé's Mvog-mbi market.

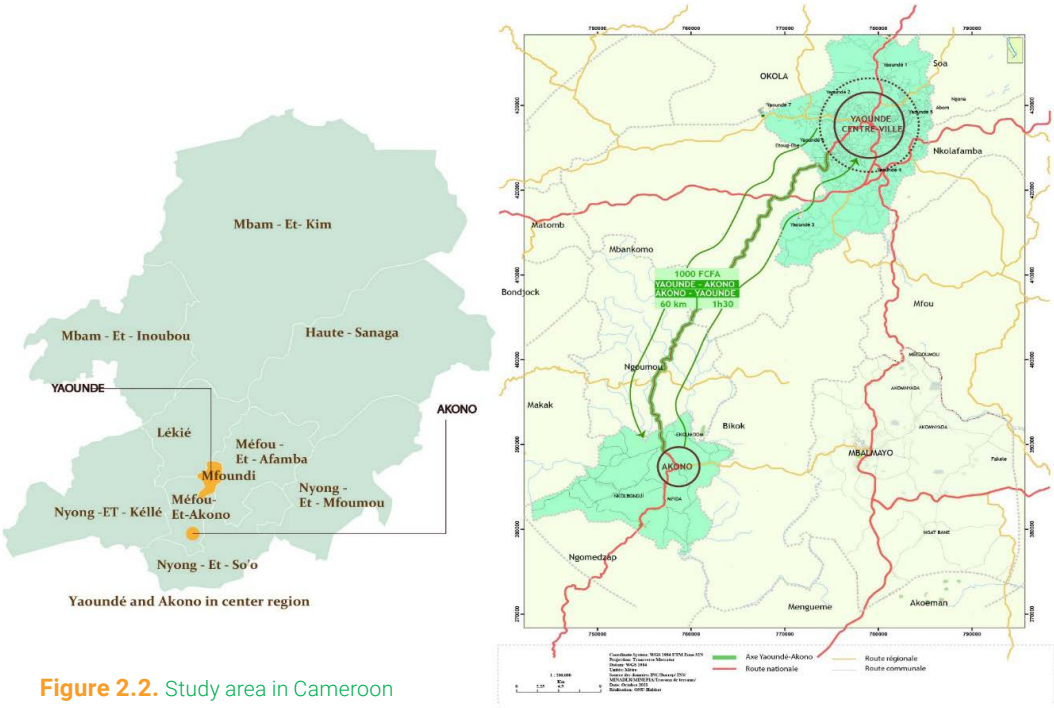


Figure 2.2. Study area in Cameroon

The study area in Kenya covers the urban-rural linkages corridor between Nairobi city and Magumu and Kinale rural areas, along the Nairobi-Naivasha-Nakuru Highway (**Figure 2.3**). Nairobi is the capital of Kenya with a population of 4.3 million people, while Magumu and Kinale are located in Nyandarua County and Kiambu County, respectively. Soko Mjinga rural market plays a major role in food supply and distribution from Magumu and Kinale to Nairobi's Wakulima market.

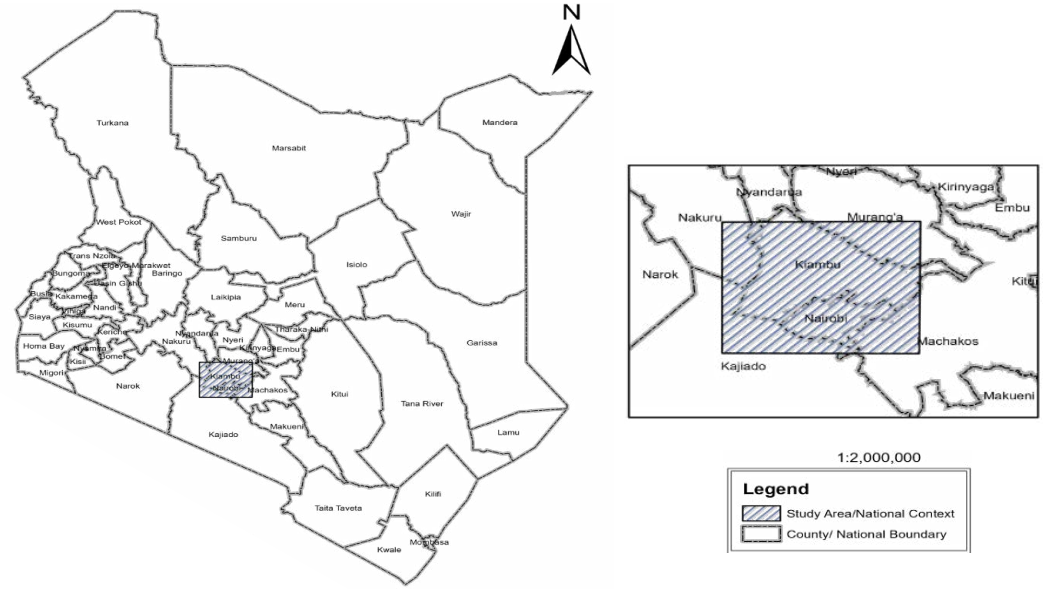


Figure 2.3. Study area in Kenya

The study area in Nigeria's Niger State covers the urban-rural linkages corridor between Minna city and Gwada and Beji rural areas (**Figure 2.4**). Minna, with a population of 506,000 people, is the administrative capital of Niger State, while Gwada and Beji are major agrarian rural areas in Niger State located 43.6 kilometres and 40 kilometres from Minna, respectively. Gwada and Beji markets serve as a major food source to Minna and Abuja city.

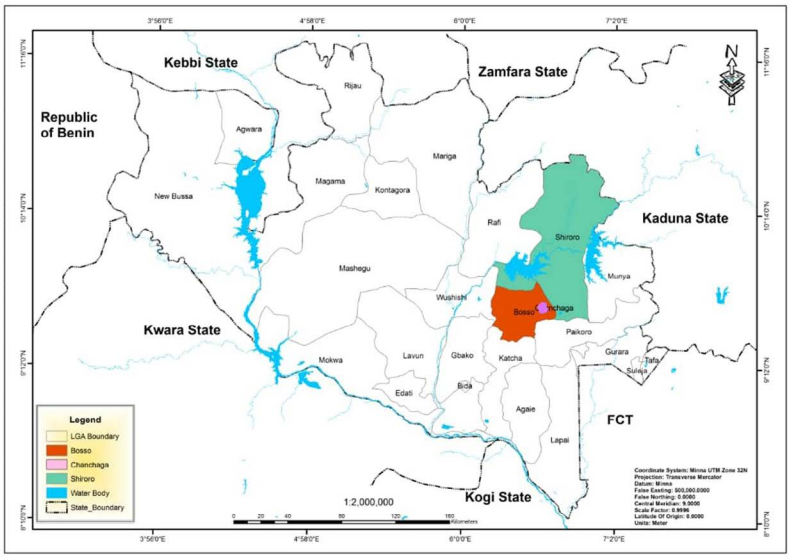


Figure 2.4. Study area in Niger State

Source: Niger State Geographic Information System (NIGIS

The study area in Senegal covers the urban-rural linkages corridor between Dakar city and Lompoul-Potou rural area, along Dakar-Saint Louis Highway (**Figure 2.5**). Dakar is the capital of Senegal with a population of 2.5 million people, while Lompoul-Potou is located 210 kilometres from Dakar in Lounga region in the northern part of the country. Lompoul-Potou is a food production area with food markets that serve Dakar's Syndicat market.

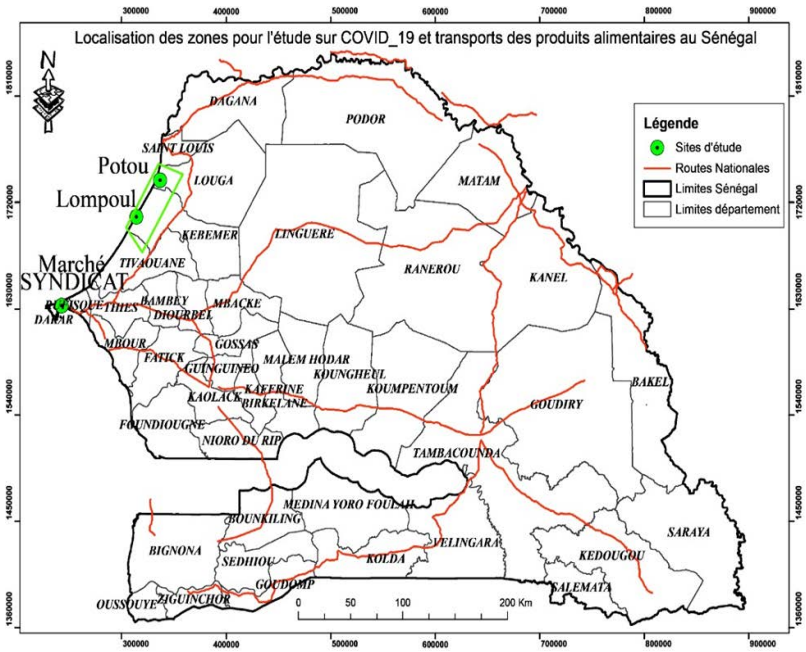


Figure 2.5. Study area in Senegal

The study area in Zimbabwe covers the urban-rural linkages corridor between the city of Harare and Mutoko and Murewa rural districts, along the Harare-Nyamapanda Highway (**Figure 2.6**). Harare is the capital of Zimbabwe with a population of 1.5 million people. Mutoko and Murewa are rural market-gardening and grain cultivation districts located 155 kilometres and 140 kilometres from Harare, respectively. Food produce from Mutoko and Murewa markets find their way to Harare's Mbare Musika market.

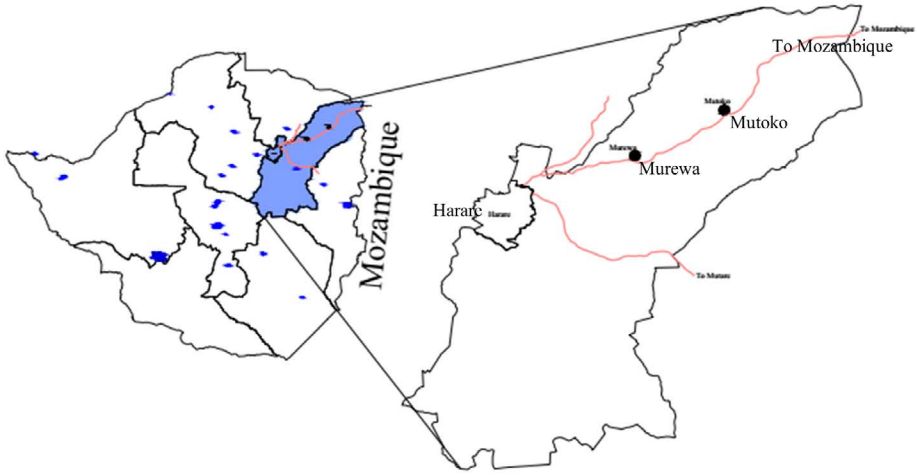


Figure 2.6. Study area in Zimbabwe

2.3. Data Collection Sites and Target Population

Table 1 gives a summary of the general framework used in the selection of data collection sites and target population, while Table 2 provide details of the selected data collection sites in each country. The study sites were a rural and urban area, rural and urban food market, urban-based supermarket, urban residential neighbourhoods, urban informal food vending points, and public transport operators' termini. The target populations were rural smallholder farming households, rural and urban food retailers, food transporters, market and supermarket officials, government officials, urban households, urban informal food vendors, and public transport operators.

Table 1. Framework for selection of data collection sites and target population

Site	Justification	Target population
Rural area	Area with linkages with selected urban area (city) and where smallholder farmers produce food	Rural smallholder farming households
Rural food market	Market in selected rural area where food from smallholder farmers are sold and distributed	Rural food retailers, food transporters and market officials

Urban area (city)	Area with linkages with selected rural area	Government officials
Urban food market	Market in selected urban area (city) where food from selected rural area are sold and distributed	Urban food retailers, food transporters and market officials
Urban supermarket	Formal food supply chain serving households of selected residential neighbourhoods in selected urban area (city)	Supermarket officials
Urban residential neighbourhoods	Neighbourhoods with a mix of high, middle and low-income households	Urban households
Urban informal food vending points	Informal food supply chain serving households of selected residential neighbourhoods in selected urban area (city)	Urban informal food vendors
Public transport operators' termini	Operating along the selected rural and urban areas (city)	Public transport operators

Table 2. Data collection sites by country

Site	Cameroon	Kenya	Niger State	Senegal	Zimbabwe
Rural area	Akono area	Magumu and Kinale areas	Gwada and Beji areas	Lompoul-Potou area	Mutoko and Murewa districts
City	Yaoundé	Nairobi	Minna	Dakar	Harare
Rural food market	Akono market	Soko Mjinga market	Gwada and Beji markets	Lompoul and Potou markets	Mutoko and Murewa markets
Urban food market	Mvog-mbi market	Wakulima market	Kure market	Syndicat market	Mbare Musika market
Urban residential neighbourhoods and informal food vending points	Olézoa1, Ekié2 and Etam-Bafia3	Buru Buru Phase III2 and Jericho3	GRA1, Bosso Estate1, Talba2, Wushishi2, Kpagungu3 and Bosso Town3	Pikine	Kampfinsa1, Aspindale2 and Kambuzuma3

Urban supermarket	Carrefour and Casino supermarkets	Naivas supermarket	Tofa supermarket	Auchan supermarket	Pick N Pay supermarket
Public transport operators' termini	Yaoundé-Akono route	Nairobi-Soko Mjinga-Njabini route	Minna-Bida; Minna-Suleja; and Minna-Beji route	Dakar-Lompoul-Potou route	Harare-Murewa-Mutoko route
1High-income; 2Middle-income; and 3Low-icome residential neighbourhoods					

2.4. Methods of Data Collection and Analysis

The study collected relevant primary data through the use of questionnaires, key informant interviews, focus group discussions and field observations. In as much as these data collection tools were standardized across the study countries, there was room for domestication to country specific local contexts and situations, where applicable. The questionnaires were administered to the sampled rural smallholder farming households, rural food retailers, urban food retailers, urban informal food vendors, and urban households. Key informant interviews were subjected to food transporters, market and supermarket officials, public transport operators, and government officials. In addition, focus group discussions were used to collect any relevant information from the rural food retailers. The questionnaires were uploaded onto the KOBO Collect software and administered through tablets or android mobile phones.

The quantitative data obtained from the questionnaires was analysed using frequency distributions generated from KOBO Collect, Microsoft Excel and SPSS software. On the other hand, qualitative data generated from key informant interviews and focus group discussions was subjected to content analysis.

2.5. Sampling Procedure

Table 3 presents the study's target populations and sample sizes by country. In each country, simple random sampling procedure was used to determine the rural smallholder farmers, rural food retail traders, urban food retail traders, urban informal food vendors, and urban households to be included in the study. Even then, only those willing to participate in the survey were included in the sample. On the other hand, purposive sampling was used to determine the various categories of key informants and focus groups.

The key informants included food transporters, market officials, supermarket officials, public transport operators, and government officials.

Table 3. Target populations and sample sizes by country

Target population	Cameroon	Kenya	Niger State	Senegal	Zimbabwe
Rural smallholder farmers	30	35	59	30	30
Rural food retailers	30	36	73	31	30
Urban food retailers	30	37	30	30	30
Urban informal food vendors	90	36	32	30	30
Urban households	90	39	32	30	30
Rural market food transporters	3	4	3	3	3
Urban market food transporters	3	3	3	3	3
Rural market officials	1	1	1	2	1
Urban market officials	1	1	1	2	1
Supermarket officials	2	1	1	2	0
Public transporter operators	2	4	3	4	3
Government officials	3	4	1	1	1

2.6. Ethical Considerations

Informed consent was sought from all the respondents before the start of the interview, as well as assurance of confidentiality of personal information. In addition, approvals were sought from market and supermarket authorities, and from farmers' and traders' associations where they existed.

3

Covid-19 and Rural Smallholder Food Production

3.1. Characteristics of the Sampled Smallholder Farmers

Table 4 presents a summary of selected characteristics of the sampled rural smallholder farmers. The results indicate that smallholder farming is largely male-dominated in Cameroon, Niger State, Senegal and Zimbabwe, while female-dominated in Kenya. Their education levels vary with high proportions of farmers with no education in Niger State and Senegal, those with primary education in Kenya, and those with secondary education and above in Cameroon and Zimbabwe. In terms of marital status, most of the farmers are married. Lastly, majority of the farmers in Cameroon, Niger State, Senegal and Zimbabwe were born in the same area they practice farming, while most of the farmers in Kenya are migrants from elsewhere.

Table 4. Characteristics of smallholder farmers

Characteristics	Percentage (%) of sampled farmers				
	Cameroon	Kenya	Niger State	Senegal	Zimbabwe
Gender					
Male	55	23	97	96	79
Female	45	77	3	4	21
Education Level					
None	5	11	44	74	0
Primary	10	49	14	13	21
Secondary and above	85	48	42	13	79
Marital Status					
Single	32	6	3	20	7
Married	52	91	95	71	89
Divorced/widowed	16	3	2	9	4
If born in the area					
Yes	68	34	75	52	75
No	32	66	25	48	25

3.2. Rural Smallholder Farming Practices

Smallholder Farming in Akono, Cameroon

Majority (87%) of the smallholder farmers in Akono practice crop cultivation on an average farm holding of approximately one hectare. The rest (10%) practice both crop cultivation and livestock keeping. The farmlands are largely inherited family land (74%) or rented (52%). The Akono area is known for producing cassava and plantain, as well as maize, macabo, potatoes, cocoa, groundnuts, vegetables and fruits. On the other hand, the livestock keepers prefer fish and pig farming. Food products from Akono are mostly sold in Akono market and thereafter find their way to Yaoundé's Mvog-mbi market. The farmers sell their farm produce within the rural area (29%), to transporters (39%) and in the nearby urban markets (32%).

Smallholder Farming in Magumu and Kinale, Kenya

About two thirds (74%) of the smallholder farmers in Magumu and Kinale practice mixed farming, while the rest (26%) engage in crop cultivation only. A large majority (77%) of them have engaged in farming for over 10 years. The farmlands, ranging between 0.25 to 1.25 acres, were acquired through purchase (30%), inheritance (25%), rented or leased (20%) or are family lands (20%). The dominant crops grown by the farmers are potatoes, kale, cabbage, carrots, spinach, maize and green peas. More than half (58%) of the farmers sell their produce at nearby Soko Mjinga market and market centres or towns. The rest sell their produce within the farm area (25%) to middlemen or sell directly to transporters and distributors (12%). Some of the produce find their way to Kajiado, Nairobi, Mombasa, Kisumu and Nakuru cities.

