

# Poverty and Distributional Effects of COVID-19 on Households in Kenya

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*Working Paper*

AFRICAN ECONOMIC RESEARCH CONSORTIUM  
CONSORTIUM POUR LA RECHERCHE ÉCONOMIQUE EN AFRIQUE

# **Poverty and Distributional Effects of COVID-19 on Households in Kenya**

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AERC Working Paper  
African Economic Research Consortium, Nairobi  
November 2020

**THIS RESEARCH STUDY** was supported by a grant from the African Economic Research Consortium. The findings, opinions and recommendations are those of the author, however, and do not necessarily reflect the views of the Consortium, its individual members or the AERC Secretariat.

Published by: The African Economic Research Consortium  
P.O. Box 62882 - City Square  
Nairobi 00200, Kenya

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# Contents

List of tables

List of figures

Abstract

1.	Introduction	1
2.	Situation Analysis and Policy Response to Impact of COVID-19	3
3.	Methodology and Data	5
4.	Conclusion and Policy Recommendations	21
	Notes	24
	References	25
	Annex	26

## List of tables

1.	Trends in poverty headcount ratio 1997-2020	8
2.	Number and share of income losers and income lost per month by region	10
3.	Income loss due to lockdowns as a result of COVID-19 by industry activities	10
4.	Monthly losses in remittances and gifts income and rents and royalties	13
5.	Poverty and inequality effect of COVID-19	14
6.	National and international poverty incidence and poverty gap (%)	15
7.	Uniform monthly budget transfer required to keep poverty constant ex-post	16
8.	Older persons cash transfer simulation on poverty and monthly budget after COVID-19 crisis	16
9.	SMEs tax relief simulation on poverty and monthly budget before COVID-19 crisis	17
10.	Public works cash transfer simulation on poverty and monthly budget for the poor household pre and post-COVID-19 crisis	18
11.	Tax relief on PAYE simulations on poverty and monthly budget after COVID-19 crisis	19
12.	Uniform cash transfer to poor households living with elderly and OVCs simulations on poverty and monthly budget after COVID-19 crisis	19
13.	Share of monthly GDP and poverty headcount ratio after crisis plus transfer by type of government policy	20
Annex 1:	Expected level of impact of COVID-19 pandemic in Kenya by industry/sector	26

## List of tables

1.	Number of daily new COVID-19 cases and policy responses	4
2.	Total COVID-19 case-loads by region as at 1 <sup>st</sup> September 2020	4
3.	Share of households losing incomes by decile	9

# Abstract

The economic and social costs of COVID-19 pandemic have been felt across the globe. With new infections on the rise, it is a race against time for governments to re-look at some policy interventions necessary to provide appropriate coping and recovery mechanisms to respond to the crisis. Informed by the most recent Kenya Integrated Household Budget Survey (KIHBS) 2015/16 data and assumptions on the possible effects of the pandemic on the income of individuals, this paper provides estimates of the poverty impact and simulations of the fiscal costs of mitigating the effects in Kenya. The analysis is informed by microsimulations and Foster, Greer and Thorbecke indices to analyze the effects of the pandemic on poverty. This study estimates that national absolute poverty in Kenya may have declined by 7.2 percentage points from 36.1% in 2015/16 to 28.9% in 2019 (pre-COVID). However, as a result of the pandemic, absolute poverty has increased to 41.9% in 2020, effectively wiping out progress made since 2015/16. This is because households have lost incomes from both labour and non-labour sources amounting to 11.7% of Gross Domestic Product (GDP) or equivalent of Ksh 49.1 billion relative to estimated pre-COVID economic situation. Nationally, about 37.7% of the population (18.0 million people) experienced a loss of their labour and non-labour incomes. The key drivers of the decline in incomes are loss in employment and reduction in earnings majorly due to reduction in labour productivity and trade returns due to the April-June lockdowns. The major income effect to rural areas is from reduced remittances and gifts. To keep poverty headcount ratio at 28.9%, it would cost the Government of Kenya 6.3% of monthly GDP (Ksh 26.4 billion per month) at a uniform universal cash transfer of Ksh 773 targeting all poor households while a cash transfer targeting older persons at Ksh 2,000 per person would cost 0.9% of monthly GDP (Ksh 3.8 billion per month) to keep poverty levels at relatively lower levels of 40%. Other Government interventions that have worked to reduce poverty include reduction of SMEs turnover tax from 3% to 1% (40.1%) and exemptions/reductions in PAYE (39.5%) cost 1.3% and 2.1% of monthly GDP, respectively. In addition to the social protection approach and tax reliefs, easing restrictions while observing the containment measures, including encouraging flexible working policy, would allow households to earn an income.

**Key Words:** *COVID-19; Income; Poverty; Household; Simulation; Kenya*

**JEL Classification:** *D31, I32, H31, C63*

# 1. Introduction

The novel Coronavirus Disease (COVID-19) discovered in Wuhan city in China in December 2019 threatens to reverse the achievements made in reducing poverty at the global and domestic level. In March 2020, the World Health Organization (WHO) declared the novel coronavirus disease (COVID-19) a pandemic and projected that its effects would be prolonged rather than transitory. As such, the disease is likely to have long-lasting economic and social impacts stemming from not only the direct and indirect effects of illness but also the interventions adopted by governments. To this end, many countries have revised their GDP projections downwards to reflect the multiplier negative effects of COVID-19.

The effects of COVID-19 cut across all the economic sectors. However, some sectors are bound to have disproportionately larger impacts. For instance, transport, wholesale and retail trade, entertainment, tourism and personal services, including those engaged in gig economy are expected to have the immediate and largest impacts relative to public, agriculture, professional services, Information Communication Technology (ICT), financial services and some manufacturing sectors. At firm level, noticeable effects include: closure of businesses; drop in demand for products/services; lack of cash flow for business; decline in workers' production/productivity due to working from home; difficulties in obtaining raw materials essential for production; and challenges in logistics and shipping of products.

Businesses and their employees have registered a loss in income or reduced income as a result of illness, increased underemployment and/or loss of employment. A recent survey by the Kenya National Bureau of Statistics (KNBS) indicates that 43.2% of persons above 18 years had lost their jobs by the first week of May 2020 (KNBS, 2020a). Majority attributed this to lockdown or stay away restrictions by the Government and/or their employers. The situation is expected to be worse at the bottom of the pyramid for a country such as Kenya where the poor in the population accounted for 36.1% as at 2015/16 (KNBS, 2018a). As such, the economic and social costs of the outbreak will be significant, and thus the need for the Government to re-look at some policy interventions necessary to provide appropriate coping and recovery mechanisms to respond to the crisis and cushion the people and economy from the adverse effects.

This study contributes to literature by estimating the loss of income due to lockdown, and consequently measures the increase in poverty brought about by income losses using a microsimulation approach. In addition, the study analyses the



effects of Government interventions adopted to offset the increase in poverty, using the most recent household survey. We find that poverty increased significantly, thus affecting income distribution. The losses in both labour and non-labour incomes is due to loss in employment and/or reduced working hours following the lockdown measures and cessation of movement across the country. While the Government policy response measures on cash transfer and tax relief were effective, analysis indicates that the tax relief measures were more effective in reducing poverty since the coverage was wide across all the population while the enhanced social protection measures were restrictive to a select group among the poor.

## **2. Situation analysis and policy response to impact of COVID-19**

Trends in GDP in Kenya show that the economy registered a positive trend from having grown by 5.7% in 2015 to 6.4% in 2018. Projections for 2020 were initially promising, estimated at 7.5% in 2020 (KIPPRA, 2019). However, this projection was revised downwards to 1.7% when the first case of COVID-19 was confirmed in March 2020. As shown in Figure 1, the Government's immediate response to mitigate the socio-economic impact of the crisis on the people and economy at large entailed a number of actions such as closure of all learning institutions, mandatory quarantine of all persons returning home from abroad at prescribed hotels and Government facilities, social distancing, handwashing and sanitizing and remote working from home, among other measures. The measures taken were intended to reduce the spread of COVID-19.