The livestock farmers keep cows, chicken, goats, sheep and rabbits, and sell their products largely at the farm-level.

Smallholder Farming in Gwada and Beji, Niger State

More than half (59.4%) of the smallholder farmers in Gwada and Beji practice mixed farming, while the rest (40.6%) engage in crop production only. On average, the farmers have engaged in farming for 31years, with an average farm size of 3.78 acres. The farmlands are largely inherited (57.6%), rented (6.9%) or leased (6.8%). The crop farmers grow maize, guinea corn, yam, rice, beans, millet, groundnut, soya beans, vegetables, cassava and sugar cane, while the livestock farmers keep cattle, fish, sheep, birds, goat, turkey and chicken. These farm products are largely sold in Beji, Gwada, Kwata, Paiko, Gwadabe, Zungeru, Kuta, Lambata, Sarkin-Pawa and Zumba market centres located within Niger State.

Smallholder Farming in Lompoul-Potou, Senegal

Agriculture is the main economic activity in Lompoul-Potou region. Agriculture is practiced not only by the indigenous population of the area, but also by migrants from other regions of Senegal. Most of the smallholder farmers (56.7%) are engaged in crop cultivation only, while the rest (43.3%) practice mixed farming. The crops grown in the region include onions, carrots, tomatoes, potatoes, peppers and cabbages, among others. These food products are largely sold to markets in Saint-Louis, Dakar and Louga.

Smallholder Farming in Murewa and Mutoko, Zimbabwe

Majority of the smallholder farmers in Murewa and Mutoko rely on both crop cultivation and livestock keeping as their main source of subsistence and income. Most of them acquired their farming land through inheritance or as gifts from members of extended family. All the farmers, except one, practice mixed farming to diversity their farming activities, income sources and spread their farming risks. The major crops grown in the two areas include watermelon, green vegetables, potatoes, oranges, sugarcane, pepper, maize, sweet potatoes, banana, tomatoes, butternut, cucumber, peanuts, sunflower, soya beans, ground nuts, peas and carrots. The common livestock kept are cattle, goats and chickens. The crops are sold locally, in nearby market centres and in Harare, while livestock products are mainly sold locally.

Harvest of green maize in Kenya © Extracted from country reports

Kale farm in Zimbabwe © Extracted from country reports

Cabbage farm in Senegal © Extracted from country reports

Yam barns in Niger State © Extracted from country reports

3.3. Smallholder Farmers Mode of Transporting Farm Produce

Smallholder farmers transport their farm produce to rural food supply markets using a mix of modes of transportation (**Figure 3.1**). Smallholder farmers in Cameroon largely depend on personal vehicles and public service transport, while in Kenya, hired transport and use of handcart is dominant among the farmers. Majority of the farmers in Niger State and Senegal depend on hired transport, while majority of the farmers in Senegal depend on other means of transport such motorcycle taxis.

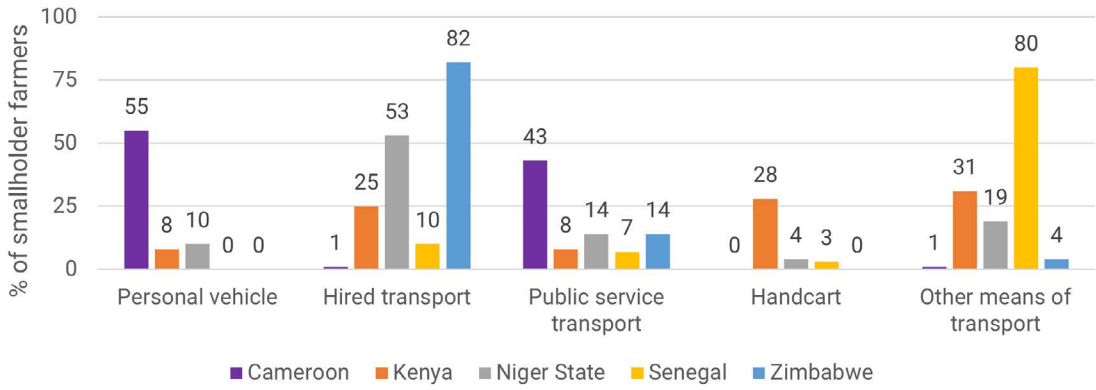


Figure 3.1. Smallholder farmers mode of transporting farm produce

3.4. Smallholder Farmers and COVID-19 Containment Measures Compliance

As part of the efforts to prevent the spread of COVID-19 on their farms, smallholder farmers in the study countries heeded in various degrees to government advisories on movement restrictions, use of face masks, handwashing, and social distancing during their farming activities. **Figure 3.2** summarize the extent to which the smallholder farmers observed COVID-19 movement restriction and public health measures.

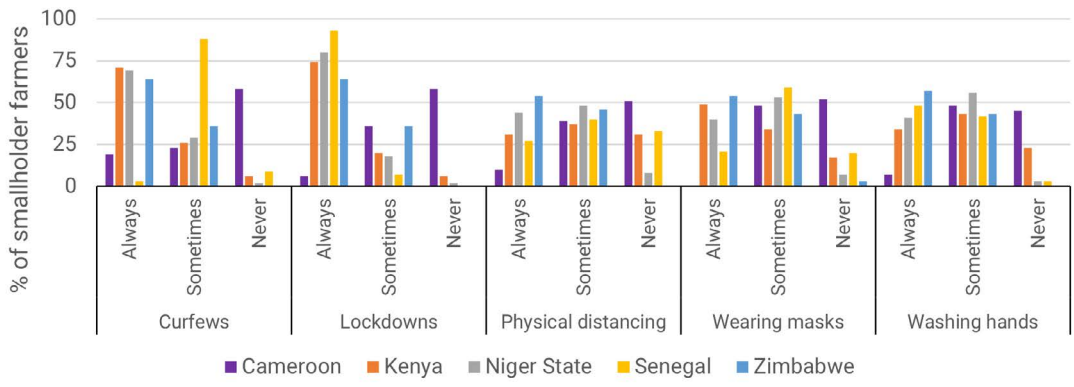


Figure 3.2. Smallholder farmers compliance to COVID-19 containment measures

Generally, most of the farmers observed, 'always' or 'sometimes', movement restriction measures (curfews and lockdowns) more than the public health measures (physical distancing, wearing masks and washing hands). However, there are high proportions of farmers in Cameroon who 'never' observed curfews, lockdowns, physical distancing, wearing masks and washing hands measures. In addition, the proportion of farmers in Kenya who 'always' observed curfews is comparatively much lower than in other countries. The Cameroon and Kenya cases can be attributed to the fact that curfews were not strictly enforced in the rural areas, while lockdowns were largely urban-based.

3.5. Impact of COVID-19 Containment Measures on Smallholder Farmers

The smallholder farmers were asked whether or not COVID-19 containment measures affected their farming activities. More than half of the farmers in all the study countries indicated that COVID-19 containment measures affected their cost of production, sales of farm produce, and selling price of farm produce (**Figure 3.3**). However, Cameroon had a very low proportion of farmers who reported an impact on the cost of production. In addition, there was relatively less impact, in all the study countries, on the type and variety of farm produce that the farmers produced and sold.

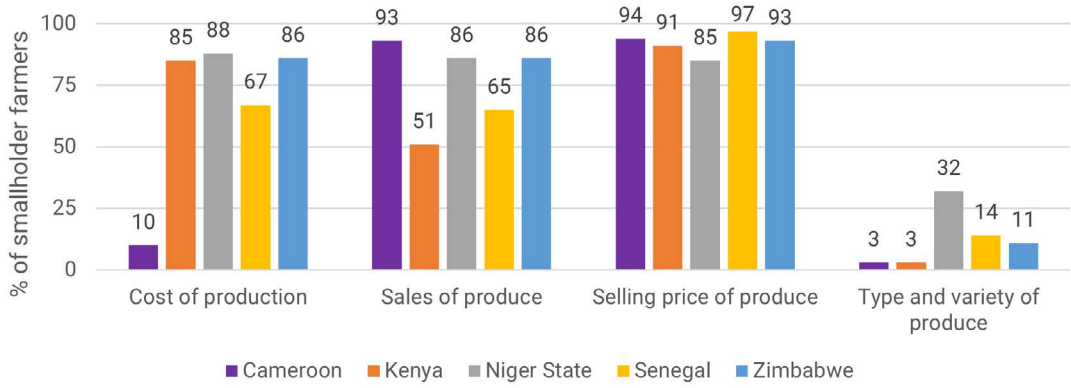


Figure 3.3. Impact of COVID-19 containment measures on smallholder farmers

Impact on Cost of Production

Majority of the farmers reported a general increase in their cost of production that was largely attributed to high costs of transport and farm inputs such as seeds, fertilizers, pesticides and herbicides from the local suppliers. Transport cost is a key factor because most of the smallholder farmers rely on personal vehicles, hired transport and public service transport to transport their farm produce to the rural food supply markets. Farmers in Zimbabwe reported additional costs from payment of bribes at the many road blocks that enforced movement restrictions during curfew and lockdown periods, while farmers in Senegal attributed the high cost of production to increased cost of fuel for both production and transportation of food products.

However, some farmers reported a reduction in their labour costs because of engaging fewer workers and labourers on their farms as a result of the curfew and lockdown measures.

Impact on Sales of Farm Produce

Majority of the farmers reported that sales of their farm produce had reduced due to decreased production, limited transport and logistical delays in transporting farm produce to the operational markets, closure of some markets and reduced market operation hours, and decreased customer base. Sales of farm produce are highly dependent not only on production, but also on availability of ready market and means of transport. COVID-19 curfews and lockdowns meant that there was restriction of movement to facilitate movement of farm produce as well as closure of food markets where farm produce is purchased thus limiting food supply and customer bases of smallholder farmers.

Impact on Selling Prices of Farm Produce

Most of the farmers indicated that they sold their farm produce at relatively lower prices. However, some farmers noted that they had to increase the selling prices of their farm produce due to the increased costs and farm inputs and transport. Due to lack of storage facilities, most of the farmers were forced to sell their perishable farm produce at very low throw-away prices to dispose them quickly and to avoid losses, rotting, over ripening and wastage.

> *"Last year (2021), we were forced to sell our crops at extremely low prices. Imagine selling a bag of onions for 700 francs* [instead of CFA5,000] *and a bag of potatoes for 1,000 francs or slightly more* [instead of CFA7,500]. *We even had to throw some of these food products in the fields because they perished in our hands without the possibility of selling them. Really, we are too tired and we are asking for help from the state"* (Senegal: Transcribed Interview, 2022)

In addition, some of the farmers had to reduce the selling prices of their farm produce due to decreased number of customers. In some cases, middlemen took advantage of the short trading periods and farmers' need to sell all their products quickly to dictate for very low selling prices.

> *"Because of the closure of the market I have to sale it to my neighbours at a cheap price (…) Lack of transportation to convey my farm products for sale made me to reduce to price of the commodities for the few available buyers. For instance, one Kworia (100 tubers) of yam was sold for N100,000 prior to COVID-19 but the price dropped to N40,000 during Covid-19"* (Niger State: Transcribed Interview, 2022)

Impact on Type and Variety of Farm Produce

There was relatively less impact, in all the study countries, on the type and variety of farm produce that the farmers produced and sold. However, some farmers noted that, due to lack of storage facilities and customers, they were forced to stop producing perishable crops, while some reported that they changed to growing crops that mature within a shorter period of time.

> *"I stopped the production of perishable goods and started producing non-perishable like millets"* (Niger State: Transcribed Interview, 2022)

3.6. Smallholder Farmers Coping Strategies and Recovery from Impacts of COVID-19

Coping Strategies

The following strategies were adopted by the smallholder farmers to cope with the negative impacts of COVID-19 on their farming activities.

- Lowering of farm produce prices in order to clear stock and prevent losses.
- Storage of non-perishable grains hoping to sell them when markets re-open.
- Selling of farm produce directly to customers in selected shopping centres, residential neighbourhoods, and along main roads that had no police enforcements.
- Taking financial loans to sustain the affected farming activities.
- Use of organic manure as a substitute to the high prices of fertilizers.
- Resorting to alternative small-scale businesses and other sources of livelihoods.

Extent of Recovery from Impacts of COVID-19

The sampled farmers were asked the extent to which their farming activities had recovered following the relaxation of the COVID-19 containment measures (**Figure 3.4**). At the time of the interviews, more than half of the farmers had recovered to a large and moderate extent, except in Zimbabwe where 57% of the farmers had not recovered or had recovered to smaller extent. Notably, 42% of the farmers in Zimbabwe reported that they had not recovered from the impacts of COVID-19 containment measures, while no farmer in Kenya had recovered to larger extent.

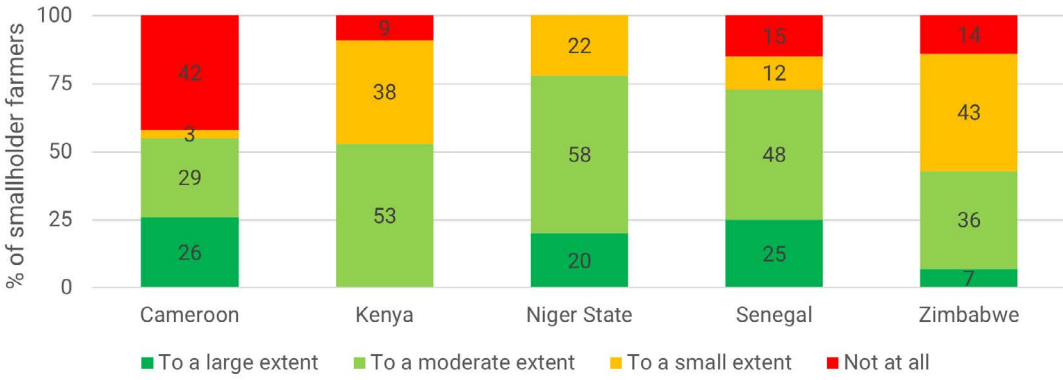


Figure 3.4. Smallholder farmers' extent of recovery from COVID-19 impacts

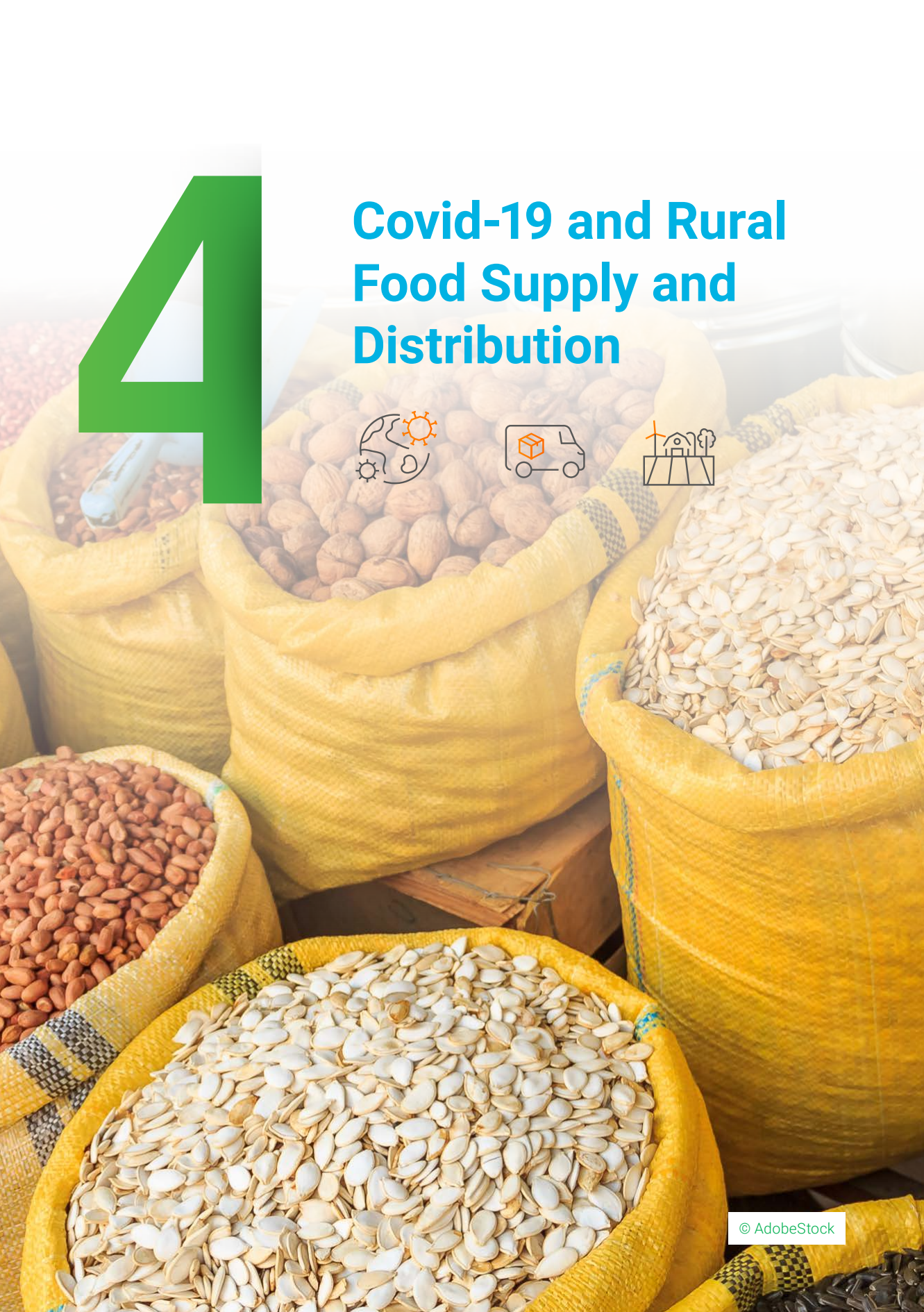
Suggestions for Government Interventions

The following government interventions were suggested to reduce the negative impact of COVID-19 on rural smallholder farmers.

- Allowing food markets to operate fully during such pandemics in order to facilitate smallholder farmers sell their farm produce.
- Provision of financial support, grants or affordable loans to cushion smallholder farmers.
- Supporting smallholder farmers through provision of farm inputs such as seeds and fertilizers.
- Lowering or subsidizing the prices of farm inputs.