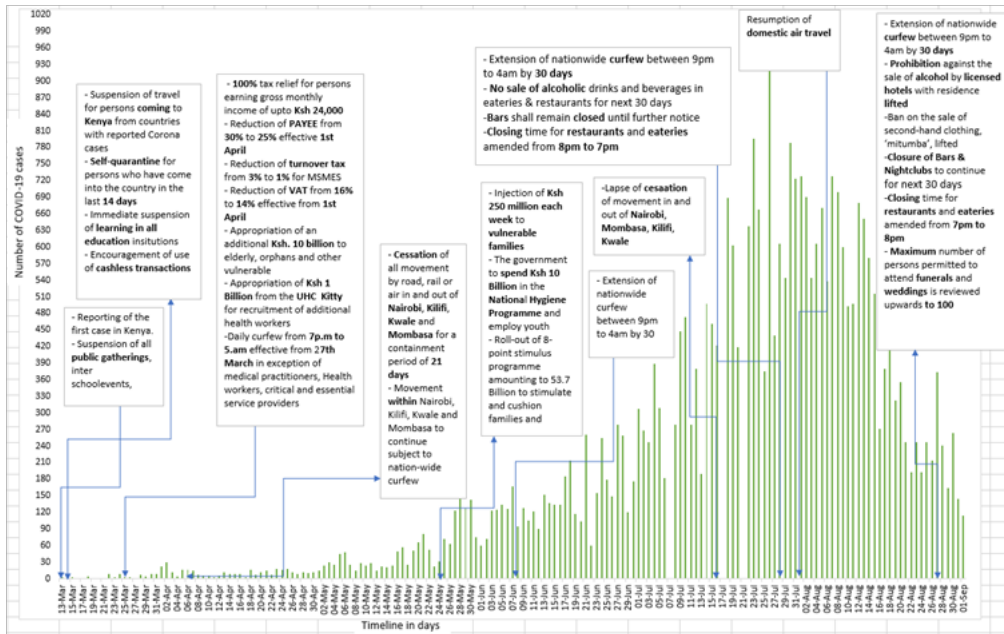
Within a short span of time, more cases were recorded and, as such, the Government introduced mass testing in addition to more stringent measures such as banning of all passenger flights, wearing of masks in public places, introduction of a dusk to dawn curfew, cessation of movement in and out of some counties that recorded higher cases of COVID-19, temporary closure of bars and restaurants, among other measures.

The Government also introduced other fiscal and monetary measures to cushion households from adverse economic effects of COVID-19, including 100% tax relief for those earning up to Ksh 24,000; reduced income tax rate from 30% to 25% for the rest of the income earners, and reduced VAT rate from 16% to 14%; and appropriation of an additional Ksh 10 billion to boost cash transfers. In addition, the Government launched an economic stimulus package worth Ksh 53.7 billion for key sectors affected by the pandemic, including a weekly Ksh 250 million towards cash transfer for vulnerable households. In addition, the Government established a National Coordination Committee on the Response to the Coronavirus Pandemic (NCCRCP) to put in place coordinated approaches in response to the pandemic.

Since 13<sup>th</sup> March 2020, Nairobi County has recorded the highest number of infections followed by counties in the Rift Valley region (see Figure 2). Further analysis shows that the crisis has hit more men (65%) than women (35%) partly due to their socio-behavioural patterns. As at 1<sup>st</sup> September 2020, the number of confirmed cases in the country stood at 34,315 cases, 20,211 recoveries, 577 deaths out of 456,088 tested samples, indicating a low fatality rate and a high recovery rate at 1.7% and 58.9%, respectively (Ministry of Health, 2020) against 1,264,417 cases, 1,002,554 recoveries,

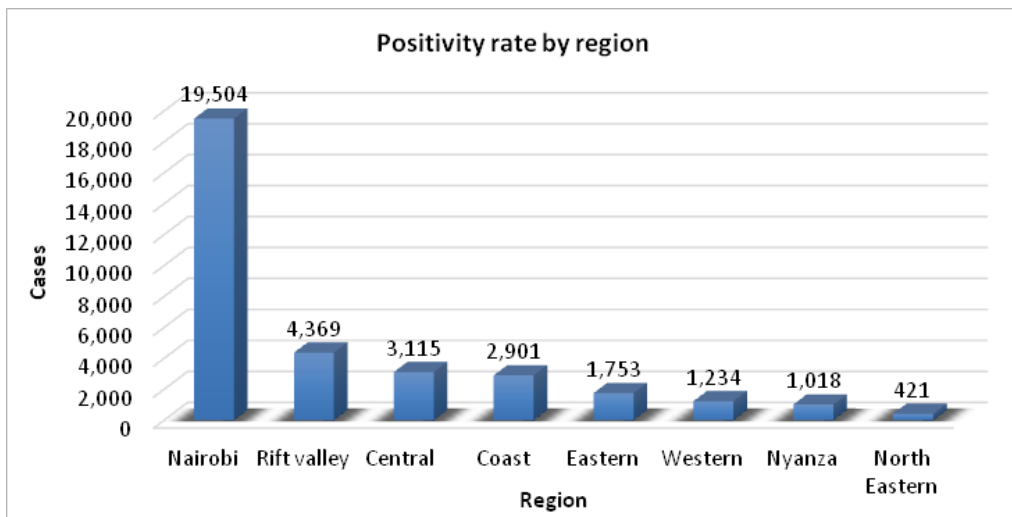
and 30,105 deaths for the Africa region (Worldometer, 2020). These cases are mainly attributed to community infections and increased detections from mass testing. In the last three (3) weeks of August 2020, the reported cases in Kenya began declining, indicating a possible flattening of the curve.

**Figure 1: Number of daily new COVID-19 cases and policy responses**



Source: Author's compilation

**Figure 2: Total COVID-19 case-loads by region as at 1<sup>st</sup> September 2020**



Source: Ministry of Health (2020)

## **3. Methodology and data**

### **Introduction**

The study made assumptions on the possible effects of COVID-19 on the income of individuals and therefore the households. The assumptions were based on the prevailing circumstances and measures that the Government took to contain the spread of COVID-19 and information from recent surveys implemented by Government agencies to ascertain the effects of the pandemic.

In deriving the income losses, the study identified the number of persons employed in various sectors of the economy using micro data from the most recent national household survey. The International Standards of Industrial Classification (ISIC) codes were used to identify the industries and activities where individuals are employed. Based on the prevailing restrictions provided, various assumptions were drawn. The analysis further used national poverty lines to estimate poverty rates before and after income losses for national and selected categories. The main method of analysis in this study was constructing poverty measures as developed by Foster, Greer and Thorbecke (Foster et al., 1984) using household consumption expenditure and absolute national poverty lines used by the Kenya National Bureau of Statistics (KNBS). Details on poverty and inequality identification and measurement are shown in Annex 3.

### **Micro-simulation approaches**

Micro-simulation analysis and direct simulation approaches were applied on the data to estimate Government expenditure that would be necessary to offset the increase in poverty because of COVID-19 crisis. Assumptions and measured distributional consequences of income losses induced by COVID-19 are as shown in Annex 4 and Annex 5.

To estimate the distributional consequences of income losses induced by COVID-19 crisis and simulate policy scenarios, the study used an approach that is descriptive as it uses information about households' consumption expenditure to decide how much income they lose during the crisis. These losses are then deducted from their pre-crisis income to arrive at post-crisis incomes. Thereafter, distributional statistics such as poverty and inequality are compared for the pre- and post-crisis welfare

distributions. A combination of parameters is used to decide how much income each household loses. These parameters include:

- The type of individual income(s) aggregated at household level; that is, labour earnings, rents, remittances, transfers and pensions;
- The nature of employment; that is, employed (public vs private sector) and self-employed;
- The industry/sector of work, such as agriculture, manufacturing, wholesale and retail, transport, accommodation and food services, and arts and entertainment;
- The (in)formality of work; and
- Location of work (such as: major cities, other urban areas and rural areas).

Household incomes across all the economic activities as classified in ISIC rev 4 were assumed to be either safe or at-risk. The decision to group the incomes was informed by the KNBS Wave 1 and 2 surveys on socio-economic impact of COVID-19 on households, and authors conceptualization of prevailing conditions in the country (see Tables in Annex 4 and 5). From the KNBS survey, information on the time difference in working hours before and after COVID-19 and changes in both labour and non-labour incomes informed the proportion of losses in incomes. Activities in which individuals reported a reduction of 40 hours per week (such as education) were assumed to have lost nearly all their incomes except for workers employed in the public sector. Most of the other activities reported hours worked of less than 40 hours per week, and their estimated share of income losses were prorated commensurately. All public sector incomes were assumed to be safe incomes. In addition, it is assumed that rural remittance losses were at 20% and 40% for urban remittances.

To analyze the policy simulations, policy interventions that the Government implemented to cushion citizens from the impact of the crisis were considered, including the following:

- The first simulation considers the required per adult equivalent uniform transfer to keep poverty unchanged given the new poverty headcount ratio in 2020.
- The second policy simulates a new poverty headcount ratio if a cash transfer of Ksh 2,000 is distributed to households living with the elderly persons aged 60-70 years. It is assumed that those aged 70 years and above are already benefitting from the usual cash transfer programme. The cash transfer of Ksh 2,000 is based on the current Government social protection programme that targets vulnerable households.

- The third policy simulates the poverty implications of reducing the turnover tax for Small and Medium Enterprises from 3% to 1%.
- The fourth policy simulates the effect of a public works programme targeting the extreme poor households living with youths and other vulnerable groups.
- The fifth policy simulates the effect of a reduction in Personal Income Tax (PAYE) rates; that is by 100% for those earning Ksh 24,000 and below, and 5% for the rest of the income groups.
- Finally, the sixth policy simulates the effect of a cash transfer of Ksh 2,000 to extreme poor households living with elderly persons aged between 60 and 70 years and Orphans and Vulnerable Children (OVCs).

## Data sources

The main data source for this study was the most recent household level budget survey in Kenya, the KIHBS 2015/16. The household budget survey data was collected over a period of 12 months between April 2015 and May 2016 and this facilitated the control for seasonality. The sampling frame was based on the fifth National Sample Survey and Evaluation Frame (NASSEPV). The survey was conducted in 2,400 clusters stratified by rural and urban. The interviews were conducted across all 47 counties in Kenya, covering about 24,000 households. The final dataset used in this analysis consisted of 21,773 households.

The multipurpose survey contains information covering individual and household dimensions useful for this study, such as: demographics, labour supply across sectors and consumption expenditure. The data also contains population and household weights.

In addition, other recent datasets collected for purposes of understanding the implications of COVID-19 were utilized as necessary especially in sharpening the assumptions. This includes the aforementioned KNBS 2020 Wave 1 and 2 surveys on “Socio-economic Impact of COVID-19 on Households in Kenya”. The KNBS household survey on “Socio-Economic Impact of COVID-19 in Kenya” is a longitudinal survey which was set to be implemented in 6 waves on a bi-weekly basis to provide reliable estimates at county level. The waves entailed collecting data from a sequence of interviews for repeated observations derived by following a given sample of persons who provided personal and household level data. To select a representative sample for each of the 47 counties, the Population and Housing Census 2019 provided the sampling frame. The frame was stratified by county, age and sex. The first wave data collection was conducted between 2<sup>nd</sup> and 9<sup>th</sup> May 2020 while the second wave was conducted between 30<sup>th</sup> May and 6<sup>th</sup> June 2020.

## Descriptive analysis of trends in poverty headcount and caseloads for COVID-19

The poverty situation of Kenyans has significantly improved over the last two decades with the poverty headcount ratio having declined by 16.5 percentage points between 1997 (52.6%) and 2015/2016 (36.1%) as shown in Table 1. Estimates from the current study show that between 2015/16 and 2019, considerable progress had been achieved in reducing poverty headcount ratio further from 36.1 per cent in 2015/16 to 28.9 per cent in 2019 before rising again to 41.9 per cent in 2020 (see Table 1).

**Table 1: Trends in poverty headcount ratio 1997-2020**

Poverty measure	Sub-population	WMS III -1997	KIHBS 2005/6	KIHBS 2015/6	2019 (pre-crisis current study)	2020 (post-crisis current study)
Absolute poverty rate (headcount ratio) (%)	National	52.6	46.6	36.1	28.9	41.9
	Core-Urban	50.1	34.4	29.4	14.0	38.6
	Peri-urban	-	-	27.5	31.6	49.9
	Rural	53.1	49.7	40.1	30.9	40.7
Number of poor individuals (millions)	National	13.4	16.6	16.4	13.8	19.9
	Core-Urban	2.0	2.5	2.3	0.8	2.2
	Peri-urban	-	-	2.3	1.7	2.7
	Rural	11.4	14.1	12.0	11.3	14.8

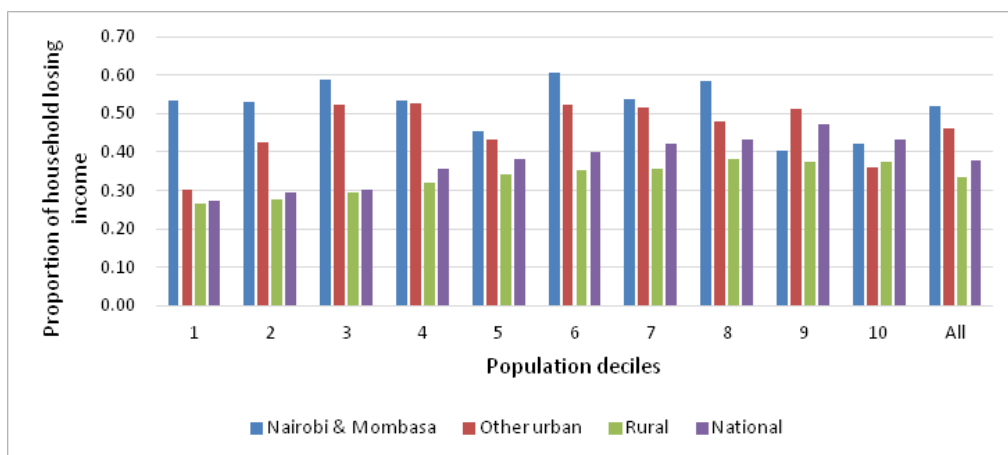
Source: KNBS (2007); KNBS (2018b); estimates 2019 and 2020 are obtained from current study

The estimated increase in absolute poverty headcount ratio is 13.0 percentage points. The rise in headcount ratio considers the effects of the pandemic, which occurred in 2020. The change in poverty is high given that existing social protection covers only a few extreme poor households, yet with majority of the population's average income not far from the poverty line, any shock such as the pandemic is likely to affect such households negatively and shift them into poverty. It is apparent that the increase in poverty was relatively higher in core urban and peri-urban areas given that a huge population living in the urban areas derives income from labour. Core urban and peri-urban absolute poverty is estimated to have increased by 24.6 and 18.3 percentage points, respectively, while rural poverty increasing by only 9.8 percentage points.