4

Covid-19 and Rural Food Supply and Distribution



4.1. Characteristics of the Sampled Rural Food Retailers

Table 5 presents a summary of selected characteristics of the sampled rural food retailers. Rural food retailing is largely dominated by females in Cameroon, Kenya, Senegal and Zimbabwe, with the exception of Niger State which has 70% male food retailers. High proportions of rural food retailers with no education are in Niger State and Senegal, those with primary level of education are in Cameroon and Kenya, while Zimbabwe has 80% of the food retailers with secondary education and above. In terms of marital status, majority of them were married. Lastly, majority of the rural food retailers in Niger State, Senegal and Zimbabwe were born in the same area they practice food retailing business, while the majority in Cameroon and Kenya are migrants from elsewhere.

Table 5. Characteristics of rural food retailers

Characteristics	Percentage (%) of sampled rural food retailers				
	Cameroon	Kenya	Niger State	Senegal	Zimbabwe
Gender					
Male	21	42	70	45	30
Female	79	58	30	55	70
Education Level					
None	7	6	63	90	0
Primary	48	69	26	10	20
Secondary and above	45	25	11	0	80
Marital Status					
Single	24	8	9	3	3
Married	69	81	91	87	87
Divorced/widowed	7	11	0	10	10
If born in the area					
Yes	24	39	63	55	67
No	76	61	37	45	33

Food retailing is the main source of household income for most rural food retailers. They engage in food retailing business because it does not need a lot of initial start-up capital, it is flexible, and that one is self-employed. For some of the food traders, it is the best option for those who lost their jobs and, therefore, provides a steady stream of income to them. They chose to operate from the rural markets because of their strategic locations along transportation corridors, ease of getting food supplies from the surrounding farms, proximity to their places of residence and home, and prospects of high profit margins from a large customer catchment.

4.2. Characteristics of the Selected Rural Food Supply Markets

Akono Market in Cameroon

Akono market, which has been in operation for the last 12 years, is both a wholesale and retail market with about 120 traders. It operates every Tuesday, Wednesday and Saturday with no fixed opening time as traders are found in the market as early as 4.00am. The market has an open-air section and an enclosed section with stalls and shops. Retailers operating from the stalls and shops pay a monthly rent, while those on the open-air side pay a daily market fee. The food products sold in the market include vegetables, tomatoes, onions, pepper, fruits (banana, mangoes), cassava, plantain, potatoes, maize, beans, groundnuts, peanuts, rice, yam, sugarcane, cocoa, palm oil, celery, macabo, fish, chicken, eggs, and livestock.

Soko Mjinga Market in Kenya

Soko Mjinga market is located in Magumu area of Nyandarua County and Kinale area of Kiambu County. It operates on a daily basis from 3.00am to 11.00pm, with Tuesdays and Fridays designated as special market days. The market operates from the original Soko Mjinga open-air site, as well as from the newly constructed Soko Mpya site with a shed and stalls.

However, the stalls cannot accommodate the increasing number of food traders, forcing some of them to operate from outside the market building. Apparently, the new Soko Mpya site started its active operations after the onset of COVID-19 pandemic to decongest the Soko Mjinga open-air market site. The market is a popular stop-over for travellers who stop by at the market to buy fresh food products. Some of the food products from this market are transported to Nairobi and other towns in Mombasa, Kilifi, Samburu, Garissa, Narok, Lamu and Nakuru counties. The food types sold at the market include cabbage, kale, spinach, onions, tomatoes, sweet potatoes, Irish potatoes, arrow roots, green peas, carrots, fruits (oranges, mangoes, avocado, sugarcane, bananas), broccoli, ***dhania***, ***hoho***, and dry and green maize.

Beji and Gwada Markets in Niger State

Beji and Gwada markets are rural wholesale and retail markets in Bosso Local Government Area of Niger State. Beji has been in operation for 12 years, while Gwada has been in existence for over 40 years.

Beji operates from 6.00am to 6.00pm on Mondays and Wednesdays and brings together about 3,000 traders and buyers, while Gwada operates from 7.00am to 10.00pm on Thursdays and Sundays and brings together about 100,000 traders and buyers. Beji market serves other small towns like Maikunkele and Zungeru and large urban centres and cities like Lagos, Minna, Ibadan, Ilorin and Bida. Gwada market serves large cities like Lagos, Ibadan, Kano, Onitsha, Enugu, Sokoto, Katsina, Zaria, Minna, Bida, Ilorin, Offa, Abuja, Suleja and Kafin Koro. The food products sold in both markets include vegetables, cabbage, spinach, tomatoes, onions, pepper, maize, guinea corn, millet, beans, rice, groundnuts, yam, sugarcane, fruits (banana, mangoes), okra, fish, and livestock (chicken, cattle, sheep, goats).

Potou and Lompoul Markets in Senegal

Potou and Lompoul markets serve the rural production areas of Potou and Lompoul, which specializes in the production of market gardening crops in the Niayes area. The food retailers in the Lompoul and Potou markets sell products according to the seasons and agricultural production.

The prices of agricultural produce are much cheaper in these markets which supply nearby towns of Saint-Louis and Lounga. The major food products sold in the market are carrots, cabbage, potatoes, tomatoes and salads.

Mutoko and Murewa Markets in Zimbabwe

Mutoko and Murewa markets are located at the Mutoko and Murewa growth points located 140 and 155 kilometres from Harare, respectively. Rural farmers prefer delivering their farm produce to Mbare Musika market in Harare because the surrounding rural markets buy in small quantities. Secondly, farmers do not offer deliveries and traders join hands to hire trucks, scotch carts and pushcarts to collect farm produce from nearby farms. The food products sold in the market include green vegetables, tomatoes, cucumber, pepper, carrots, peas, fruits (watermelon, oranges, banana), sugarcane, sweet potatoes, Irish potatoes, groundnuts, butternut, sunflower, and grains such as soya beans, maize, ***rapoko*** and sorghum.

Beji market in Niger State © Extracted from country reports

Gwada market in Niger State © Extracted from country reports

Soko Mjinga market in Kenya © Extracted from country reports

Food from Soko Mjinga market in Kenya © Extracted from country reports

Akono market in Cameroon © Extracted from country reports

Akono market in Cameroon © Extracted from country reports

Murewa market in Zimbabwe © Extracted from country reports

Lompoul market in Senegal © Extracted from country reports

4.3. Rural Food Retailers Sources of Food Supplies and Mode of Transportation

Most of the rural food retailers source their food supplies largely from farmers around the rural food market, from farmers elsewhere, and from other market centres and towns (**Figure 4.1**). Food sourcing from food transporters and distributors and from food wholesalers is not common among the food retailers. However, 79% of the rural food retailers in Cameroon get their food supplies from other market centres and towns, and in particular from Yaoundé city and Mbalmayo town – depicting food flows from urban markets to rural markets. Majority of the rural food retailers in Kenya (44%) get their food supplies from farmers elsewhere, such as Molo and Narok rural areas. On the other hand, majority of the rural food retailers in Niger State (47%), Senegal (55%) and Zimbabwe (58%) source their food supplies from farmers around the rural food market.

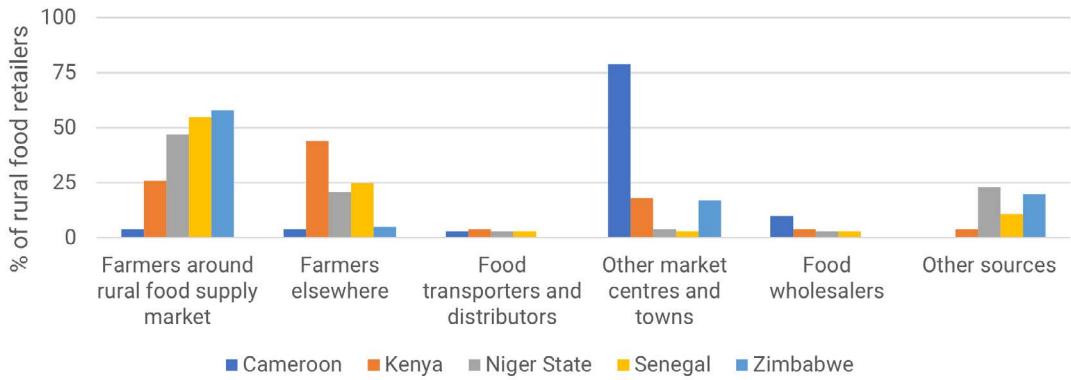


Figure 4.1. Rural food retailers' sources of food supplies

In terms of transport, rural food retailers largely depend on hired transport and public service transport to transport food supplies from various sources to their rural markets of operation (**Figure 4.2**). Hired transport (pick-up trucks) is common with majority of the rural food retailers in Kenya (64%), Senegal (43%) and Zimbabwe (57%), while use of public service transport is largely used in Cameroon (90%) and Niger State (51%).

In some cases, the rural food retailers pull their resources together to buy farm produce from farmers cheaply in bulk and share the hired transport cost to the market. Very few food retailers rely on personal vehicles and handcarts. Other means of transport are donkey-drawn carts and motorcycles. These, including handcarts, are used to transport food supplies from nearby farms and sources, as well as within the market.

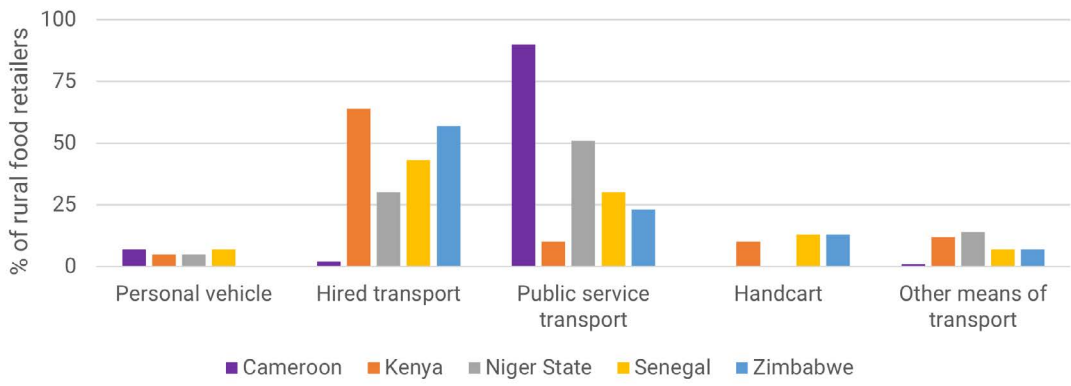


Figure 4.2. Rural food retailers' mode of transporting food supplies

4.4. Rural Food Supply Markets and COVID-19 Containment Measures Compliance

Despite initial challenges, the management of the rural food markets made efforts to enforce and comply with the COVID-19 containment measures as directed by the government protocols. There was a general initial reluctance from both traders and buyers to observe the government protocols because of ignorance of the pandemic and cost implications of some the measures. Furthermore, observing social distance in the rural markets was difficult to enforce.

> *"Sanitizers and masks were very expensive during the initial COVID-19 outbreak period. It was easy to improvise on masks. If we bought a bottle of sanitizer, we used the sanitizer sparingly so that we could display it when the police turn up. Financially, these items partially put us out of our budget"* (Zimbabwe: Transcribed Interview, 2022)

The management of the markets together with the traders' officials made sure that they provided handwashing points with liquid soap for the traders and buyers. They also organized frequent awareness and sensitization campaigns about the pandemic and the need to use face masks, wash hands and observe social distance in and around the markets.

> *"We as market leaders organized ourselves and enforced the laws put in place by the government. We made water available at strategic points in the market, people were not allowed to go into the market without facemasks, we also made sure the traders complied with physical distancing such that customers were attended to one after the other"* (Niger State: Transcribed Interview, 2022)

Market officials and traders formed local enforcement teams to make sure that traders and buyers observed physical distancing, wore masks and closed early before curfew hours. The use of face masks in the markets was largely mandatory and defaulters were taken to the police, fined or penalized, or denied market services, while genuine cases were issued with free face masks from the government or local authority. In some cases, national and local government officials were involved in enforcement.

> *"The chief's office was involved in formulation, implementation and enforcement of COVID-19 containment measures in this area and market (…) During implementation, awareness was created to sensitize the people on the need to observe containment measures (…) Food traders who failed to comply with containment measures at the market were denies access to services at the market"* (Kenya: Transcribed Interview, 2022)

The extent to which the rural food retailers observed COVID-19 containment measures in the markets is presented in **Figure 4.3**. The generally high levels of 'always' observing curfews and lockdowns is attributed to strict government enforcement. However, 69% of the rural food retailers in Cameroon 'never' observed lockdown measures. On the other hand, the proportions of rural food retailers who 'never' observed public health and hygiene measures of physical distancing, wearing masks, and washing hands was comparatively high.

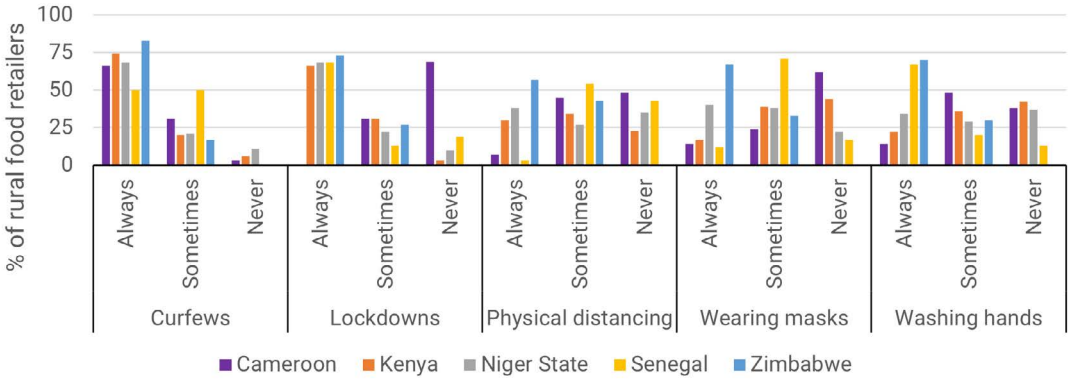


Figure 4.3. Rural food retailers' compliance to COVID-19 containment measures

For example, more than one-quarter of the food retailers in Cameroon (48%), Niger State (35%) and Senegal (43%) 'never' observed physical distancing; more than one-quarter in Cameroon (62%) and Kenya (44) 'never' wore masks; and more than one-quarter in Cameroon (38%), Kenya (42%) and Niger State (37%) 'never' practiced handwashing in their business premises. This is attributed to lack of strict enforcement and lack of personal discipline and responsibility.

4.5. Impact of COVID-19 Containment Measures on Rural Food Retailers

The rural food retailers were asked whether or not COVID-19 containment measures affected their food retailing activities. More than half of the rural food retailers in all the study countries reported that COVID-19 containment measures affected their regular business and operation hours, cost of running food retailing business, sales and customer base of food products sold, and wholesale purchase and retail prices of food products sold (**Figure 4.4**). However, very few food retailers reported an impact on the type and variety of food products they sourced and sold.

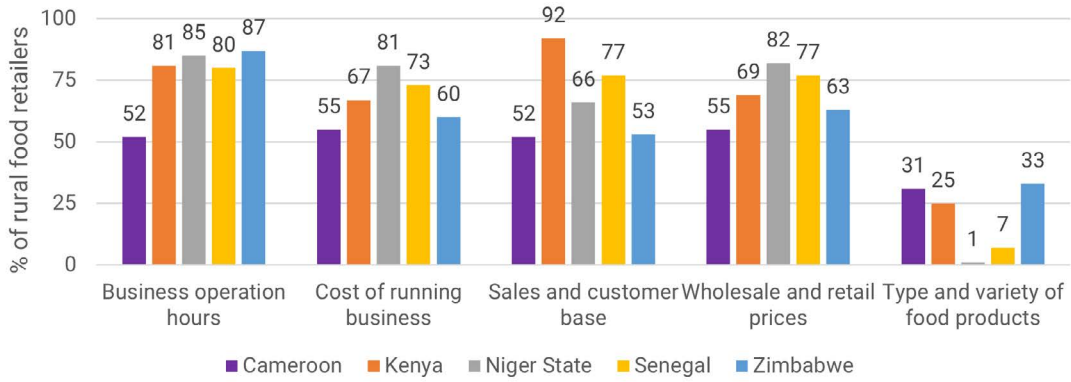


Figure 4.4. Impact of COVID-19 containment measures on rural food retailers

Impact on Business Operation Hours

Majority of the rural food retailers reported reduced business operation hours which was attributed to the various government protocols on market operation hours as well as the curfews. For example, in Senegal, Lompoul market which operated on a daily basis, was restricted to open only on Saturdays. Even then, some traders and customers stopped going to the market because of fear of contracting COVID-19.

> *Before COVID-19, the market used to be open from 8:00am to 6:00pm every market day but during COVID-19, we were given selected days and hours to go to the market which really affected our business* (Niger State: Transcribed Interview, 2022)
>
> *The Mbare Musika market traded from 6:00am to 6:00pm before the Covid-19 pandemic. However, after the national lockdown, the market operated from 8.00am to 3.00pm. This negatively affected the volume of the farm produce traded both at the wholesale and retail market* (Zimbabwe: Transcribed Interview, 2022)

Impact on Cost of Running Business

Most of the rural food retailers noted that the cost of running their food retailing businesses had increased due to high costs of transport and increased costs of procuring food supplies. The food retailers largely depend on hired transport and public service transport to transport food supplies from various sources to their rural markets of operation. COVID-19 restriction measures meant that there were scarcity of vehicles and, as such, the transport operators who met the requirements to transport goods increased transport costs.

On the other hand, scarcity of food supplies (and high demand) also made food suppliers to increase their prices.

Impact on Sales and Customer Base

Most of the food retailers noted that the daily sales and customer base of food products sold reduced because of reduced market operation hours and that most customers stayed at home as they observed restriction of movement and curfew measures.

> *"People usually come from different parts of the country to Gwada market to buy goods but during COVID-19 the numbers of customers that come to the market reduced due to restriction on inter-state travel"* (Niger State: Transcribed Interview, 2022)
>
> *"Before COVID-19, I used to sell 10 bags of cassava per market day but during COVID-19, I hardly sold 2 bags"* (Niger State: Transcribed Interview, 2022)
>
> *"Profits were too low and some dealers preferred to stay at home. You sell, you do not earn anything and it is very difficult to feed your family"* (Cameroon: Transcribed Interview, 2022)

Impact on Wholesale and Retail Prices of Food

Majority of the food retailers noted that the wholesale and retail prices of food products increased during the COVID-19 period due to market forces, low patronage of customers, decline in supply of food products from farmers, and high costs of transport.

> *"During covid-19 pandemic, the cost of transportation was very high, thus I had to increase the selling price of my goods as well so that I can recoup my capital and also get my profit" (Niger State: Transcribed Interview, 2022)*

However, those who experienced a decline in wholesale and retail prices of food products attributed it to market forces, lack of customers, low patronage of customers, and low customer purchasing power prompted by lack of income and high costs of living.

Impact on Type and Variety of Food Products

Generally, COVID-19 containment measures did not determine the type and variety of food products sourced and sold by the rural food retailers. This was attributed to the fact that most of the food retailers sell non-perishable food products and that most of the demanded food produced were locally available. However, some rural food retailers noted that the types and variety of food products from far places were slightly affected due to transportation costs and their perishability status. Some of the food retailers explained that they were forced to stock small quantities of perishable food products because of lack of adequate storage and refrigeration facilities for such products.

Impact on Rural Food Supply Markets Operations

The impact of COVID-19 containment measures on market operations was analyzed in terms of the impact on market operating hours, volume of food coming to the market, volume of food being sold in the market, volume of buyers using the market, number of food transporters and distributors supplying food to the market, food wholesale prices for traders, food retail prices for buyers, market expenditure and costs of operations, and daily market income and revenue. The results can be summarized as follows:

- A general decline in market operating hours, volume of food supply to the market, volume of food sold in the market, volume of buyers using the market, number of food transporters and distributors, and daily market income and revenue.
- A general increase in wholesale prices of food for traders and retail prices of food for buyers.
- Both increase and decline in market expenditure and cost of operations.

4.6. Rural Food Retailers Coping Strategies and Recovery from Impacts of COVID-19

Coping Strategies

The following strategies were adopted by the rural food retailers to cope with the negative impacts of COVID-19 on their food retailing activities.

- Storage of non-perishable grains in the market to wait for markets to resume normal operations.
- Increasing the selling price of food products due to scarcity and higher costs of food supplies.
- Purchase of smaller quantities of food supplies to avoid loss.
- Venturing in alternative sources of income and livelihoods.
- Selling food directly to consumers and households in the residential neighbourhoods.
- Sourcing and purchasing food supplies directly from the farmers.
- Lowering the food retail prices in order to attract customers and clear stock.
- Taking loans to sustain the affected food retailing business.
- Temporary closing of food retailing business.
- Selling of food through mobile telephone WhatsApp online interface.

Extent of Recovery from Impacts of COVID-19

The sampled rural food retailers were asked the extent to which their food retail businesses had recovered following the relaxation of the COVID-19 containment measures. **Figure 4.5** shows that at the time of the interviews more than half of the rural food retailers had recovered to a large and moderate extent in all the countries. However, the proportions of those who had recovered to large extent is relatively low. Another smaller proportion had recovered to a small extent. This is an indication that most of the rural food retailers were on the road to recovery, despite the fact only a few had recovered to a large extent. Notably, 14% of rural food retailers in Cameroon indicated that they had not recovered from the impact of COVID-19 containment measures.

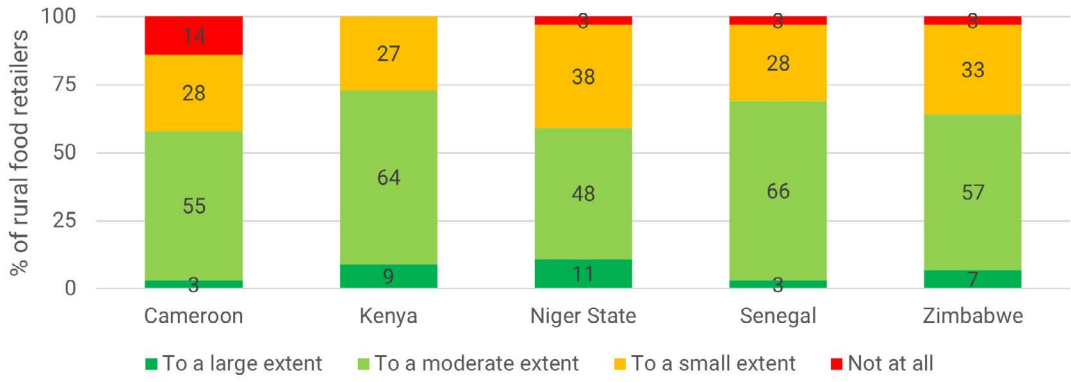


Figure 4.5. Rural food retailers' extent of recovery from COVID-19 impacts

Suggestions for Government Interventions

The following government interventions were suggested to reduce the negative impacts of COVID-19 containment measures on rural food retailers.

- Opening food markets for a longer period of time during the pandemic.
- Provision of financial assistance and support to cushion food retailers.
- Provision of security in the market to facilitate storage of non-perishables food stock.
- Lowering food supply prices and taxes to cushion food retailers.

5

Covid-19 and Urban Food Supply and Distribution

Urban market concept during UN-Habitat Assembly © UN-Habitat

5.1. Characteristics of the Sampled Urban Food Retailers and Informal Food Vendors

Table 6 presents a summary of selected characteristics of the sampled urban food retailers and informal food vendors in Yaoundé (Cameroon), Nairobi (Kenya), Minna (Niger State), Dakar (Senegal) and Harare (Zimbabwe), respectively. Urban food retailing is largely male dominated except in Yaoundé, while informal food vending tends to be female dominated, except in Nairobi and Harare. Majority of the food retailers and informal food vendors have attained secondary education and above, except in Dakar where the majority have no formal education. In both categories of retailers, majority of them are married. Lastly, majority of the food retailers are migrants to the cities of Yaoundé, Nairobi, Dakar and Harare, except those in Minna. On the other hand, majority of the informal food vendors are migrants to Yaoundé, Nairobi and Harare, except those in Dakar. Minna has an equal share of both food retailers and informal food vendors who are migrants and those born in the city.

Table 6. Characteristics of urban food retailers (FR) and informal food vendors (IFV)

Characteristics	Percentage (%) of sampled food retailers and food vendors									
	Yaoundé		Nairobi		Minna		Dakar		Harare	
	FR	IFV	FR	IFV	FR	IFV	FR	IFV	FR	IFV
Gender										
Male	24	19	58	58	83	47	70	47	61	57
Female	76	81	42	42	17	53	30	53	39	41
Education Level										
None	14	2	0	11	33	13	70	44	3	0
Primary	38	38	19	25	33	19	10	40	10	21
Secondary and above	48	60	65	63	33	68	20	16	87	79
Marital Status										
Single	35	38	19	19	0	12	13	23	10	24
Married	52	55	72	72	87	81	67	60	84	63
Divorced/ widowed	13	7	9	9	13	7	20	17	6	13
If born in the city										
Yes	38	27	14	17	60	50	30	77	19	28
No	62	73	86	83	40	50	70	23	83	72

Food business is the major source of income for most of the urban food retailers and informal food vendors. The main locational factors for the urban informal vendors include residential neighbourhoods and shopping centres with a high demand for such food supplies, availability of customers, presence of business opportunities and high profit margins, availability of space, places with low business competition, safe and secure streets with a high volume of human traffic, and proximity to vendors' place of residence.

5.2. Characteristics of the Selected Urban Food Supply Markets

Mvog-mbi Market in Yaoundé

Mvog-Mbi market is an open-air market located in southern part of Cameroon along Yaoundé-Akono road. The market operates on a daily basis from 5.00am to 8.00pm. The market, which has been in operation since 2009, is divided into two sections managed by the natives and the municipality, respectively. The section managed by the municipality is compartmentalized according to the types of products and each trader is entitled to a trading space of about one square metres. The food products sold in the market include fruits (green melon, pineapple, mangoes, watermelon, avocado, papaya, banana), vegetables (tomatoes, pepper, cabbage, onions, garlic), tubers (plantain, yam), potatoes, maize, beans, rice, palm oil and fish. On the other hand, the informal food vendors in Yaoundé sell different food products such as tomatoes, peppers, onions, eggplant, avocado, pineapple, watermelon, oranges, mandarins, onions, garlic, peanuts, cassava, plantain and sweet bananas.

Wakulima Market in Nairobi

Wakulima market, translated as ***farmers' market***, is the oldest wholesale and retail food market in Nairobi, having been built close to the Central Business District for ease of accessibility from all parts of the city and other parts of the country. It is also located close to the oldest and largest upcountry bus terminus. The market is complemented by the adjacent Marikiti and Muthurwa food markets. The market operates on a daily basis from 4.00am to 8.00pm and is managed by the Nairobi City County Government, as well as by a market committee of traders. The market sells a variety of cereals, vegetables, fruits and other farm products such as tomatoes, potatoes, onions, carrots, kale, spinach, cabbage, African indigenous vegetables, oranges, watermelon, bananas, avocado, lemon, passion, pawpaw, mandarin, tangerine, pineapples, sugarcane, green maize, peas, arrowroots, cauliflower, coriander. These food products come from various agricultural regions of Kenya such as Kisii, Thika, Nyeri, Embu, Meru, Karatina, Kirinyaga, Nyandarua, Molo, Kajiado, Narok, Kilgoris, Makueni and Machakos. Other food supplies come from Tanzania and Uganda. On the other hand, the informal food vendors in Nairobi sell a variety of food products including vegetables, ginger, garlic, coriander, kale, cabbage, tomatoes, spinach, apples, watermelon, thorn melon, bananas, oranges, pineapple, arrow roots, potatoes, green peas, pumpkin, eggplant, green maize, avocado, cucumber, lentils, maize, rice, beans, cow peas and fish.

Kure Market in Minna

Kure is a wholesale and retail market that been operational for 19 years. The market is headed by a supervisor and market leaders in-charge of different food commodities. Kure market operates once a week, on Saturdays from 7.00am to 6.00pm, and brings together about 5,000 traders and buyers. Besides Minna, the market also serves other cities like Lagos, Ibadan, Kaduna and Bida. The food products sold in the market include maize, guinea corn, millet, beans, rice, yam, tomatoes, pepper, sugarcane, banana, mangoes, guava and fish. On the other hand, the informal food vendors in Minna sell yam, maize, millet, guinea corn, pepper, onion, yam flour, soya beans, watermelon, apple, cassava flakes, vegetables, spinach, cucumber, lettuces, okra and beans.

Syndicat Market in Dakar

Syndicat market, located in Pikine Nord in the suburbs of Dakar city, is the largest fruit market in the city. However, with evolution of the city, the existence of Syndicat market has been faced with hostility from the local population because of problems associated with parking of food supply trucks as well as waste management and pollution challenges associated with the market. As such, muted or open conflicts punctuate the cohabitation between the traders in Syndicat market and the local residents. However, the State has announced several projects for modernization of Syndicat market to enable it perform its food supply and distribution functions efficiently.

Mbare Musika Market in Harare

Mbare Musika market, established in 1960s, is the oldest and largest fruits and vegetables market in Harare and the country. In addition, the market serves as an international and national wholesale and retail food market. The original market structure has a shed and stalls. However, after the expansion of the market, the fruits and vegetables traders were moved to an open-air space. The market is located in Mbare, one of the oldest high-density-low-income residential neighbourhoods in Harare, about 5.5 kilometres from the Central Business District. The market operates from 6.00am to 6.00pm every day and serves an average of 6,000 people in a day. The wholesale market sells bulk food products from farmers, while the retail market sells a diversity of food products such as potatoes, watermelon, garlic, carrots, green pepper, green peas, butternut, garlic, apples, cucumber, onions, beans, peas, popcorn, dried coconut, dried nuts, sorghum and ginger. The main towns that source fruits and vegetables from the market include Bulawayo, Masvingo and Chinhoyi. In addition, the market serves food traders from Zambia and sells fruits to Plumtree that are further exported to Botswana. The market also sells apples and onions from South Africa. On the other hand, the informal food vendors in Harare sell a variety of vegetables and fruits such as tomatoes, cucumber, apples, potatoes, lemon, onions, watermelon, banana, cabbage, carrots, groundnuts, beans, grapes, butternuts, eggs, ginger, garlic, pepper, okra, oranges and avocado.

Wakulima market in Nairobi © Extracted from country reports

Informal food vendors in Minna © Extracted from country reports

Kure market in Minna © Extracted from country reports

Informal food vendors in Dakar © Extracted from country reports

Mvog-Mbi market in Yaoundé © Extracted from country reports

Informal food vendors in Yaoundé © Extracted from country reports

5.3. Urban Food Retailers and Informal Food Vendors Sources of Food Supplies and Mode of Transportation

Urban food retailers and informal food vendors in Yaoundé, Nairobi, Minna, Dakar and Harare get their food supplies from various sources (**Figure 5.1**). Generally, majority of the food retailers in Minna (57%) and in Harare (63%) depend on farmers around the city. Majority of Nairobi's food retailers (46%) depend on farmers elsewhere, while those in Yaoundé (33%) depend more on food transporters and distributors. On the other hand, majority of the informal food vendors in Yaoundé (80%), Nairobi (45%), Minna (75%) and Dakar (44%) source their food supplies from other markets around the cities, except for those in Harare (45%) who depend more on farmers around the city. Mvog-Mbi market in Yaoundé, Wakulima and Gikomba markets in Nairobi, Kure market in Minna, Syndicat market in Dakar, and Mbare Musika market in Harare are major sources of food supplies for the informal food vendors.

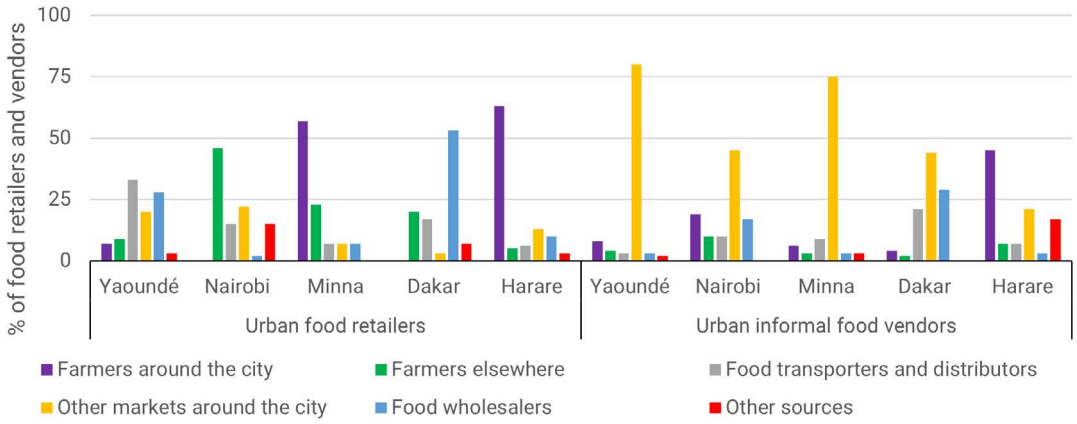


Figure 5.1. Urban food retailers and informal food vendors sources of food supplies

In terms of mode of transporting their food supplies, the urban food retailers tend to rely on hired transport, while the informal food vendors tend to rely on public service transport (**Figure 5.2**). Majority of the urban food retailers in Nairobi (61%), Minna (50%), Dakar (53%) and Harare (69%) use hired transport. However, most of the food retailers in Yaoundé prefer to use public service transport. On the other hand, majority of the informal food vendors in Yaoundé (53%), Nairobi (52%) and Dakar (40%) use public service vehicles. However, those in Minna (56%) and Harare (48%) prefer hired transport and handcarts, respectively.

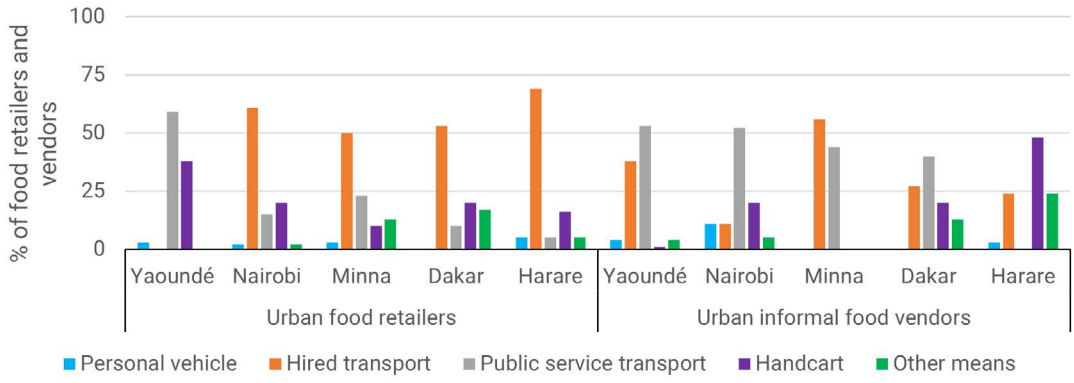


Figure 5.2. Urban food retailers and informal food vendors mode of transporting food supplies

5.4. Urban Food Supply Markets and COVID-19 Containment Measures Compliance

COVID-19 prevention measures were enforced in the urban markets and supermarkets as recommended by the various government protocols. Lockdowns and curfews were easily enforced because they were national in nature. However, there were challenges with ensuring that traders and buyers wore face masks properly, washed their hands at designated points, and kept the required physical distance while shopping. The markets management put in place handwashing points with liquid soap for traders and buyers. In some cases, lack of (running) water at some of the markets was a challenge to enforcing handwashing measures. Some of the urban food retailers and informal food vendors made personal efforts to provide handwashing facilities for their customers but the initial costs involved were a limitation to most of them. The supermarkets enforced similar COVID-19 prevention measures including placing handwashing stations and sanitizers at the entrance into the supermarket, closing early to allow employees get home before curfew time, allowing a few customers in the supermarket at a time to avoid crowding and to enforce the recommended physical distancing rule, enforcing a "No Mask No Entry" requirement, placing a security officer at the entrance of the supermarket to make sure customers wore face masks and used the provided hand sanitizer, and encouraging staff to take COVID-19 tests and vaccinations.

> *"The management put stickers on the floor that were at least one meter apart for managing customer queues (…) An internal public address system was used to periodically remind staff and customers on the need to observe physical distancing and other Covid-19 protocols (…) An internal compliance team was formed to ensure compliance (…) The management also obtained permits for essential workers so that the police could not arrest them when they did not get home before onset of curfew (…) Besides encouraging our customers to pay via Mpesa, we also revamped our e-commerce platform. Naivas e-commerce made more sales for us as we delivered goods to those who ordered through the platform* (Kenya: Transcribed Interview, 2022)

The extent to which the urban food retailers and informal food vendors observed COVID-19 containment measures in the markets and places of operations, respectively, is presented in **Figures 5.3** and **5.4**. Due to strict enforcement by the government, majority of the food retailers and informal food vendors indicated that they 'always' observed curfews and lockdowns. There are also relatively high levels of 'always' observing physical distancing, wearing masks and washing hands for the food retailers and informal food vendors.