While the pandemic has affected all households across the income distribution, over 50% of households living in Nairobi and Mombasa lost their incomes as a result of the pandemic as shown Figure 3. Specifically, for Nairobi and Mombasa, the most affected are the lower and middle income. In other urban areas, the most affected were in the middle deciles, with the least affected being the poorest and the richest; that is decile 1, 2 and 10. This could be because urban centres constitute a large proportion

of people working in the most affected sectors such as in retail and wholesale trade, accommodation and food services, teachers in private schools and transport. However, in rural areas, the effect increases with income. This could be because most people in rural areas are in agricultural-related activities, and larger farmers may have lost more due to market disruptions at the local and international level.

**Figure 3: Share of households losing incomes by decile**



Source: Authors' computation using KIHBS 2015/16

## Impact on labour and non-labour incomes

The economic cost of the pandemic measured by the lost labour and non-labour income in the first four months of COVID is estimated to account for 11.7% of monthly GDP (Table 2). These effects are for less than an entire year, and therefore their impact on the year's growth is less than the immediate impact on monthly GDP. This is because the impact on the first quarter of the year was low and the expected impact in the last quarter of the year is expected to be less severe as the economy is recovering. In monetary terms, the loss in GDP translates to a monthly income loss of Ksh 48.9 billion. The loss in labour and non-labour incomes is mainly attributed to loss of jobs as a result of both domestic and international lockdowns, cessation of movement restrictions, decline in productivity of businesses in some industries, and salary cuts. According to a survey undertaken by the KNBS, 43.2% of persons above 18 years had lost their jobs in the first week of May 2020 (KNBS, 2020a). Our results show that about 37.7% of the population (18.0 million people) experienced a loss in their incomes. In Nairobi and Mombasa where the lockdowns were implemented, 52.0% of the population (3.1 million people) are estimated to have lost their incomes. In other urban and rural areas, those affected are 46.1% (3.5 million people) and 33.3% (11.4 million people) of the population accounting for 3.5 per cent and 4.1 per cent of annual GDP, respectively (see Table 2).



**Table 2: Number and share of income losers and income lost per month by region**

Region	Monthly income loss due to crisis				
	Total people in households that lost income (million)	Share of population losing income (%)	In Ksh billion	In US\$ million	Share of GDP (%)
Nairobi and Mombasa	3.1	52.0	17.2	162.0	4.1
Other urban	3.5	46.1	14.7	138.6	3.5
Rural	11.4	33.3	17.2	162.2	4.1
National	18.0	37.7	49.1	462.8	11.7

Source: Authors' computation using KIHBS 2015/16

### **Impact on labour incomes**

Table 3 shows the total employed, total lost income, proportion of income losers and lost income per income loser by Kenya's economic sectors. Looking at the COVID-19 effects across all the sectors, a total of 4.7 million out of 16.5 million workers lost about Ksh 30.8 billion per month as shown in Table 3. The results are consistent with published reports and media reports which show that these industries have had reduced working hours due to closure of businesses between April and June (KNBS, 2020a; KNBS, 2020b). The loss in incomes in all the sectors was mainly as a result of a ban on international travel and social gatherings, cessation of movements and requirements to maintain social distancing (see Annex 3 for assumptions).

**Table 3: Income loss due to lockdowns as a result of COVID-19 by industry activities**

Activities	Hours lost (from KNBS 2020 wave 1 survey)	Total lost income (million Ksh per month)	Total employed	Proportion of income losers in a given industry/sector (%)	Lost income per income loser (Ksh per month)
Arts entertainment and recreation—gambling and betting	-	26	5,687	78	5,932
Accommodation and food services	30	2,638	485,062	76	7,149
Wholesale and retail trade of other commodities other than food, beverages and pharmaceuticals	13	7,069	1,656,826	75	5,657

*continued next page*

**Table 3 Continued**

<b>Activities</b>	<b>Hours lost (from KNBS 2020 wave 1 survey)</b>	<b>Total lost income (million Ksh per month)</b>	<b>Total employed</b>	<b>Proportion of income losers in a given industry/sector (%)</b>	<b>Lost income per income loser (Ksh per month)</b>
Horticulture	8	626	159,605	71	5,492
Real estate activities	20	387	34,230	61	18,523
Construction—buildings and civil engineering	23	6,430	965,417	56	11,825
Education	40	1,963	748,797	55	4,790
Activities of households as employers— e.g. domestic and casual workers	8	1,622	440,636	52	7,021
Air passenger transport	-	256	3,909	52	126,905
Other personal activities— washing, dry cleaning, funeral services, hairdressing, etc	-	1,941	460,922	44	9,588
Transport - Road, pipeline, water and cargo air	12	3,585	661,862	43	12,577
Manufacture of other commodities other than food, beverages and tobacco	12	2,109	683,351	33	9,428
Arts entertainment and recreation - sports activities, amusement and recreation activities	7	18	19,602	26	3,515
Libraries, archives, museums and other cultural activities	-	64	9,585	25	26,954
Administrative and support service activities in renting, placement agencies, and tour travel	-	33	31,978	24	4,206
Wholesale and retail trade of food products, beverages and tobacco products	13	625	776,001	23	3,473
Activities of membership organizations—religious, political and other related organizations	-	151	64,738	22	10,683
Activities of professional membership organizations and trade unions	-	8	9,121	13	6,692

*continued next page*

**Table 3 Continued**

Activities	Hours lost (from KNBS 2020 wave 1 survey)	Total lost income (million Ksh per month)	Total employed	Proportion of income losers in a given industry/sector (%)	Lost income per income loser (Ksh per month)
Crop and animal production, hunting and related service activities	8	987	7,223,313	11	1,221
Administrative and support service activities	6	153	520,330	5	5,966
Forestry and logging	-	7	167,281	4	1,086
Fishing and aquaculture	-	2	90,915	3	651
Financial and insurance activities	12	6	67,071	3	2,541
Professional, scientific and technical activities	0	91	178,422	3	17,033
Warehousing and transport support activities and postal and courier	-	19	128,107	3	5,506
Mining	6	8	46,252	3	6,473
Sectors/industries not losing income		-	883,230	-	-
All sectors/industries		30,823	16,522,251		

Note: Based on hours lost (KNBS, 2020a), share of income likely to be lost in each of the industries were computed. Where we have a dash (-) in hours lost, no respondent reported. Education lost on average 40 hours/week, which was prorated to about 30% income loss (for those in private sector as individuals may not have lost all their incomes - e.g. online tuition, retainer allowance/lesser pay and other activities). The other industries lost between 0% and 75% of working hours, which was used to estimate losses in income. However, the KNBS data does not provide hours lost for some sectors, hence other sources of information were used to inform conceptualization of expected effects of lockdowns, curfews and social distancing requirements on industries/sectors as shown in Annex 2.

Source: Authors' computation using KIHBS 2015/16

### **Impact on non-labour incomes**

Incomes from rent, remittances and gifts are analyzed in this section. Households living in rural areas are assumed to lose 20% of remittance incomes while their urban counterparts lose 40%. On average, the monthly loss in remittances and gifts is estimated at Ksh 5.0 billion. This accounts for both domestic and international remittances. More losses have been registered in rural areas (Ksh 2 billion) relative to other urban (Ksh 1.9 billion). The lost income per person in households losing remittances and gifts income is on average Ksh 375 per month as shown in Table 4. However, the average loss in income per person is highest in Nairobi and Mombasa (Ksh 1,287 per month) where the lockdowns were instituted. In addition, the remittances received in Nairobi and Mombasa are likely to originate from international sources

where majority of the population have suffered from the consequences of COVID-19. In terms of number of people affected, close to 13.5 million individuals lost remittances and gifts income. It was estimated that most losers (about 81% of the total) were living in rural areas.

**Table 4: Monthly losses in remittances and gifts income and rents and royalties**

	Total lost income (million Ksh per month)		Total people in households losing income		Lost income per person in households losing income (Ksh per month)	
	Remittances & gifts	Rents & royalties	Remittances & gifts	Rents & royalties	Remittances & gifts	Rents & royalties
Nairobi and Mombasa	971	428	754,181	137,007	1,287	3,125
Other urban	1,998	257	1,847,280	292,552	1,082	878
Rural	2,081	369	10,873,810	841,332	191	438
National	5,050	1,054	13,475,271	1,270,890	375	829

Source: Authors' computation using KIHBS 2015/16

Similarly, losses in rent incomes are glaringly high. These incomes include rent from assets such as residential and non-residential buildings, machinery, and cash crops (such as *miraa*, tea, and sugar). It also includes rent received from leasing of land and sub-soil assets. Landlords are estimated to have lost up to Ksh 1.0 billion per month. The average monthly loss per person is highest in Nairobi and Mombasa (Ksh 3,125) relative to other urban (Ksh 878) as shown in Table 4. The total monthly loss (Ksh 428 million) in rent income is highest in Nairobi and Mombasa. This could either be due to landlords lowering their rent rates, and some tenants' inability to pay rent. The inability to pay rent is explained by the rampant job losses and reduced incomes as a result of closure of some businesses and in some cases low business. As such, employers have laid off their workers and, in some cases workers have had to either take unpaid leave or a pay cut. Unlike average individual losses in rent income where those who are losing higher amounts are in urban areas, majority of the people who have lost rent incomes live in rural areas (66%). This could be attributed to the larger proportion of Kenyans living in rural areas who also rely on rent incomes from leasing machinery, cash crops (such as *miraa*, tea, and sugar), land and sub-soil assets such as building stones and gravel.

## Poverty and inequality impact of the crisis

In 2015/16, it was estimated that 36.1% of the population lived below the poverty line. Poverty was higher among households living in rural areas (40.1%) than urban (28.0%) (KNBS, 2018b). This study estimates that the national absolute poverty headcount ratio may have declined by 13.0 percentage points in 2019 (28.9%) and rose significantly to 41.9 per cent in 2020, thus effectively wiping out progress made since 2015/16 (see

Table 5). Between 2016 and 2019 (pre-COVID), the national real economic growth increased by 11%. Therefore, household level incomes were adjusted upwards by a similar margin. This resulted in a decrease in pre-crisis absolute poverty levels. In absolute terms, about 6.2 million people (13.0% of the population) are estimated to have slipped into poverty in 2020. In Nairobi and Mombasa where lockdowns were implemented, the absolute poverty incidence more than doubled from 14.0% in 2019 to 38.6% in 2020, consequently pushing 1,452,443 people into poverty in 2020. The percentage increase in poverty headcount ratio was highest in Nairobi and Mombasa (24.6 percentage points) compared to other urban areas and rural areas with an increase of 18.3 and 9.8 percentage points, respectively. The increase in poverty is as a result of reduced incomes and/or job losses experienced by household members as depicted in the earlier section.

**Table 5: Poverty and inequality effect of COVID-19**

	Poverty effect of crisis using national poverty line			Inequality effect of crisis		
	Poverty rate			People falling into poverty	Gini Coefficient	
	Before crisis (%)	After crisis (%)	% change		Before crisis	After crisis
Nairobi and Mombasa	14.0	38.6	24.6	1,452,443	0.329	0.468
Other urban	31.6	49.9	18.3	1,391,084	0.352	0.451
Rural	30.9	40.7	9.8	3,319,112	0.327	0.350
National	28.9	41.9	13.0	6,162,640	0.391	0.402

Source: Authors' computation using KIHBS 2015/16

Inequality generally declined at the national level, rural and urban areas over the decade from 2005/06 to 2015/16. At the national level, the Gini coefficient decreased from 0.470 in 2005/06 to 0.404 in 2015/2016. In this study, it is estimated that inequality declined further to 0.391 in 2019; that is, the pre-crisis period. Table 5 show that income inequality increased by 0.011 points from 0.391 before crisis to 0.402 in 2020, therefore eroding the progress made in the years before. Urban inequality was higher than rural inequality with Nairobi and Mombasa experiencing the highest increase from 0.329 in 2019 to 0.468 in 2020. This could majorly be attributed to loss in employment and incomes of more people in Nairobi and Mombasa where the lockdowns were implemented.

Poverty analysis using the extreme poverty line shows that extreme poverty headcount ratio increased from 6.4 per cent in 2019 to 16.4 per cent in 2020 (see Table 6). This means that a large share of the new extreme poor will be concentrated in regions that are already struggling with high poverty rates and number of poor people.

The poverty gap is a measure of poverty that enables governments to estimate the amount of required resources to bring the poor to the poverty line. While the poverty gap worsened between 2015/16 and 2019, that is from 7.7% (KNBS, 2018b) to 8.0%, the COVID-19 era has contributed to a significant rise to account for 16.9% in 2020 compared to no COVID scenario (8.0%) in 2019. This means that it will cost the taxpayer more shillings to eliminate COVID-19 related poverty than in the case of no COVID scenario (see Table 6).

**Table 6: National and international poverty incidence and poverty gap (%)**

	National Poverty Incidence		National Poverty Gap	
	Ex Ante (%)	Ex Post (%)	Ex Post (%)	Ex Post (%)
National Poverty Line	28.9	41.9	8.0	16.9
Extreme Poverty Line	6.4	16.4	1.6	7.8

Source: Authors' computation using KIHBS 2015/16

## Fiscal costs of mitigating the effects of COVID-19 on poverty

In this section we run six (6) policy simulation scenarios.

Other than the first simulation on the uniform universal transfer required to keep the absolute poverty headcount ratio constant, 5 simulations inform on the effect of programmes being implemented by the Government to alleviate the economic effects of the pandemic. The effect of the revision of VAT rates from 16% to 14% policy was, however, not simulated due to data limitations.

### **Scenario 1: A uniform universal per adult equivalent transfer that is required to keep the absolute poverty headcount ratio constant**

The results in Table 7 show that 6.3% of national monthly GDP (Ksh 26 billion) would be required to keep the poverty headcount ratio unchanged. On average, each member of the household (adult equivalent) will receive a uniform transfer of Ksh 773 based on the 2020 national poverty line of Ksh 3,350 and Ksh 6,175 for rural and urban, respectively, adjusted for economic growth. Specifically, 5.30% of monthly GDP (Ksh 22.00 billion) would be required to keep poverty constant in Nairobi and Mombasa at a uniform transfer rate of Ksh 5,031 per adult equivalent. Similarly, 2.50% of monthly GDP (Ksh 11.00 billion) would be required to keep poverty constant in both other urban and rural areas at a uniform universal transfer rate of Ksh 1,819 and Ksh 419, respectively.

**Table 7: Uniform monthly budget transfer required to keep poverty constant ex-post**

	Poverty changes before and after crisis (% change)	Ksh billion	Share of monthly GDP (%)	Average transfer per adult equivalent (Ksh)
National	13.0	26.00	6.30	773
Nairobi and Mombasa	24.6	22.00	5.30	4,850
Other Urban	18.3	11.00	2.50	1,819
Rural	9.8	11.00	2.50	419

Source: Authors' computation using KIHBS 2015/16

### **Scenario 2: A national monthly cash transfer grant of Ksh 2,000 to all individuals aged 60 years and above living in a given household scaled to per adult equivalent terms**

Under the elderly persons' cash transfer programme, Ksh 5 billion has been allocated to help affected households alleviate the economic effects of the pandemic. Out of the allocated amount, 30 per cent is spent on administrative costs. Therefore, Ksh 3.5 billion is expected to benefit poor households with elderly persons. This scenario assumes that the 70 year-olds plus already receive Ksh 2,000 per month from the existing Government social protection programme and are therefore excluded in this simulation. A new post-crisis household consumption per adult equivalent (PAE) was generated by adding new cash transfer to each household living with older persons aged 60 years and above. The simulated new poverty at national and sub-population levels are reported in Table 8.