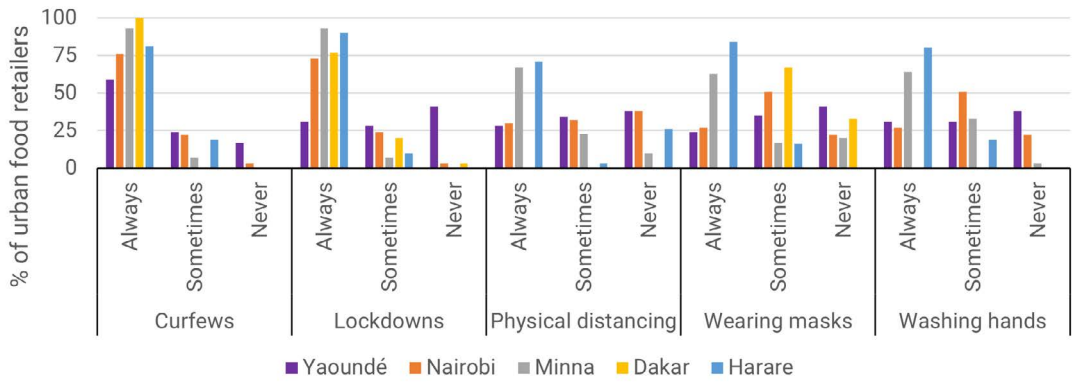


Figure 5.3. Urban food retailers' compliance to COVID-19 containment measures

Even then, there are pockets of those who 'never' observed the COVID-19 containment measures. For example, there are a number of food retailers and informal food vendors in Yaoundé who never observed curfews and lockdowns. Those who 'never' observed physical distancing, wearing masks, and washing hands measures are scattered variously in all the cities. This is attributed to lack of strict enforcement and lack of personal discipline and responsibility.

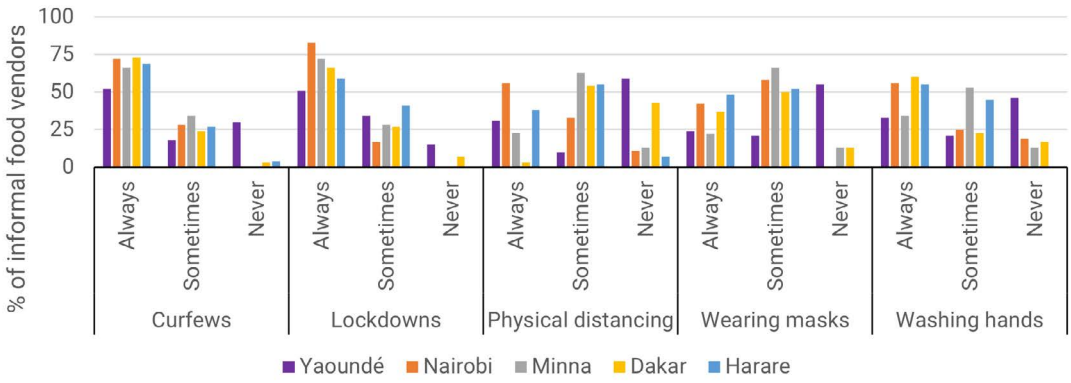


Figure 5.4. Urban informal food vendors compliance to COVID-19 containment measures

5.5. Impact of COVID-19 Containment Measures on Urban Food Retailing Activities

The urban food retailers and informal food vendors were asked whether or not COVID-19 containment measures affected their food retailing and vending activities, respectively. More than half of the urban food retailers and informal food vendors in all the cities reported that COVID-19 containment measures affected their regular business and operation hours, cost of running food retailing business, sales and customer base of food products sold, and wholesale purchase and retail prices of food products sold (**Figure 5.5**). However, less than half of the urban food retailers in Nairobi reported an impact on their sales and customer base, as well as wholesale and retail prices of their food products. In addition, there was relatively less impact, in all the cities, on the type and variety of food products sourced and sold.

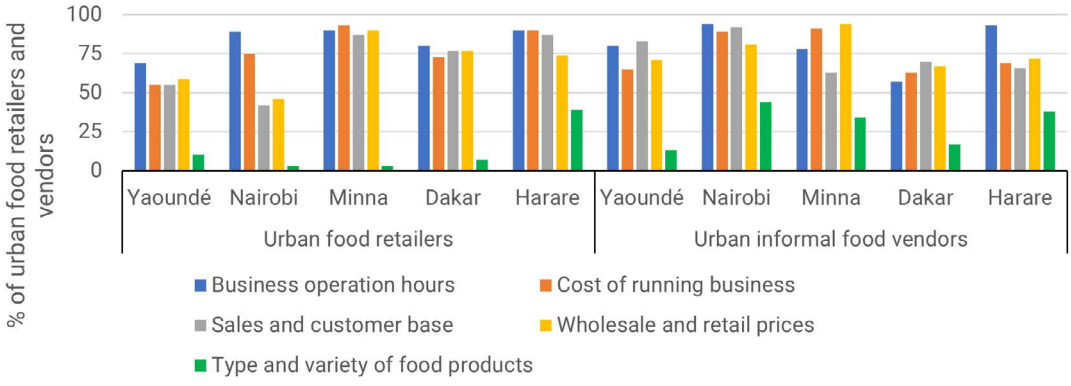


Figure 5.5. Impact of COVID-19 containment measures on urban food retailers and informal food vendors

Impact on Business Operation Hours

The opening and closing hours of urban food markets were regulated and consequently reduced food retailers' regular business operation hours according to the national guidelines and curfew hours. All markets were, therefore, expected to work within the scheduled market operation hours as well as adhering to the curfew hours set by the governments.

> *"Under the supervision of the market authorities and the strict control of the police, the traders are called upon to respect the scheduled opening hours of 6am and closing hours of 5pm. As such, this new opening and closing schedule has affected the normal operating hours and activities of this Syndicat market"* (Senegal: Transcribed Interview, 2022)
>
> *"We had to respect the curfew hours by closing at noon, which kept us from selling our goods. In addition, suppliers no longer came regularly"* (Cameroon: Transcribed Interview, 2022)

Reduction in market operating hours resulted into subsequent reduction of customers, low sales of stock, loss and wastage of perishable food products, and increase in food prices because of low supplies and high demand. The informal food vendors were particularly affected by the curfew, and to some extent the lockdown measures, which affected their vending activities as well as their hours of operation. As such, some of the food vendors tried to sell their food products during curfew hours but ran into trouble with the police, who often destroyed their goods and subjected them to fines and bribes.

> *"Closing at 5pm meant that I lost some income to take care of my family and fulfilling all my financial obligations. It is from 5pm that I sold more to customers returning from work. As such, I took the risk of selling my products after 5pm even if my goods would be seized by the police"* (Senegal: Transcribed Interview, 2022)

Impact on Cost of Running Business

Most of the urban food retailers and vendors reported an increase in the cost of business operations as a result of increased transportation costs, increased cost of procuring food supplies for sale, scarcity of farm produce, and reduced number of customers. The food retailers tend to rely on hired transport, while the informal food vendors rely more on public service transport.

> *"Before COVID 19, I spent N3000 on transporting goods from the market to my shop but during COVID-19, the cost of transportation increased to N4500"* (Niger State: Transcribed Interview, 2022)
>
> *"Cabbages that were sold at a wholesale for US$1 for 4 had increased to US$1 for 2 during Covid-19 due to unavailability of a variety of goods"* (Zimbabwe: Transcribed Interview, 2022)

Some food retailers and vendors attributed their increased costs of business to additional costs in buying face masks and providing handwashing points and soap for their customers, while others, especially those in Harare, noted that the bribes they paid to the police during regular enforcements raids also contributed to an increase on their business costs.

Impact on Sales and Customer Base

Majority of the urban food retailers and vendors experienced a reduction on their sales and customer base.

However, some food retailers and vendors reported that they increased their sales as a result of sporadic bulk buying by consumers during the curfew and lockdown periods. The general reduction on sales and customer base of food products sold was attributed to reduced market operation hours, low patronage of markets because of customers' fear of contracting COVID-19 in crowded places, low purchasing power of customers who suffered COVID-19 related economic challenges, reduced food supplies because of limited transport, and increased food prices.

> *"We hardly sold much because everyone was afraid to contract the virus in crowded places, so some costumers did not even come to buy"* (Niger State: Transcribed Interview, 2022)
>
> *"We could no longer sell our food products in the market because of the scarcity of customers who remained confined at their homes due to fear of contamination"* (Cameroon: Transcribed Interview, 2022)

Impact on Wholesale and Retail Prices of Food

Most of the urban food retailers and vendors concurred that there was a general increase in wholesale and retail prices of the food supplies they sourced and sold. The general increase in food prices was largely attributed to market forces linked to a decline in food supply and a high demand of the limited food supplies. Increase in food prices was also attributed to high costs of transporting food supplies and reduced number of customers. In Senegal, the increase in food prices was also attributed to increases in taxes at the border posts where some of the food products pass through from other regions.

> *"Price of commodities increased at the market and to keep the profit margin, I had to increase the retail price as well. For example, the wholesale price of a bag of maize at the market was N20,000 before COVID, but during COVID-19 the price increased to N25,000. Now the retail selling price which was previously N21,500 had to increase to N27,000 so as to keep my profit"* (Niger State: Transcribed Interview, 2022)

However, some food retailers and vendors experienced a decline in wholesale and retail prices, which they attributed to reduced number of customers and the need to clear stock and avoid losses. Closing the market early forced some the food retailers to lower prices in order to sell more. Even then, most of the food vendors in Harare reported that prices of food products they sold did not change despite complaining about increase in food transportation costs.

Impact on Type and Variety of Food Products

Most of the urban food retailers and vendors reported that COVID-19 did not determine the type and variety of food products they sourced and sold. However, some food retailers reduced the variety of food products they sourced and sold because of costs, limited supply, lack of customers, and to avoid a lot of unsold food items. Even then, some food retailers and vendors explained that there was a high demand for food products that were deemed to treat or fight against COVID-19. These were garlic, lemon, cloves, and in Zimbabwe, ***zumbani*** and ***tsangamidzi*** (in Shona).

Impact on Urban Food Supply Markets Operations

The impact of COVID-19 containment measures on urban food markets operations was analyzed in terms of their impact on market operating hours, volume of food coming to the market, volume of food being sold in the market, volume of buyers using the market, number of food transporters and distributors supplying food to the market, food wholesale prices for traders, food retail prices for buyers, market expenditure and costs of operations, and daily market income and revenue. The results can be summarized as follows:

- A general decline in market operating hours, volume of food supply to the market, volume of food sold in the market, volume of buyers using the market, and number of food transporters and distributors.
- A general increase in wholesale prices of food for traders and retail prices of food for buyers.
- Both increase and decline in market expenditure and cost of operations, as well in daily market income and revenue.

> *"Before COVID-19 pandemic, the cost of operating the market was CFA10,000 per day and the overall income was between CFA50,000 and 100,000 per day. During COVID-19, the operation costs increased to CFA15,000 per day, while the income increased to between CFA50,000 and 200,000 per day* (Cameroon: Transcribed Interview, 2022)

Impact on Supermarket Operations

The impact of COVID-19 containment measures on supermarket operations was analyzed in terms of impact on operation hours, number of daily customers, supply of fresh farm food products, supply prices of fresh farm food products, retail prices of fresh farm food products, general daily expenditure and costs of operation, and general daily sales.

The results can be summarized as follows:

- A general decline in supermarket operating hours, number of customers, daily sales, and daily expenditure and cost of operation.
- An inconsistent supply of fresh farm produce.
- No impact on fresh food supplies prices.
- A marginal increase in retail prices of fresh farm produce.

However, the sampled supermarkets in Yaoundé continued with normal operations during COVID-19 period but witnessed increased number of customers and sales due to the rush to buy and store food products just in case the situation got worse. Customers purchased as much food supply as possible for fear of food running out if the pandemic became more widespread and markets were forced to close permanently.

Box 5.1: An overview of the study supermarkets

In Minna, TOFA supermarket is a local-based supermarket that has been in operation for 7 years and operates for 12 hours from 9.00am to 9.00pm on a daily basis with a daily patronage of about 100 customers. In Nairobi, Naivas Mountain View Mall supermarket is one of the leading supermarket chains in Kenya. Naivas Mountain View Mall has been in operation since 2013 and opens for business from 8.00am to 9.30pm with a daily patronage of about 3,500 customers. Using different suppliers, the supermarket branch sources 40% of its fresh produce such as kale, spinach and cabbage from farmers in Kenya, 30% from suppliers from Wakulima market, 15% from other markets in Nairobi region, and 15% from contracted farmers in Kenya. However, oranges, grapes and apples sold at the supermarket are sourced from outside Kenya. In Yaoundé, Casino and Carrefour supermarkets have been operational since 1995 and 2017, respectively. The supermarkets operate daily from 7.00am to 8.00pm. Casino supermarket has a daily customer base of 5,000 people, while Carrefour attracts 3,000 customers in a day. The supermarkets sell a variety of local fresh food products such as meat (beef, lamb, pork, chicken), fish (sea bream, bass, carp, prawns), fruits (green melon, pomelo, pineapples, mangoes, watermelon, avocado, papaya), vegetables (tomatoes, pepper, cabbage, onions, garlic), and tubers (plantain, yam). The supermarkets have partnerships with local producers who supply them with fresh food products two or three times in a week.

5.6. Urban Food Retailers' and Informal Food Vendors Coping Strategies and Recovery from Impacts of COVID-19

Coping Strategies

The following strategies were adopted by the urban food retailers and informal food vendors to mitigate against the negative impacts of COVID-19 on their food retailing activities.

- Selling of food directly to households in the residential neighbourhoods.
- Selling food on credit to attract more customers.
- Purchase of food supplies directly from the farmers.
- Negotiating with suppliers to supply food products on credit.
- Reducing stock and supplies to avoid loss.
- Increasing food retail prices to compensate for high business costs.
- Making sure that the food selling environment is clean in order to attract more customers.
- Temporary closure of business activities.
- Taking loans from micro finance institutions.
- Engaging in other income-generating activities.
- Bribing enforcement police to source for food products and operate during curfew hours, especially in Harare.

Extent of Recovery from Impacts of COVID-19

The sampled urban food retailers were asked the extent to which their food retail businesses had recovered following the relaxation of the COVID-19 containment measures. The road to recovery seems gradual for food retailers but relatively impressive for informal food vendors (**Figure 5.6**). Generally, a large proportion of both food retailers and food vendors had recovered either to a 'moderate extent' or to a 'small extent'. Notably, 73% of urban food retailers in Nairobi reported that they had recovered to a 'large extent'. On the contrary, 42% and 27% of food retailers in Yaoundé and Dakar, respectively, had not recovered at all. A significant proportion of the informal food vendors in Nairobi (44%), Dakar (30%) and Harare (21%) reported that they had recovered to a 'large extent'. On the contrary, another 30% of the informal food vendors in Dakar reported that they had not recovered at all.

> *"Now that the whole economy has been affected by the pandemic, we have not yet felt the positive effects of the suspension of these containment measures"* (Senegal: Transcribed Interview, 2022)

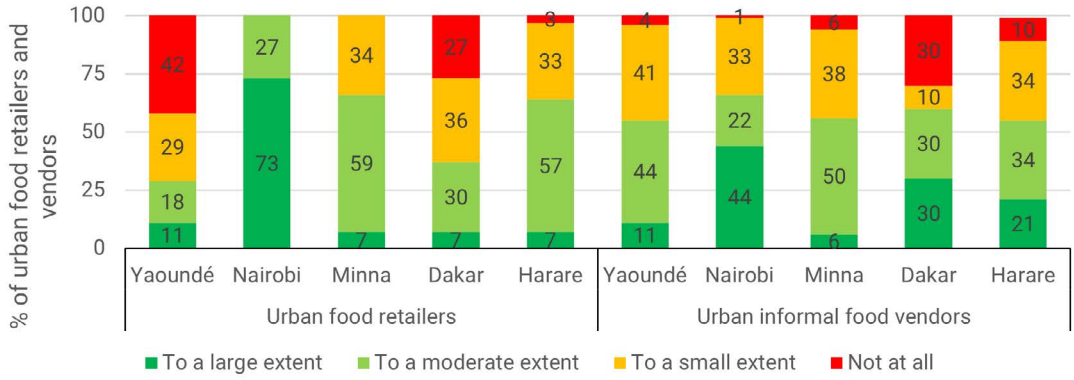


Figure 5.6. Urban food retailers and informal food vendors extent of recovery from COVID-19 impacts

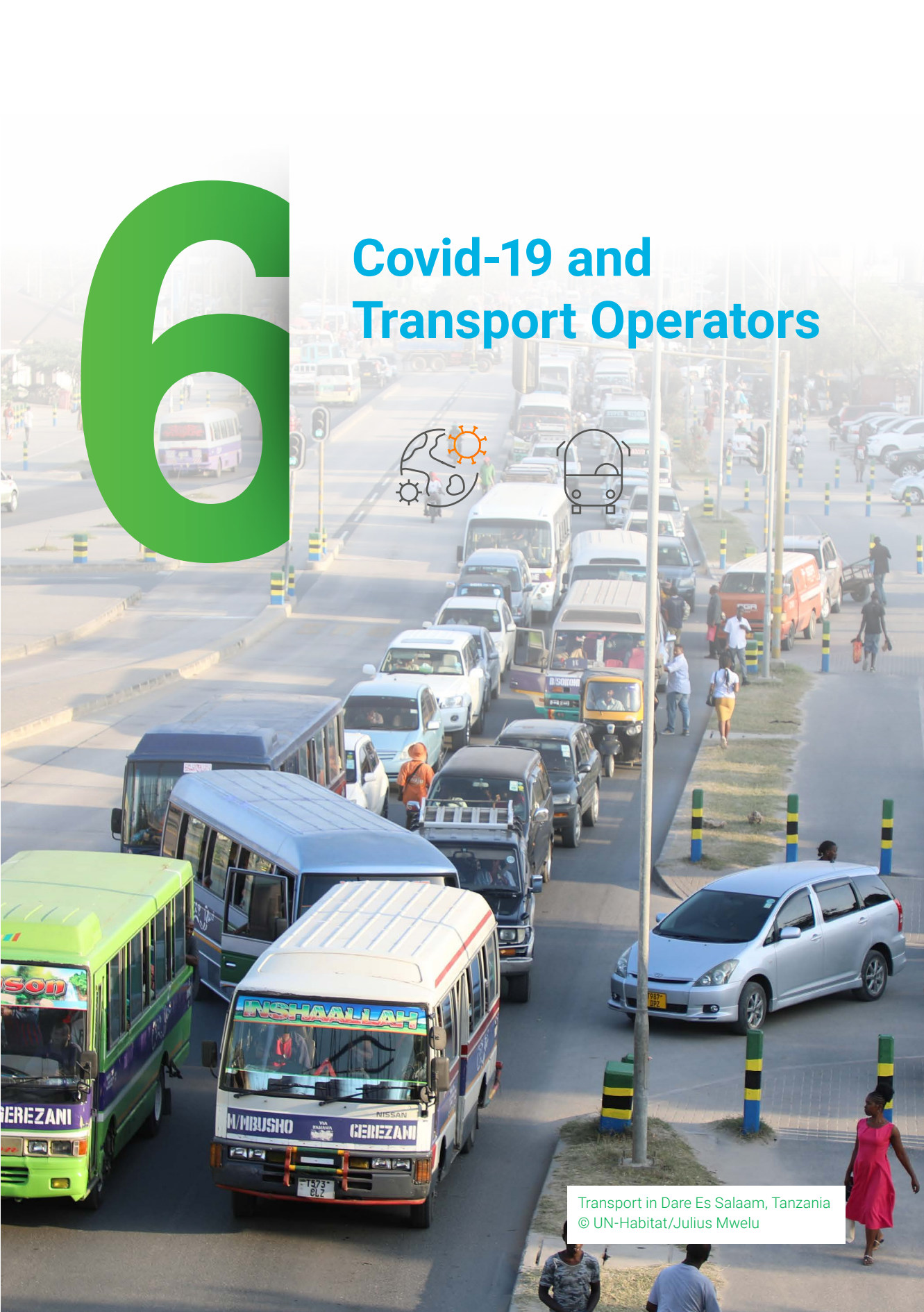
Suggestions for Government Interventions

The following government interventions were suggested to reduce the negative impacts of COVID-19 containment measures on urban food retailers and informal food vendors.