**Table 8: Older persons cash transfer simulation on poverty and monthly budget after COVID-19 crisis**

	Poverty Rate (%)			Total Budget (monthly)		
	Before crisis	After crisis	After crisis + transfer	People falling into poverty	Ksh (billion)	Share of monthly GDP (%)
National	28.9	41.8	40.0	5,476,099	3.81	0.91
Nairobi and Mombasa	14.0	36.5	35.6	1,228,015	0.30	0.07
Other Urban	31.6	50.0	49.8	1,326,977	0.39	0.09
Rural	30.9	40.9	38.5	2,921,107	3.12	0.74

Source: Authors' computation using KIHBS 2015/16

The results show that while significant resources are re-distributed to households (0.91% of GDP), the effect on poverty levels is minimal given that the transfers only target a select group of the vulnerable in the population. This difference varies by sub-

region, given that older persons are not equally distributed across the regions and/or households. The decline in poverty is more effective in rural areas (2.4 percentage points change) where majority of the elderly live, compared to Nairobi and Mombasa and other urban areas with 0.9 and 0.2 percentage points change.

### **Scenario 3: The effect of a reduction of SMEs turnover tax from 3% to 1%**

To cushion Small and Medium Enterprises (SMEs) from the economic effects of the pandemic, the Government reduced the SMEs turnover tax from 3% to 1%. This is expected to benefit households who earn income from enterprises making gross sales/turnover that does not exceed or is not expected to exceed Ksh 5 million per year; that is, Ksh 426,666.67 per month. A new household consumption per adult equivalent (PAE) plus universal grant amount for ex ante poor only is generated. The simulated new poverty at national and sub-population levels are reported in Table 9.

**Table 9: SMEs tax relief simulation on poverty and monthly budget before COVID-19 crisis**

	Poverty Rate (%)			Total Budget (monthly)		
	Before crisis	After crisis	After crisis + transfer	People falling into poverty	Ksh billion	Share of monthly GDP (%)
National	28.9	41.8	40.1	5,501,535	5.45	1.30
Nairobi and Mombasa	14.0	36.5	34.1	1,215,207	1.03	0.25
Other Urban	31.6	50.0	48.4	1,268,859	1.29	0.31
Rural	30.9	40.9	39.2	3,017,468	3.13	0.74

Source: Authors' computation using KIHBS 2015/16

The share of monthly GDP is equivalent to 1.3%. The decline in poverty is more effective in urban areas (2.4 and 1.6 percentage points change for Nairobi and Mombasa and other urban, respectively) where majority of SMEs operate as compared to rural areas. Like the policy on cash transfer to the elderly, this intervention reduces poverty by a relatively small extent, from 41.8% to 40.1% compared to the devastating effects of the pandemic on incomes of households and therefore their welfare.

### **Scenario 4: A national monthly labour income of Ksh 6,000 to 20% of poor households expected to benefit from a household member being hired under the public works programme**

A major component of the public works programme is the National Hygiene Programme (NHP), dubbed *Kazi Mtaani*, which is a national initiative designed to cushion the most vulnerable but able-bodied Kenyan citizens living in informal settlements from the effects of the COVID-19 pandemic. The programme majorly targets the youth aged 18 years to 34 years to engage in more urban development projects. The first phase



of *Kazi Mtaani* started in April 2020 as a pilot programme focusing on select informal settlements in eight (8) counties, namely: Nairobi, Mombasa, Kisumu, Kiambu, Nakuru, Mandera, Kilifi and Kwale. The programme had by August 2020 employed over 26,000 workers from the informal settlements. The second phase of *Kazi Mtaani* is expected to be expanded to cover 34 counties and employ about 200,000 workers from informal settlements.

The simulation is based on the first phase of the programme, which has allocated Ksh 16 billion for public works in target urban informal areas and hiring of workers in health, education, tourism and wildlife over a 4-month period. We assume that about 70% of the funds were distributed while 30% was spent on administration costs. The duration of the programme is approximately four months. The new absolute poverty rates are reported in Table 10.

**Table 10: Public works cash transfer simulation on poverty and monthly budget for the poor household pre and post-COVID-19 crisis**

	Poverty Rate (%)			Total Budget (monthly)		
	Before crisis	After crisis	After crisis + transfer	People falling into poverty	Ksh billion	Share of monthly GDP (%)
National	28.9	41.8	40.8	5,775,897	1.79	0.43
Nairobi & Mombasa	14.0	39.3	39.1	1,420,760	0.10	0.02
Other Urban	31.6	47.9	47.8	1,182,252	0.05	0.01
Rural	30.9	40.7	39.6	3,172,885	1.64	0.39

Source: Authors' computation using KIHBS 2015/16

This policy is a public works programme that targets youth living in poor households. The transfer is observed to reduce poverty rate by a small margin across all the regions. The cost of the intervention is highest in rural areas with a budget of 0.39% of monthly GDP (Ksh 1.64 billion), thus reducing poverty from 40.9% to 39.6%. The cut off income for poor households was a monthly per adult equivalent consumption (welfare) less than Ksh 1,962 per month. Only a few households were eligible in urban areas where the programme costed 0.03% of GDP. We conclude that well targeted youth employment programmes can be effective in reducing the rural poverty headcount ratio but least effective in reducing urban poverty.

**Scenario 5: The effect of a reduction in Pay As You Earn (PAYE) rate from 30% to 25% for persons earning above Ksh 24,000 and a 100% tax relief for persons earning up to Ksh 24,000 per month**

This means the incomes of those earning less than Ksh 24,000 but above the minimum wage of 13,000 per month increases by 10% while that for persons earning above Ksh 24,000 per month increases by 5%. The new poverty rate is reported in Table 11.

**Table 11: Tax relief on PAYE simulations on poverty and monthly budget after COVID-19 crisis**

	Poverty Rate (%)			Total Budget (monthly)		
	Before crisis	After crisis	After crisis + transfer	People falling into poverty	Ksh billion	Share of monthly GDP (%)
National	28.9	41.8	39.5	5,443,856	8.78	2.09
Nairobi and Mombasa	14.0	36.5	32.2	1,207,151	2.38	0.56
Other Urban	31.6	50.0	47.1	1,304,125	2.21	0.53
Rural	30.9	40.9	39.1	2,932,580	4.19	0.99

Source: Authors' computation using KIHBS 2015/16

While the cost of implementing PAYE is high at 2.09% of monthly GDP, its effect on reducing poverty headcount ratio is significant. As shown in Table 11, the poverty headcount ratio reduced from 41.8% to 39.5%. The programme is highly effective in urban areas where poverty declined from 36.5% to 32.2% and 50.0% to 47.1% in Nairobi and Mombasa and other urban, respectively. This is expected since majority of wage earners live in urban areas as opposed to rural areas.

**Scenario 6: National monthly cash transfer grant of Ksh 2,000 to 64% and 62% of poor households living with an aged person of between age 60 years and 70 years and Orphans and Vulnerable Children (OVCs), respectively, scaled to per adult equivalent terms**

It is assumed that 70 plus already receive Ksh 2,000 per month. These households benefit under the Government programme that has allocated an extra Ksh 3.5 billion for elderly cash transfers. Our simulation assumes that 30% of the funds are utilized on administration costs.

**Table 12: Uniform cash transfer to poor households living with elderly and OVCs simulations on poverty and monthly budget after COVID-19 crisis**

	Poverty Rate (%)			Total Budget (Monthly)		
	Before crisis	After crisis	After crisis + transfer	People falling into poverty	Ksh billion	Share of monthly GDP (%)
National	28.9	41.8	40.6	5,775,897	2.03	0.48
Nairobi and Mombasa	14.0	39.3	39.3	1,420,760	0.01	0.00
Other Urban	31.6	47.9	47.9	1,182,252	0.10	0.02
Rural	30.9	40.7	39.2	3,172,885	1.92	0.46

Source: Authors' computation using KIHBS 2015/16

Like the public works programme, the cash transfer programme limits the benefits to only poor households (64%) whose monthly per adult equivalent consumption (welfare) is less than Ksh 3,040. For this reason, households living in urban areas do not qualify. This programme benefits those living in rural areas where majority of the elderly persons live. As such, this programme effectively reduces rural poverty relative to urban poverty. The monthly programme costs account for 0.48% of monthly GDP.

**Table 13: Share of monthly GDP and poverty headcount ratio after crisis plus transfer by type of government policy**

<b>Government Policy Action/Region</b>	<b>National</b>	<b>Nairobi &amp; Mombasa</b>	<b>Other urban</b>	<b>Rural</b>	<b>Share of national monthly GDP</b>
Ex-ante poverty	28.9	14.0	31.6	30.9	-
Elderly only	40.0	35.6	49.8	38.5	0.91
SMEs	40.1	34.1	48.4	39.2	1.30
Public works	40.5	36.5	49.8	39.2	0.65
PAYE	39.5	32.2	47.7	39.1	2.09
Elderly & OVCs	40.8	36.5	50	39.4	0.48

Source: Authors' computation using KIHBS 2015/16

A comparison of the policy interventions indicate that significant resources are required if poverty headcount ratio is to remain at the same level before the on-set of COVID-19. The PAYE policy would cost the Government about 2.09% of monthly GDP and is mainly effective in urban areas where majority of the labour incomes are wages and salaries. Older persons cash transfer is the most effective in the rural areas where most of the elderly live. This means that no one policy is effective on its own, but a combination of these policies is the preferred approach in reducing poverty.

## 4. Conclusion and policy recommendations

### Conclusion

The study examines the effects of COVID-19 on poverty and distribution of well-being, proxied by household consumption expenditure in Kenya. The data used in this analysis is the most recent household survey, the KIHBS 2015/16. The assumptions are informed by the prevailing circumstances and the recent study on the socio-economic cost of COVID-19 by the Kenya National Bureau of Statistics (KNBS) in 2020.

The key findings of the study are summarized as follows:

- (i) Considering the effects of COVID-19, the national poverty headcount ratio is estimated to have increased by 13.0 percentage points from an estimated 28.9% in the pre-COVID-19 period (2019) to 41.9% in 2020. Nearly 6.1 million people, or 13.0% of Kenya's population, are estimated to have fallen into poverty in 2020. In Nairobi and Mombasa where the lockdowns were implemented, the absolute poverty incidence increased from 14.0% before the crisis (2019) to 38.6% after the COVID-19 effects (2020), consequently pushing nearly 1,452,443 people into poverty in 2020.
- (ii) Nationally, about 37.7% of the population (18.0 million people) experienced a loss in their incomes. In Nairobi and Mombasa where lockdowns were implemented, it is estimated that 52.0% of the population or 3.1 million individuals lost their incomes. In other urban areas and rural areas, those affected were 46.1% (3.5 million) and 33.3% (11.4 million) of the population, respectively.
- (iii) The total monthly national income loss is Ksh 49.1 billion out of which Ksh 30.8 billion is from labour income, Ksh 5.0 billion from remittances and Ksh 1.0 billion from rent. The other lost income (about Ksh 12.3 billion) is from other sources of household income such as gifts, pensions, own consumption incomes and other non-regular incomes.
- (iv) The crisis affected all income earners across the income distribution. However, for Nairobi and Mombasa, the most affected are the lower and middle income.

In other urban areas, the most affected were in the middle deciles. However, in rural areas, the effect increases with income. This shows that the low and middle income earners in urban areas were hit harder by the crisis mainly because they rely on industries that were most affected by lockdowns and closure of firms.

- (v) The poverty gap (the average shortfall of the poor population from the poverty line) worsened between 2015/16 and 2019 from 7.7% to 8.0% (KNBS, 2018b). The COVID-19 crisis contributed to a further increase in the poverty gap to 16.9% in 2020, thereby increasing the cost of eliminating poverty. This means that some people who were previously poor fell into deeper poverty while some who were previously non-poor became poor.
- (vi) Inequality has declined over time. At the national level, the Gini coefficient was estimated at 0.404 in 2015/2016 and 0.391 in 2019 before the crisis but worsened to 0.402 in 2020 after incorporating the effects of the pandemic. Nairobi and Mombasa experienced the highest increase from 0.329 before crisis to 0.468 after crisis. This means that the gap between the poor and the rich widened.
- (vii) Policy simulation scenarios were conducted to ascertain the fiscal costs of mitigating the effects of the pandemic and the poverty changes. The key messages emerging are as follows:
  - The cost of keeping poverty unchanged (scenario 1) is huge, at approximately Ksh 26 billion or 6.3% of national monthly GDP.
  - Targeted transfers to only households with individuals aged 60 years and above (scenario 2) effectively reduces the severity of poverty but leaves many people falling into poverty after crisis; that is, 'new poor' are 5.5 million.
  - The tax incentives to MSEs (scenario 3) and individual income tax (scenario 5) cost 1.30% and 2.09% of national monthly GDP to reduce poverty. However, more people become poor after crisis in scenario 3 (5.5 million people) than scenario 5 (5.4 million people).
  - The public works programme and the cash transfer to extreme poor households living with elderly and OVCs are the least effective given the target population is small.
  - The simulations indicate that tax relief policy interventions are more effective in alleviating urban poverty while cash transfers to the vulnerable poor are more effective in rural areas.

## Policy recommendations

In support of short-term recovery from poverty and future response to such crisis, no one policy is effective on its own but a combination of these policies is the preferred approach in reducing poverty. This study recommends the following:

- **Direct transfers to the poor**

The State Department for Social Protection could solicit more funding from both Government and other stakeholders to support a direct monthly transfer targeting only poor households (those below the national poverty line). This entails having a supplementary budget to cushion the poor from the devastating effects of COVID-19. This approach may be supplemented by the effects from reduced VAT and the already instituted economic stimulus package intended to economically empower the common person.

- **Tax reliefs for wage earners and business enterprises**

The Government needs to sustain the already instituted tax reliefs for wage earners and Small and Medium Enterprises (SMEs) to aid households and enterprises, particularly those in urban areas, to re-bounce to their welfare levels pre-COVID-19. This should, however, not be indefinite given other government priorities, but it can be revised once the economy re-bounds.

- **Easing restrictions on lockdown**

There is need for the Government to ease restrictions for a faster re-bounce of economic activities especially in sectors most affected by the movement restrictions. Major towns that are the main economic engines of the country stand to spur the recovery plan given the significant interconnectedness. This could be done while observing other guidelines to control the spread of the virus as directed by the Ministry of Health.

- **Encourage a flexible working policy**

Encourage both public and private sector to embrace a flexible working policy to the extent possible to cushion households from loss of incomes particularly for those workers who are laid off or working on half salary.