- Facilitating farmers and food suppliers to supply and deliver food to markets.
- Allowing food markets and food vendors to operate for longer hours, especially in the residential neighbourhoods.
- Provision of financial assistance and loans to small-scale traders to cushion them from the negative impacts of COVID-19.
- Provision of free face masks, sanitizers and handwashing points to food retailers and vendors.
- Subsidizing prices of farm inputs and food prices.
- Lowering taxes, price of fuel, and transport costs.

6

Covid-19 and Transport Operators



Transport in Dare Es Salaam, Tanzania
© UN-Habitat/Julius Mwelu

6.1. Characteristics of the Selected Food Transporters

In Cameroon, food transporters operating from Akono rural market collect their farm products directly from the farmers or from the market. They transport these farm products to Mvog-mbi market in Yaoundé once or two times in a week. Once in Mvog-mbi market, the farm products are purchased directly by traders or delivered to supermarkets, hotels and restaurants with prior orders. In Kenya, food transporters operating in Soko Mjinga rural market transport farm produce from the surrounding farms to the market. They also transport farm produce Nairobi's Wakulima market and other markets in Mombasa, Kilifi, Kisumu and Malindi. On the other hand, food transporters operating in Wakulima market source food products in bulk from various food producing areas of Kenya such as Kisii, Thika, Nyeri, Embu, Meru, Karatina, Kirinyaga, Nyandarua, Molo, Kajiado, Narok, Kilgoris, Makueni and Machakos. Some of them source food supplies from Tanzania and Uganda. The farm produce is sold directly to food retailers in the market or are purchased by middlemen who later sell the same to retailers in other markets, supermarkets, hotels and grocers.

In Niger State, food transporters operating in Beji, Gwada and Kure deal directly with the traders in the markets where they source and sell their products. They transport farm products sourced from the rural areas, as well as from other rural markets. Besides Beji, Gwada and Kure markets, the food transporters operate in other markets such as Paiko, Zungeru, Mariga, and Rijau. In Senegal, food transporters offer diverse services that vary according to zones and distance travelled. For example, transportation of food in short distances are dominated by handcarts, horse-drawn carriages and dilapidated vehicles. On the other hand, long distance food transporters use vans and trucks of varying sizes. In Zimbabwe, food transporters operating in Mutoko and Murewa rural markets source their farm products directly from the farmers for delivery at both rural and urban markets. In some cases, they get delivery orders from food wholesalers and retailers. While they predominantly serve farmers from Mutoko and Murewa, they also operate in other districts such as Dande, Chiredzi, Mudzi and Goromonzi, when they get orders. They supply farm products to retail markets such as Mbare Musika, Machipisa (in Harare) and other urban centres such as Ruwa, Chitungwiza and Bulawayo. They also deliver, on order or contracts, to supermarkets and to boarding schools.

Food transporters in Niger State © Extracted from country reports

Food transporter in Senegal © Extracted from country reports

Food transporter in Senegal © Extracted from country reports

Food transporters in Kenya © Extracted from country reports

6.2. Characteristics of the Selected Public Transport Operators

In Yaoundé, the public transport operators are organized under the umbrella of Association des transporters de Mvog-Atangana Mballa (ASTRAM) and Association VOLANT D'OR. ASTRAM operators, which has been in existence for the last nine years, has about 30 vehicles and operates between 7.30am and 6.00pm. They use 19-seater and 6-seater vehicles along Yaoundé-Ngoumou-Akono route. On the other hand, Association VOLANT D'OR has been in existence for the last 15 years, has about 50 vehicles and operates between 5.30am and 9.00pm using 6, 10, 14, 18 and 22-seater vehicles. In Nairobi, Satima Savings and Credit Cooperative Organization (Satima SACCO) and Tulaga Travelers Transport Company operate along Nairobi-Soko Mjinga-Njabini route. Satima SACCO operates 200 14-seater vehicles day and night. On the other hand, Tulaga has a fleet of 18-seater buses, which operate daily from 4.00am to 10.00 pm. In Minna, the public transport operators operate along Minna-Suleja route, Minna-Kagara route, and Minna-Bidda route. They use 6, 9 and 18-seater vehicles. Operators in Minna-Suleja route operate on a 24-hour basis, while the other two operate during the day from 6.00am to 7.00pm. In Harare, public transport operators use high-capacity conventional buses, combis and mini-buses. They operate along Mutoko-Harare, Murewa-Harare or Harare-Nyamapanda routes from as early as 3.00am to as late as 10.00pm.

Mobil roundabout in Minna © Aliyu Goro

Tulaga Travellers Company in Kenya © Peter Durand/Flickr

6.3. Food and Public Transport Operators and COVID-19 Containment Measures

During COVID-19 period, food transporters and public transport operators adhered to the laid down government protocols and containment measures. Food transporters and public transport operators were not allowed to operate during curfews hours and in and out of the designated lockdown areas. For them to operate, they were required to obtain special permits and clearances, adhere to the laid down COVID-19 containment measures, and in some cases, show proof of COVID-19 negative tests and vaccinations at the enforcement roadblocks and police checks. In Zimbabwe, the police at enforcement roadblocks or checkpoints would deliberately refuse to recognize the food transporters' movement permits, leading to delays, induced corruption and payment of bribes.

The delays in travel time and delivery led to losses, especially for perishable food commodities like green vegetables and tomatoes.

Public transport operators reduced the carrying capacity of their vehicles as per the government protocols, provided hand sanitizers to passengers before boarding, and ensured that no passenger boarded a public service vehicle without a face mask. In some cases, public transport operators provided face masks to passengers who did not have one. The major challenges food transporters and public transport operators faced were high costs of hand sanitizers, and reluctance of passengers to wear face masks throughout the trip.

6.4. Impact of COVID-19 Containment Measures on Food and Public Transport Operators

Impact of COVID-19 on Food Transporters

The impact of COVID-19 containment measures on food transporters was analyzed in terms of impact on operation hours, number of trips in a week, volume of food products transported, number of police/health checks, required transport permits, cost of operations and expenditure, and income, revenue and profits.

The results are summarized as follows:

- There were normal operations but with a decline of operation hours experienced in Niger State and Senegal. Generally, food transporters were facilitated and allowed to operate with special permits.
- A general decline in the number of trips per week, volume of food products transported, as well as income revenue and profits. This was attributed to reduced supply by farmers as well as reduced demand by food retailers. However, food transporters in Cameroon experienced an increase in the number of trips per week due to high demand for food.
- A general increase in the number of police/heath checks, required number of transport permits, and cost of operations and expenditure. However, food transporters in Niger State and Senegal experienced a decline in the cost of operations and expenditure.

Impact of COVID-19 on Public Transport Operators

The impact of COVID-19 containment measures on public transport operators was analyzed in terms of impact on average (daily) operation costs per vehicle, average (daily) revenue per vehicle, number of passengers carried per trip, number of trips made per day, number of vehicles operating per day, number of staff or employees in full-time operation, and passenger fares.

The results are summarized as follows:

- A general increase in daily operation costs per vehicle and passenger fares
- A general decline in daily revenue per vehicle, number of passengers per trip, number of trips per day, number of vehicles per day, and number of full-time staff. However, public transport operators in Cameroon experienced an increase in the number of trips per day.

Suggestions for Government Interventions

The following government interventions were suggested to reduce the negative impacts of COVID-19 containment measures on food transporters and public transport operators.

- Total lockdown was not the best measure and should have been reconsidered, especially for food transporters.
- Controlling the prices of fuel during such pandemic periods.
- Reducing the number of permits required to travel as well as the number of police checkpoints on the road.

7

Covid-19 and Urban Households

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7.1. Characteristics of the Respondents

Table 7 presents a summary of selected characteristics of the urban households' respondents. There were higher proportions of female respondents in Yaoundé, Nairobi and Dakar than in Minna and Harare. The large majority of them had attained secondary education and above, except in Dakar. Furthermore, majority of them were married. In terms of employment status, most of the respondents were either self-employed or in salary employment, except in Harare where a relatively large proportion were unemployed or were students.

Table 7. Characteristics of respondents

Characteristics	Percentage (%) of respondents				
	Yaoundé	Nairobi	Minna	Dakar	Harare
Gender					
Male	44	44	81	30	62
Female	56	56	9	70	38
Education Level					
None	3	0	0	40	0
Primary	20	10	3	43	6
Secondary and above	77	90	97	17	94
Marital Status					
Single	34	26	3	17	31
Married	47	69	97	70	61
Divorced/widowed	19	6	0	13	8
Occupational status					
Self-employed	36	51	13	40	15
Salary employment	19	20	56	7	19
Casual employment	1	8	0	10	3
Unemployed/ student	17	10	6	20	44
Homemaker/others	27	10	25	23	8

7.2. Urban Households and Urban-Rural Linkages

The urban households are composed of both migrants from the rural areas and those born in the city. **Figure 7.1** shows that majority of the respondents in Dakar were born in the city, while those in Minna and Harare were migrants to the city. Yaoundé and Nairobi had an equal share of respondents who were migrants and those born in the city. Those who migrated to the city from other areas did so for various reasons such as education opportunities, employment and business opportunities, marriage, and family ties. In addition, the urban households in all the cities have strong links with their rural homes. This is because the large majority of the urban households in all the cities have part of family members living in the rural home or area.

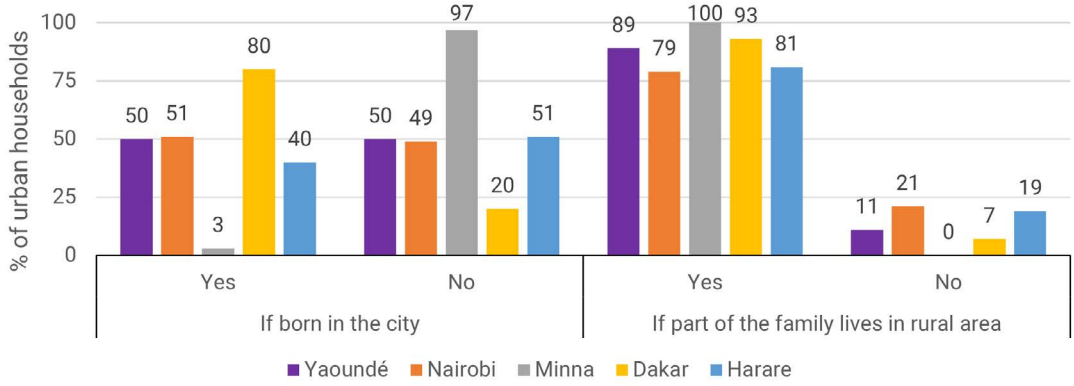

Figure 7.1. Urban households migration history and urban-rural links

Flow of visits between urban households and rural home family members

The urban households maintain closer ties with their rural homes and rural family members. **Figure 7.2** shows that majority of the urban households in Yaoundé (49%), Nairobi (61%), Minna (72%), Dakar (37%) and Harare (53%) visit their rural homes yearly on a regular basis. Likewise, most of the households are regularly visited by their rural family members in year, except in Dakar, where such rural-to-urban visits tend to be rare in frequency.

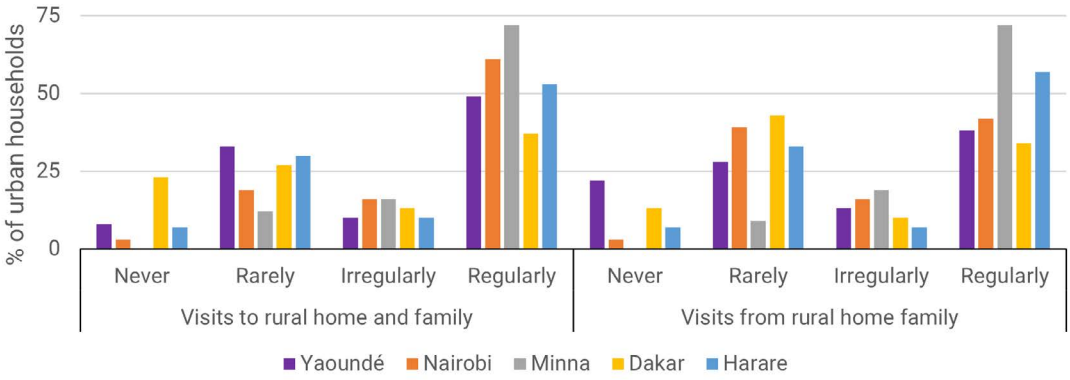

Figure 7.2. Frequency of visits between urban households and rural home family

The rural smallholder farming households were also asked about ties with their city-based family members living in Yaoundé, Nairobi, Minna, Dakar and Harare. The smallholder farmers had varying proportions of households with family members living in the five cities. In Cameroon, 48% of the smallholder farming households had family members living in Yaoundé; in Kenya, 52% of the households had family members living in Nairobi; in Niger State, 90% of the households had family members living in Minna; in Senegal, 97% of the households had family members living in Dakar; and in Zimbabwe, 65% of the households had family members in Harare. According to **Figure 7.3**, majority of the smallholder farming households in Kenya (36%), Niger State (89%) and Senegal (30%), visit, on a regular basis, their city-based family members in Nairobi, Minna and Dakar, respectively, in a year. In Cameroon, most of the households (51%) never visit their city-based family in Yaoundé, while in Zimbabwe, 44% of the households rarely visit their city-based family in Harare. On the other hand, majority of the smallholder farming households in Kenya (45%), Niger State (81%) and Zimbabwe (53%) are visited by their city-based family on a regular basis in a year. However, 54% of the households in Cameroon are never visited by their city-based family in Yaoundé, while in Senegal, 43% of the households are rarely visited by their city-based family in Dakar.

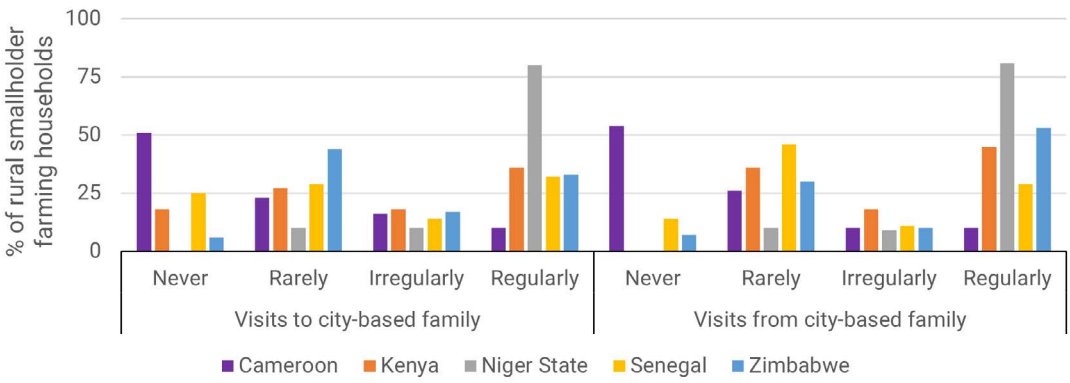

Figure 7.3. Frequency of visits between rural smallholder farming households and city-based family

Flows of cash and food remittances between urban households and rural home family

Urban households in Yaoundé, Nairobi, Minna, Dakar and Harare send cash remittances to their rural homes as they also receive food remittances from their rural homes. Figure 7.4 shows that more than half of the households in Nairobi (58%), Minna (53%) and Harare (57%) send money to their rural homes regularly in a year.

The frequency reduces to rarely for most of the households in Yaoundé (51%), while majority of the households in Dakar (40%) indicated that they never send money back home. On the other hand, majority of the households in Yaoundé (38%), Minna (47%), Dakar (34%) and Harare (37%) receive food supplies from their rural homes on a rare basis in a year. It is only in Nairobi that majority of the households (39%) regularly receive food remittances from the rural home.

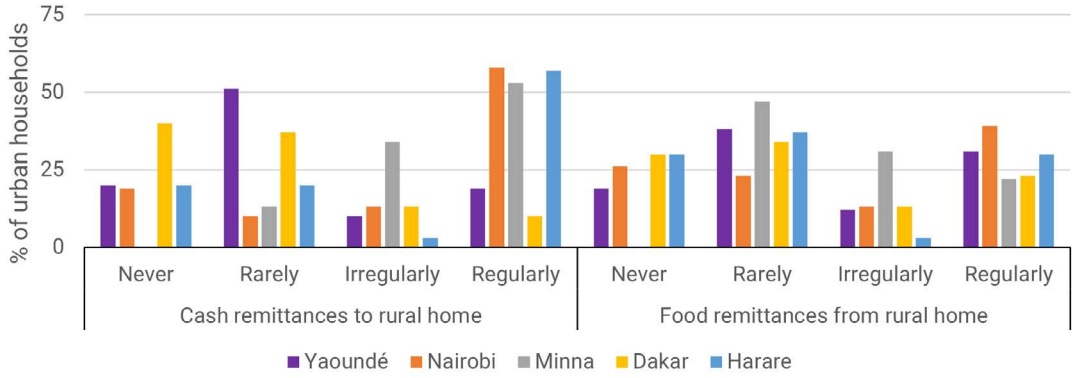

Figure 7.4. Frequency of cash and food remittances between urban households and rural home family

The respondents were asked if urban households members carry food products from the rural areas when returning back to the city after visiting their rural homes. Most of the households in Yaoundé (50%), Nairobi (69%), Dakar (61%) and Harare (78%) carry food products from the rural areas. However, slightly more households in Minna (53%) indicated that they do not carry food from the rural areas. According to **Figure 7.5**, the rural sources of food are largely food given at home in Minna (33%), food from own farm in Nairobi (50%) and food from roadside food vendors in Yaoundé (30%), Dakar (44%) and Harare (57%). In all the cities, food from the rural areas is very important for the households (**Figure 7.5**). The importance of rural sources of food for urban households is further illustrated by the responses from rural smallholder farming households when asked about the frequency of their city-based family reliance on farm food (**Table 8**).

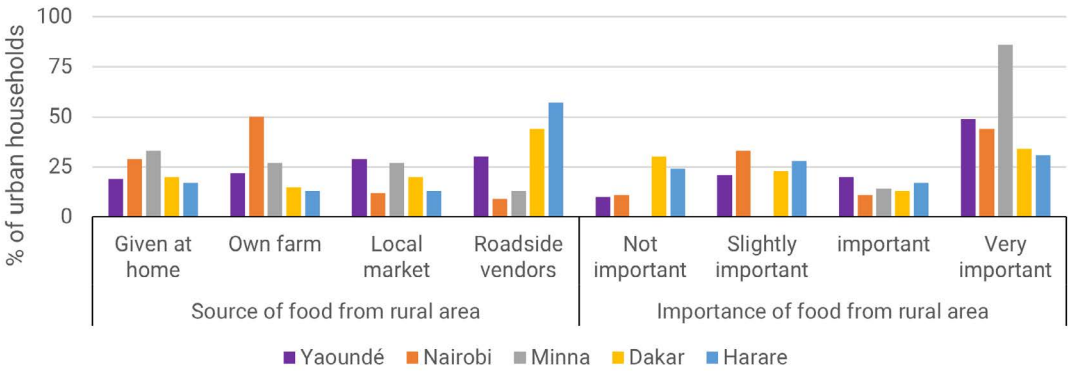

Figure 7.5. Urban households' sources and importance of food from rural area

Table 8. Frequency of city-based family members reliance on farm food

Frequency	Percentage (%) rural smallholder farming households				
	Cameroon	**Kenya**	**Niger State**	**Senegal**	**Zimbabwe**
Never	17	0	0	32	30
Rarely	26	45	31	35	37
Irregularly	27	9	21	11	3
Regularly	30	45	48	22	30

Even then, urban households in Yaoundé, Nairobi, Minna, Dakar and Harare have various sources of food within their cities. They source their food supplies from neighbourhood shops and stores, supermarkets, designated local authority markets, and neighbourhood informal food vendors (**Figure 7.6**). Most of these food supplies are sourced from various rural areas in Cameroon, Kenya, Niger State, Senegal and Zimbabwe. Neighbourhood stores are utilized more in Harare, while supermarkets are least patronized in Yaoundé and Dakar. On the other hand, designated local authority markets are most frequented in Yaoundé, while neighbourhood informal food vendors are commonly used in Yaoundé and Dakar. The choice of a food source is dictated by perceived quality and competitive pricing.

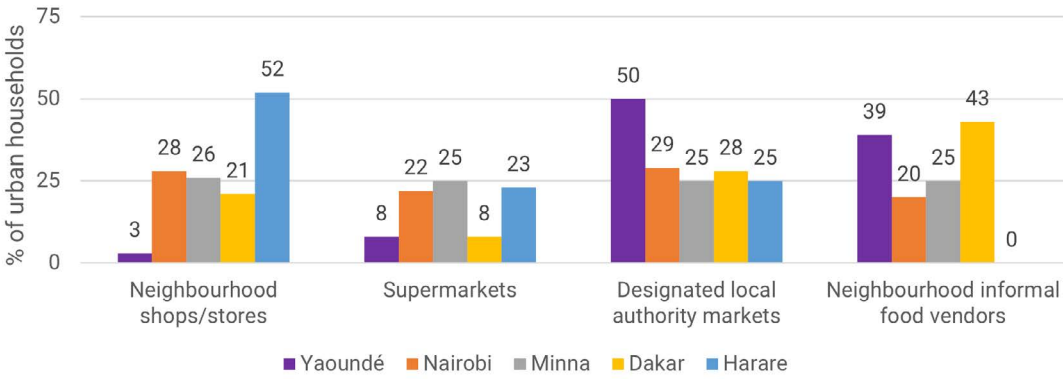

Figure 7.6. Urban households' sources of food in the city

7.3. Urban Households and COVID-19 Containment Measures Compliance

Members of the urban households used face masks and observed physical distancing measures while in public places. They also used sanitizers and embraced handwashing not only at home but also in public places where the facilities were provided. During lockdowns and curfews, they simply stayed and worked from home as recommended. The extent to which the urban households observed COVID-19 containment measures is summarized in **Figure 7.7.**

The urban households had a generally high compliance to curfews and lockdowns measures. However, majority of the households in Yaoundé (68%) indicated that they never complied with curfew measures, while 76% of the households in Dakar reported that they sometimes complied to lockdown measures. On the other hand, compliance to public hygiene and sanitation measures largely ranged between from always and sometimes in various proportions.

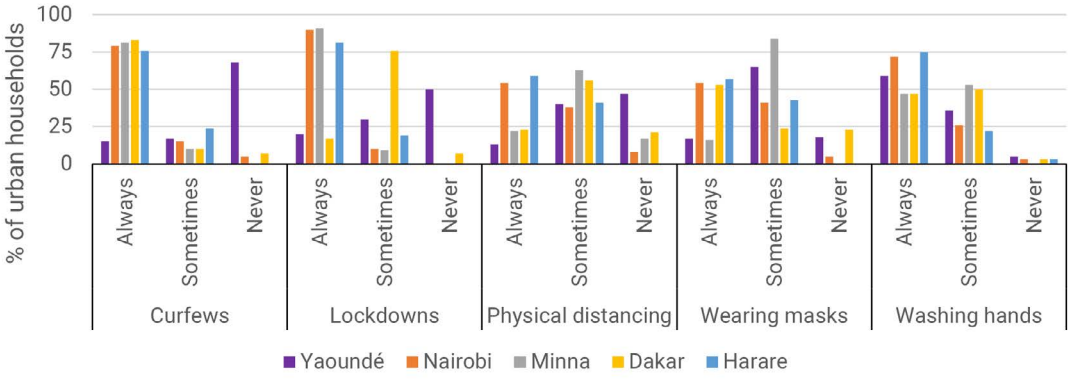

Figure 7.7. Urban households' compliance to COVID-19 containment measures

7.4. Impact of COVID-19 Containment Measures on Urban Households

The sampled urban households were asked whether or not COVID-19 containment measures affected their movements within the city, visits to rural home, access to food, availability of food, and the type and variety of food consumed. Results show that household's regular movements and spatial interactions within the city was largely affected in Minna, Dakar and Harare compared to Yaoundé and Nairobi (Figure 7.8). More than half of the households in all the study countries reported an impact on regular visits and traveling to their rural home.

More than half of the households in Nairobi, Minna, Dakar and Harare reported an impact on access to food. However, only 10% of the households in Nairobi reported that COVID-19 containment measures affected their access to food. Regular availability of food was largely affected in Minna, Dakar and Harare, compared to relatively lower proportion of households in Yaoundé and Nairobi. Lastly, the impact on the type and variety of food consumed was relatively higher in Nairobi and Minna, compared to households in Yaoundé and Harare.

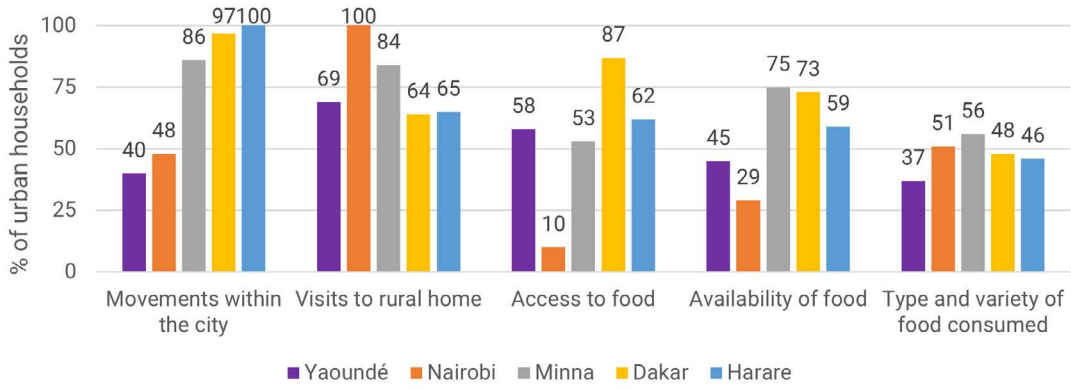

Figure 7.8. Impact of COVID-19 containment measures on urban households

Impact on Movements and Spatial Interaction in the City

Restriction of movement measures, work from home strategies, and the general fear of contracting COVID-19 in perceived crowded places that made most household members to stay at home. This reduced the urban households' regular routines, movements and spatial interactions within the city. While movement within the residential neighbourhoods occurred, movements and interactions between the various parts of the city were drastically reduced because of advisories to observe physical and social distancing, to stop gatherings, and to avoid unnecessary travel and contacts with many people. The situation was complicated further by the fact that public transport systems within the city were forced to reduced their seating and carrying capacity by 50%, resulting into higher transport costs and reduced mobility in terms of the average daily number of passengers being transported. In addition, businesses, offices and schools were closed or functioned at minimal capacity.

> *"Because of lockdown, my husband couldn't go out to get food for my family, also my children couldn't go to school. Everybody was at home".* (Niger State: Transcribed Interview, 2022)
>
> *"Because of the barrier measures, the bar closed at 6p.m. I could not get the income I had before. Moreover, it was no longer possible to move freely in the city"* (Cameroon: Transcribed Interview, 2022)
>
> *"The barriers prevented the parties and funerals that used to take place because of the ban on gatherings"* (Cameroon: Transcribed Interview, 2022)

Impact on Visits to Rural Home

Most households reported that they could not travel to their rural homes due to restriction of movement measures, increased transport costs, and government advisory to avoid unnecessary travels. Generally, total or partial lockdowns prevented people from moving from one area to another.

Lockdowns largely affected the movement into and out of the cities. This reduced or temporarily stopped the movements and visits of city dwellers to their rural homes. Even when there was a window of travelling, the transport costs were high and the logistics to travel were, more often than not, inconveniencing. Furthermore, city dwellers were advised not to travel to their rural homes for fear of spreading coronavirus in the rural areas.

> *"I used to visit my village after every two weeks but during COVID-19, I was not able to visit my relatives at the village because of restrictions on movement"* (Niger State: Transcribed Interview, 2022)
>
> "*My family was supposed to attend a funeral in the village. However, we failed to secure the require paperwork for the whole family in time for the funeral. We will visit after the lockdown to give our condolences* (Zimbabwe: Transcribed Interview, 2022)
>
> *"I refrained from traveling to my rural home due to increased travel cost by both public vehicles or own vehicle (…) I also avoided the risk of contracting Covid-19 and spreading it to my kin at the rural home"* (Kenya: Transcribed Interview, 2022)

Impact on Access to Food

Access to food was generally affected due to reduced food supplies at food retailing points and markets, reduced market and supermarket operation hours, movement restrictions that affected access to food markets and food vendors, and in some cases increased food prices because of limited supplies. Food supply chain within the cities were disrupted to due logistics in transportation of food from the rural areas during lockdown periods and curfew hours. This affected the normal food supply to the cities and, as such, impacting on access to food both physical and economically. Furthermore, restaurants and cooked food outlets were closed.

> *"The lack of food from the village due to the restriction of movement forced me to buy food in the markets despite the scarcity and high cost of food in the market".* Cameroon: Transcribed Interview, 2022)

Impact on Availability of Food

Regular availability of food was also affected by closure of food markets, reduced food supplies at food retailing points and markets, reduced market and supermarket operation hours, movement restrictions that affected access to food markets and food vendors, and in some cases increased food prices because of limited supplies.

> *"Due to restrictions on movement, I couldn't go to the village to pick food from my storage, I was left stranded"* (Niger State: Transcribed Interview, 2022)
>
> *"We could not go out to even get some food products, at times you could have the money but to get the food was a problem"* (Niger State: Transcribed Interview, 2022)
>
> *"The expensive food products and financial constraints that faced us limited our regular availably of food"* (Kenya: Transcribed Interview, 2022).

Impact on Type and Variety of Food Consumed

COVID-19 containment measures determined the type and variety of food households consumed because of limited access to regular food sources, limited supplies and varieties, scarcity and unavailability of food products, reduced purchasing power due to reduced income, and increased costs of food products. As such, some households turned to alternative cheaper foods as they could not afford the expensive regular staple foods. In addition, both the food retailers and informal food vendors had to sell the fewer food types and varieties that their suppliers could bring.

> *"As a Gbagyi man I enjoy eating pounded yam, but because I could not regularly get yam from farm or at the market, I changed my diet to rice and some other food available during that period".* (Niger State: Transcribed Interview, 2022)

7.5. Urban Households Coping Strategies and Recovery from Impacts of COVID-19

Coping Strategies

The following strategies were adopted by urban households to mitigate against the negative impacts of COVID-19 on their households.

- Purchase of bulk and enough household stock of food during market operation hours.
- Prevention of household food waste.
- Getting food assistance from the government and neighbours.
- Growing own food (vegetables and tomatoes) through backyard gardens.

Extent of Recovery from Impacts of COVID-19

The sampled households were asked the extent to which their households have recovered following the relaxation of the COVID-19 containment measures. More than half of the households in Nairobi, Minna, Dakar and Harare have recovered to a moderate and large extent (**Figure 7.9**). Even then, Nairobi records the highest proportion (31%) of households who have recovered to a large extent, while Yaoundé records the highest proportion of households (50%) who have not recovered at all.

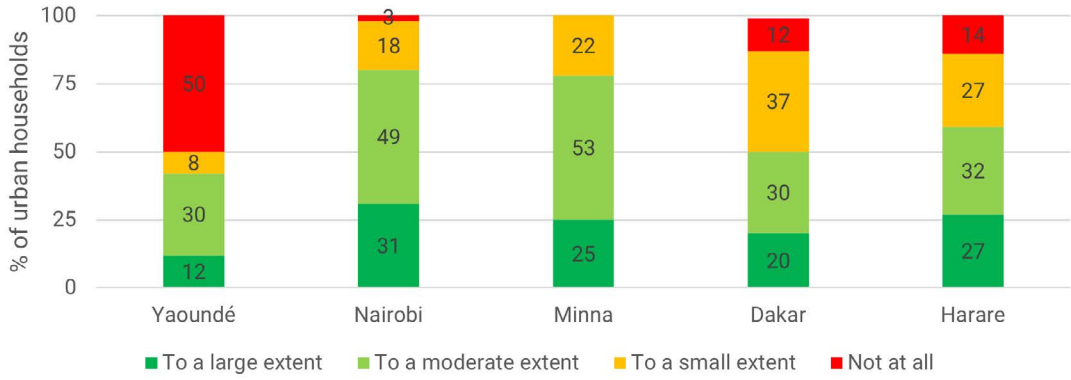

Figure 7.9. Urban households' extent of recovery from COVID-19 impacts

Suggestions for Government Interventions

The following government interventions were suggested as possible ways of reducing the negative impacts of COVID-19 on urban households.

- Provision of food subsidy or food aid/relief to the vulnerable households and to cushion those who had lost their jobs, those who were on pay cut, and those who were forced to stay at home because of the pandemic.
- Adequate sensitization on the impacts of lockdown and curfew measures.
- Improvement in the delivery of water and health care, which were critical during COVID-19 pandemic.
- Provision of free face masks to the urban poor households.
- Controlling the prices of food and basic commodities during such pandemics.

8 Summary of Findings, Conclusion and Recommendations

Havana, Cuba - a worker at the periurban agriculture cooperative Vivero Alamar cultivating crops © FAO

8.1. Summary of Findings

8.1.1. COVID-19 Containment Measures Compliance

Lack of total compliance to COVID-19 Public Health and Hygiene Measures

As much as the governments of Cameroon, Kenya, Niger State, Senegal and Zimbabwe expected compliance to COVID-19 restriction measures, there were pockets of non-compliance. The movement restriction measures (lockdowns and curfews) received a good record of compliance basically because of the governments' strict enforcement. However, public health and hygiene measures (physical and social distancing, use of face masks and washing hands) were not followed as expected because they depended on personal responsibility. As such, 20% of the smallholder farmers, 28% of the rural food retailers, 21% of the urban food retailers and vendors, and 10% of the urban households never complied with the public health and hygiene measures.

8.1.2. Impact of COVID-19 Containment Measures on Rural Food Production

Increased Cost of Production

More than two-thirds (67.2%) of smallholder farmers experienced an increase in their costs of production. The increased cost of production was associated with high costs of transport, high costs of farm inputs from local suppliers, bribes at the many road blocks that enforced movement restrictions during curfew and lockdown periods, and increased cost of fuel. Transport cost is a key factor because most of the smallholder farmers rely on personal vehicles, hired transport and public service transport to transport their farm produce to the rural food supply markets.

Reduced Sales and Selling Prices of Farm Produce

More than three-quarters (76.2%) of smallholder farmers experienced reduced sales of their farm produce, while 92% reported that the selling prices of farm produce reduced. The reduced sales of farm produce were attributed to decreased production, limited transport and logistical delays in transporting farm produce to the operational markets, closure of some markets and reduced market operation hours, and decreased customer base. On the other hand, due to lack of storage facilities, perishable farm produce was sold at very low prices to dispose them quickly and to avoid losses. The non-perishable farm produces also attracted lower prices because of decreased number of customers. In some cases, middlemen took advantage of the short trading periods and farmers' need to sell all their products quickly to dictate for very low selling prices.

Low Determination on Type and Variety of Farm Produce

Only 13% of smallholder farmers indicated that COVID-19 containment measures determined the type and variety of their farm produce. Due to lack of storage facilities and customers, some were forced to stop producing perishable crops, while some resorted to growing crops that mature within a shorter period of time.

8.1.3. Impact of COVID-19 Containment Measures on Food Supply and Distribution

Reduced Business Operation Hours, Customer Base and Sales

More than three-quarters of rural food retailers (77%) and urban food retailers and vendors (82%) noted that curfews and lockdowns had reduced business operation hours. This was largely attributed to the various government protocols on market operation hours. The opening and closing hours of food markets were regulated. Most of the markets were, therefore, expected to work within the scheduled market operation hours as well as adhering to the curfew hours set by the governments. As a result of reduced business and market operation hours, 68% of rural food retailers and 72% of urban food retailers and vendors experienced subsequent low customer base and low sales. In addition, most frequent and daily customers stayed at home as they observed restriction of movement and curfew measures, while at the same time fearing to be infected in crowded place such as markets.

Increased Cost of Running Business

More than two-thirds of rural food retailers (67%) and urban food retailers and vendors (76%) experienced an increase in the costs of running their businesses. This was attributed to high costs of transport and increased costs of procuring food supplies. Food retailers and vendors largely depend on hired transport and public service transport to transport food supplies from various sources to their markets or places of operation.

COVID-19 restriction measures meant that there were scarcity of vehicles and, as such, the transport operators who met the requirements to transport goods increased transport costs. On the other hand, scarcity of food supplies (and high demand) also made food suppliers to increase their prices and thereby increasing food retailers and vendors costs of business. Some of the urban food retailers and vendors attributed their increased costs of business to additional costs in buying face masks and providing handwashing points and soap for their customers, while others noted that the bribes they paid to the police during regular enforcements raids also contributed to an increase on their business costs.

Unpredictable Food Prices Dictated by Market Forces

More than two-thirds of rural food retailers (69%) and urban food retailers and vendors (73%) indicated that COVID-19 containment affected the wholesale and retail prices of the food supplies that they sourced and sold. While majority of them experienced an increase in food prices, others experienced reduced food prices. Increased food prices were attributed to market supply and demand forces linked to low patronage of customers, decline in food supply, high costs of transport, and high demand of the limited food supplies. The same supply and demand market forces, including reduced number of customers, low customer purchasing power and need to clear stock and avoid losses, dictated lower food prices.

Low determination on Type and Variety of Food Products

Only 19% of rural food retailers and 21% of urban food retailers and vendors indicated that COVID-19 containment measures determined the type and variety of food products they sourced and sold. The types and variety of food supplies from far places were slightly affected due to transportation costs, their perishability status and availability. In addition, some food retailers were forced to stock small quantities of perishable food products because of lack of adequate storage and refrigeration facilities for such products, as well as to avoid lot of unsold food stock. Even then, some urban food retailers and vendors explained that there was a high demand for food products that were perceived to treat or help fight against COVID-19.

8.1.4. Impact of COVID-19 Containment Measures on Food Supply Markets

The impact of COVID-19 containment measures on food supply markets and supermarkets can be summarized as follows:

- A general decline in market operating hours, volume of food supply to markets, volume of food sold in markets, volume of buyers in markets, number of food transporters and distributors, and daily income and revenue of markets.
- A general increase in wholesale prices of food for traders and retail prices of food for buyers.
- A market forces driven increase and/or decline in markets expenditure and cost of operations.
- A general decline in supermarket operating hours, number of customers, daily sales, and daily expenditure and cost of operation.
- An inconsistent supply of fresh farm produce to the supermarkets but with no significant effect on fresh food supplies prices.
- A marginal increase in retail prices of fresh farm produce in the supermarkets.

8.1.5. Impact of COVID-19 Containment Measures on Food and Public Transport Operators

Whereas public transport operators were not allowed to operate in and out of lockdown areas and during curfew hours, food transporters were allowed to operate but with special permits and clearances. Even then, the impact of COVID-19 containment measures on food and public transport operators can be summarized as follows:

- For food transporters, a general decline in the number of trips per week, volume of food supplies transported, as well as income revenue and profits. In addition, the food transporters experienced a general increase in the number of police/heath checks, required number of transport permits, and cost of operations and expenditure.
- Public transport operators experienced a general increase in daily operation costs per vehicle and passenger fares and a general decline in daily revenue per vehicle, number of passengers per trip, number of trips per day, number of vehicles per day, and number of full-time staff.

8.1.6. Impact of COVID-19 Containment Measures on Urban Households

Reduced Spatial Interaction and Regular Routines in the City

About three-quarters (74%) of urban households experienced reduced spatial interaction and regular social and economic routines within the city. This was attributed to restriction of movement measures, scarcity of operational public service vehicles and high transport costs, work from home strategies, general fear of contracting COVID-19 in perceived crowded places, closure of schools and offices, and regular government advisories to observe physical and social distancing, avoid gatherings, as well as avoid unnecessary travel and contacts with many people.

Reduced Interaction of Urban Households with Rural Home Family

More than three-quarters (76%) of urban households noted that COVID-19 containment measures affected their regular interactions with their rural homes and family. This was largely attributed to the strict travel restrictions, total or partial lockdowns which mainly affected the movement into and out of the cities, and increased costs of transport. In addition, city dwellers were strongly advised not to travel to their rural homes for fear of spreading coronavirus in the rural areas. This is because the cities were the initial hotspots of coronavirus transmission.

Disruption of Regular Physical and Economic Access to and Availability of Food

Slightly more than half of urban households indicated that COVID-19 containment measures disrupted regular access to food (54%) as well as regular availability of food (56%). The disruption was triggered by closure of food markets, reduced food supplies at food retailing points and markets, reduced market and supermarket operation hours, movement restrictions that affected access to food markets and food vendors, and in some cases increased food prices because of limited supplies. Furthermore, for some households, restaurants and cooked food outlets were closed.

Limited Types and Varieties of Food Consumed

In 48% of urban households, COVID-19 containment measures determined the type and variety of food the households consumed because of limited access to regular food sources, limited supplies and varieties, scarcity and unavailability of food products, reduced purchasing power due to reduced income, and increased costs of food products.

8.1.7. Coping with Negative Impacts of COVID-19 Containment Measures

Rural Smallholder Farmers Coping Strategies

Rural smallholder farmers adopted a couple of strategies to mitigate against the negative impacts of COVID-19 on their farming activities. These strategies can be broadly categorized into strategies to reduce risks; strategies to sustain food production; and strategies to sustain food supply.

- Strategies to reduce risks include lowering of farm produce prices, storage of non-perishable grains, and resorting to alternative small-scale businesses and other sources of livelihoods.
- Strategies to sustain food production include taking financial loans and use of organic manure.
- Strategies to sustain food supply include selling of farm produce directly to customers.

Rural and Urban Food Retailers and Vendors Coping Strategies

Rural and urban food retailers, including the urban informal food vendors adopted a number of strategies to mitigate against the negative impacts of COVID-19 on their food retailing and vending activities. These strategies can be broadly categorized into strategies to reduce risks; strategies to sustain food retailing and vending business; and strategies to sustain food supply.

- Strategies to reduce risks include storage of non-perishable grains in the market; increasing the selling price of food products; purchase of smaller quantities of food supplies; engaging in alternative sources of income and livelihoods; lowering the food retail prices in order to attract customers and clear stock; temporary closure of food retailing and vending business; and reducing stock and supplies to avoid loss.
- Strategies to sustain food retailing and vending business include taking loans to sustain affected food retailing and vending business; selling food on credit to attract more customers; negotiating with suppliers to supply food on credit; increasing food retail prices to compensate for high business costs; making sure that food selling environment is clean in order to attract more customers; bribing enforcement police to source for food supplies and operate during curfew hours.
- Strategies to sustain food supply include selling food directly to consumers and households; sourcing and purchasing food supplies directly from farmers; and selling of food through mobile telephone WhatsApp online interface.

Urban Households Coping Strategies

Urban households adopted a couple of strategies that included purchase of bulk and enough household stock of food during market operation hours, prevention of household food waste, getting food assistance from the government and neighbours, and growing own food (vegetables and tomatoes) through backyard gardens.

8.1.8. Extent of Recovery from Impacts of COVID-19 Containment Measures

The Long Road to Recovery from Impacts of COVID-19

There is no doubt that COVID-19 containment measures had a devastating impact on the economies of Cameroon, Kenya, Niger State, Senegal and Zimbabwe. Even with the fact that most of the COVID-19 restriction, prevention and control measures have been reviewed, lifted, relaxed and/or phased out, the road to recovery from the negative impacts is still long and will be achieved gradually. Relatively large proportions of the smallholder farmers (40%), rural food retailers (36%) urban food retailers and vendors (47%), and urban households (42%) reported that they had recovered to a small extent or had not recovered at all.

8.1.9. Respondents' Suggestions for Government Interventions

Rural Smallholder Farmers

The rural smallholder farmers suggested a couple of government interventions that can be categorized into interventions to cushion against negative impacts of COVID-19 and interventions to sustain food supply.

- Interventions to cushion against negative impacts of COVID-19 include provision of financial support, grants or affordable loans; provision of farm inputs; and lowering or subsidizing the prices of farm inputs.
- Interventions to sustain food supply include allowing food markets to operate fully during such pandemics.

Rural and Urban Food Retailers and Vendors

The rural and urban food retailers and vendors suggested a couple of government interventions that can be categorized into interventions to cushion against negative impacts of COVID-19 and interventions to sustain food supply.

- Interventions to cushion against negative impacts of COVID-19 include provision of financial assistance, loans and support to small-scale traders; lowering food supply prices and taxes to cushion food retailers; provision of security in the markets to facilitate storage of food stock; provision of free face masks, sanitizers and handwashing points to food retailers and vendors; and controlling the price of fuel and costs of transport.
- Interventions to sustain food supply include allowing food markets and food vendors to operate for longer hours during pandemic periods, facilitating farmers and food suppliers to supply and deliver food to markets, and subsidizing prices of farm inputs and food prices.

Food and Public Transport Operators

The food and public transport operators suggested a reconsideration of total lockdown as the best COVID-19 containment measure, controlling the prices of fuel during such pandemic periods, and reducing the number of permits required to travel as well as the number of police checkpoints on the road.

Urban Households

The urban households suggested provision of food subsidy or food aid/relief to the vulnerable households and to cushion those who had lost their jobs, those who were on pay cut, and those who were forced to stay at home because of the pandemic; adequate sensitization on the impacts of lockdown and curfew measures; improvement in the delivery of water and health care, which were critical during COVID-19 pandemic; provision of free face masks to the urban poor households; and controlling the prices of food and basic commodities during such pandemics.

8.2. Conclusion

Despite the efforts by the governments of Cameroon, Kenya, Niger State, Senegal and Zimbabwe to contain the spread of COVID-19, the various COVID-19 containment measures had varying degrees of unintended negative effects on rural food production, rural and urban food supply and distribution, food transportation between urban and rural areas, flow of people and goods within and between territories, and on lives and livelihoods of urban households. Food supply and distribution chains were largely disrupted and therefore affecting access to and availability of food in both rural and urban areas. The disruption of the food supply and distribution chains also led to increase in the prices of food and less types and varieties of food – potential in increasing incidences of food insecurity, hunger and malnutrition, especially for the poor households. Furthermore, the poor households were further subjected to difficult economic conditions because of job lay-offs especially in the service and informal sectors of the urban economy, lack of wage unemployment, and reduced income and wages.

This has further compounded the poverty situation, especially in the cities. COVID-19 containment measures also disrupted a number of other social activities such as weddings, funerals, family gatherings, worshiping, celebrations during national and Christmas holiday, and school going. Besides, fatalities associated with coronavirus were socially and economically devastating to the concerned households. The combined psychological effects were increased stress, separation, loneliness, and marital problems.

There is no doubt that food flows between urban and rural areas has shown that urban-rural linkages are important for the livelihoods of people living in both territories. There exist a strong mutual, social, economic, functional and dynamic interactions between urban households and their family members in rural ancestral homes in terms of visiting each other, financial flows (remittances) and food flows. The fact that flow of food between rural areas and urban markets had to be sustained through provision of permits to food transporters underlines inexorable relationship between rural and urban territories in terms of agricultural food production and urban food consumption in the two respective sectors of the economy and settlement types. As such, public transport operators play an important role in urban-rural linkages, as well as movement of people, food and other commodities between rural and urban areas.

The critical role of urban-rural flows and the significance of a reliable transport system in ensuring the sustainability of socio-economic relations and linkages between urban and rural areas have been noted from the findings. The value of functional flows that ensures that the socio-economic interactions and linkages play an important role in food and goods transfers between the two territories has also been noted. The flows

underline the interdependence of the urban and rural areas. As such, interruptions to the system of flow, as noted during the COVID-19 pandemic period, presented potential for catastrophic socio-economic collapse, beyond the disruption of food and commodity flows.

8.3. Recommendations

8.3.1. Policy and Legislative Recommendations

1. Failures in efficient and systemic management of information on disasters have a potential for distorting intended understanding. It is recommended that communication of information on global pandemics should be well managed to avoid misinformation and misunderstanding that can lead to taking wrong decisions, actions and even panic among disaster managers and the public. This will enhance successful compliance to behavioural-based containment measures such as social distancing, wearing of face masks and hand washing. In addition, such a policy will reduce ***knee-jerk*** responses similar to the ones witnessed from national and county governments at the onset of the pandemic. The policy should prescribe procedures to be followed in managing emergency responses, including enforcement of restrictions on movement and travel in lockdown areas and curfews hours.
2. Proper policy and legislative agenda for sustainable urban and rural food systems strategies to enhance food production, supply, distribution and healthy consumption with little waste. Transformation of urban and rural food systems is a priority in sub-Saharan Africa where food crisis seems to be on the rise – and is even made worse through global pandemics such as COVID-19. Ensuring responsible and sustainable food for all implies planning the food systems as a central aspect of the territorial and development strategies in responding to societal needs.
3. Policy and legislative agenda on provision of food subsidies, food aid and food assistance to the affected poor households during pandemics.
4. Policy and legislative agenda that integrates territorial development as well as formulation of sectoral development plans that recognizes rural and urban as territories with interconnected and interdependent sub-systems such as health, food, ecosystem services, environment, economy and social cohesion.
5. A policy guideline indicating how transporters and farmers can deliver food to the market during global pandemic periods. The guideline should cover permits to transport food by transporters, permits to transport food by farmers, permits to long established buyers, the issuing authority, duration of validity of the permit, and expected treatment by police and food inspectors at roadblocks. Local Authorities may have to add a section to their by-laws

on food on how to address such flows during a pandemic.

8.3.2. Governance Recommendations

1. Implementation of COVID-19 control and containment measures should be done with wider consultations of all the stakeholders and public participation, in addition to increased public awareness campaigns. The public awareness campaigns should focus on the need to implement the measures, the potential negative impacts, and how the impacts can be mitigated at the individual, household, community, institutional and national levels. Furthermore, enforcement of these measures should be done with a human face of controlling the spread of coronavirus rather with a prohibitive aim of restricting business and livelihood activities and operations.
2. Local authorities need to recognize the role of informal food vendors in the rural and urban food supply and distribution chain. There is need to provide these food outlets with the necessary hygiene and sanitation facilities such as water and to make sure that they operate in hygienic food environments that promote the sale of affordable healthy food and diets to the urban poor. Informal food vendors and markets are a major source of food supply for the urban and rural poor and their importance has been especially evident during the pandemic.
3. Rural and urban food markets, including supermarkets, should be allowed to operate for longer hours under strict supervision of public health workers in collaboration with the market and supermarket officials. Rural and urban food markets serve as central places where farmers sell their produce, as well as food collection, storage, distribution, wholesaling and retailing centres.
4. Continuous flow of food commodities even during lockdowns, is vital, hence food transporters should be provided with an unrestricted pass so as to keep maintaining the logistic operations and delivery of food commodities across the urban-rural space. Efficient and established decision making and procedures on issuance of travel permits to food transporters during such pandemics is required to avoid delays and food losses. This will ensure seamless flow of food between urban and rural areas, while sustaining livelihoods. Automation of issuance of transportation and travel permits is recommended in managing the regulation of transportation and travel during future pandemics to sustain flow of food, goods and people and to enhance urban-rural linkages.
5. More food retailing areas should be created within communities so that urban residents have unlimited access to food and related commodities.
6. Improving the management and governance of urban-rural flows of food,

people and goods in the context crises, calamities and disasters to adopt to the existing situation and circumstances, as well as to effectively respond to short, medium- and long-term goals.

7. Governance structures of both rural and urban food markets should be strengthened by incorporating existing organized market trader groups in disaster management and mitigation.
8. There is need to encourage and enhance the use of online platforms in the supply and distribution of food in established food outlets such as supermarkets, including the use of appropriate e-commerce platforms.

URBAN-RURAL LINKAGES AND GLOBAL PANDEMIC DISRUPTIONS IN AFRICA

Impacts on Mobility, Spatial Interaction and Food Systems in Cameroon, Kenya, Niger State (Nigeria), Senegal and Zimbabwe

Many development practitioners have, until recently, viewed urban and rural areas as two mutually exclusive territories. However, this does not reflect the realities of the spatial and sectoral linkages between urban and rural areas. The two territories are two ends of a continuum of human settlements which are spatially and functionally interconnected and interdependent through physical, social, economic and environmental linkages that are continuously changing in time and space. During the coronavirus (Covid-19) pandemic, the spatial and functional linkages between urban and rural areas were greatly affected due to lockdown measures that were enforced to control the spread of Covid-19. Lockdown measures led to the disruption of transportation and flow of food, people, goods, services, resources and capital between urban and rural areas.

Food supply and distribution chains were largely disrupted and therefore affecting access to and availability of food in both rural and urban areas. In particular, Covid-19 exposed the interconnected vulnerabilities between food production, distribution and consumption within the context of city-region food systems. As such, it became evident that urban-rural linkages must be considered more carefully in the short, intermediate and long-term responses to future global pandemics. This calls for renewed territorial planning and policy agenda for national, regional and local governments, especially in sub-Saharan Africa. Sustainable urban development strategies need to consider urban-rural linkages and context in order to enhance more inclusive and resilient cities and human settlements.

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