## Notes

1. Government of Kenya (2020). Ministry of Transport, Infrastructure, Housing and Urban Development: State Department of Housing and Urban Development. Accessed from: <https://housingandurban.go.ke/national-hygiene-programme-kazi-mtaani/>

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# Annex

## Annex 1: Expected level of impact of COVID-19 pandemic in Kenya by industry/sector

Industry/ Sector	Description (or sector)	Expected effects of lockdowns, curfews and social distancing requirements	Estimate of proportion of income loss	Risk (High/moderate/minimal/None)
Agriculture, forestry and fishing	• Agriculture, forestry and fishing safe	<ul style="list-style-type: none"> <li>• Low effects of spillovers</li> <li>• Farming activities are majorly in rural areas, which were not affected by lockdowns and they are also in essential sectors, so are exempted from most restrictions</li> <li>• Reduced trading volumes due to closure of restaurants and food services</li> </ul>	Less than 10% loss of income	Minimal
	• Horticulture/flowers	<ul style="list-style-type: none"> <li>• Horticulture/flowers have recorded layoff of workers and closure of farms</li> <li>• Closure and lay-offs attributed to ban of international travels given most of the flowers and other horticultural products are exported to Europe</li> </ul>	About 70% loss of income	High
Mining and quarrying	• Mining such as extraction of crude petroleum and natural gas; metal ores; quarrying and other support activities	• Mining and quarrying operations may have been affected to a small extent given most of such activities happen outside counties that were under lockdown	Less than 5% loss of income	Minimal
Manufacturing	• Manufacture of food products; beverages; tobacco products; pharmaceuticals, medicinal chemical and botanical products	<ul style="list-style-type: none"> <li>• Food processing, and medicines exempted, as considered essential</li> <li>• Addictive products such as tobacco were still being processed for consumers hence considered safe</li> </ul>	Safe, no loss of income	None

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**Annex 1 Continued**

<b>Industry/ Sector</b>	<b>Description (or sector)</b>	<b>Expected effects of lockdowns, curfews and social distancing requirements</b>	<b>Estimate of proportion of income loss</b>	<b>Risk (High/ moderate/ minimal/ None)</b>
	<ul style="list-style-type: none"> <li>• Other industrial manufacturing such as textiles, furniture, plastics, metal, motor vehicles, electrical equipment, printing, petroleum and repair and installation of machinery and equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Movement restrictions, night curfews and requirements for social distancing have affected operations of most manufacturing firms</li> <li>• Non-food producing companies closed during lockdown due to low demand for products; movement restrictions affecting trade activities including imports and exports; night curfews and requirements for social distancing leading to fewer working hours</li> <li>• Some companies/firms have had to lay off employees especially casual workers</li> <li>• Factories face mandatory compliance with COVID-19 regulations before full operation</li> </ul>	About 30% loss of income	High
Utilities	<ul style="list-style-type: none"> <li>• Electricity, gas, steam and air conditioning supply</li> </ul>	<ul style="list-style-type: none"> <li>• These are majorly essential services and products hence were minimally affected by lockdown restrictions</li> </ul>	Safe, no loss of income	
	<ul style="list-style-type: none"> <li>• Water supply; sewerage, waste management and remediation activities and other waste management services</li> </ul>	<ul style="list-style-type: none"> <li>• These are majorly essential services hence were not affected by lockdown restrictions</li> </ul>	Safe, no loss of income	None
Construction	<ul style="list-style-type: none"> <li>• Construction of buildings; Civil engineering; and Specialized construction activities</li> </ul>	<ul style="list-style-type: none"> <li>• Movement restrictions, night curfews and requirements for social distancing have affected operations of most construction activities</li> <li>• Construction sites closed, including most public works</li> <li>• Workforce reduced majorly laying off casual workers</li> </ul>	About 55% loss of income	High

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## Annex 1 Continued

Industry/ Sector	Description (or sector)	Expected effects of lockdowns, curfews and social distancing requirements	Estimate of proportion of income loss	Risk (High/ moderate/ minimal/ None)
Wholesale and retail trade	<ul style="list-style-type: none"> <li>• Agriculture and food related items</li> <li>• Pharmaceutical and toiletries</li> </ul>	<ul style="list-style-type: none"> <li>• Retailers of essential goods exempted, but with limited daily trading times due to night curfews</li> <li>• Transporters of essential goods allowed to move products even during curfew times</li> <li>• Social distancing restrictions may have affected operations of some markets. Some public markets were even closed</li> <li>• Reduced customer numbers and trade volumes</li> <li>• However, it is expected food being essential items people still purchased most of their food items during the day</li> </ul>	About 20% loss of income	Moderate
	<ul style="list-style-type: none"> <li>• Other wholesale and retail trade of non-food items such as household goods, textiles, clothing and footwear, music and video recordings, books and stationary, furniture, plastics, metal, motor vehicles, electrical equipment, printing, petroleum and repair of motor vehicles and motorcycles</li> </ul>	<ul style="list-style-type: none"> <li>• Affected by reduction in demand for non-food items especially those considered non-essential</li> </ul>	About 70% loss of income	High
Transport and storage	<ul style="list-style-type: none"> <li>• Land, transport via pipelines and water transport</li> </ul>	<ul style="list-style-type: none"> <li>• Transport via pipelines not affected</li> <li>• Land and water transport has been slightly affected due to lockdown of some counties especially Nairobi and Mombasa and enforcement of night curfew affecting travel to different parts of the country</li> <li>• Requirements for social distancing requiring public transport vehicles to carry less people and workers in different sectors to work from home have affected incomes of the operators</li> <li>• However, operators of most public transport raised fares hence reducing income losses</li> <li>• Nairobi-Mombasa railway transport (SGR) put on hold</li> </ul>	About 40% loss of income	High

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**Annex 1 Continued**

<b>Industry/ Sector</b>	<b>Description (or sector)</b>	<b>Expected effects of lockdowns, curfews and social distancing requirements</b>	<b>Estimate of proportion of income loss</b>	<b>Risk (High/ moderate/ minimal/ None)</b>
	• Passenger air transport	<ul style="list-style-type: none"> <li>• Due to closure of domestic and foreign passenger flights most employees have been laid off or asked to proceed in unpaid/ low pay leave</li> <li>• However, several permanent employees were still on payroll</li> <li>• However, cargo and freight transport exempted, as essential</li> </ul>	About 55% loss of income	High
	• Storage	<ul style="list-style-type: none"> <li>• Warehousing, storage, cargo handling and support activities for transportation largely unaffected by restrictions as wholesalers leasing of go-downs, and transit vehicles and cargo planes were in operation</li> </ul>	Less than 5% loss of income	
Accommodation and food services	• Accommodation, hotels and food services	<ul style="list-style-type: none"> <li>• Accommodation and food services have downsized their operations and others have closed altogether</li> <li>• Hotels, restaurant, cafés, clubs and bars closed, apart from take-away foods</li> <li>• Limited delivery options for food or other products</li> <li>• High reliance on tourism sector, which virtually stopped since March affected accommodation and food services</li> <li>• Reports indicate nearly all accommodation activities were closed as COVID-19 hit but some workers (especially of large establishments) continued to get wages in April and May. Some establishments were used as containment/ quarantine areas and needed workers</li> </ul>	About 75% loss of income	High

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## Annex 1 Continued

Industry/ Sector	Description (or sector)	Expected effects of lockdowns, curfews and social distancing requirements	Estimate of proportion of income loss	Risk (High/ moderate/ minimal/ None)
Information and Communication Technology (ICT)	<ul style="list-style-type: none"> <li>• Publishing activities</li> <li>• Motion picture, video and television programme production, sound recording and music publishing activities</li> <li>• Programming and broadcasting activities</li> <li>• Telecommunications</li> <li>• Computer programming, consultancy and related activities</li> <li>• Information service activities</li> </ul>	<ul style="list-style-type: none"> <li>• With working from home directives by most employers, demand for ICT services such as internet services and computer related appliances has risen</li> <li>• Demand media production of audio and videos may have declined to a small extent However, artists and comedians are still processing such material to upload on social sites such as YouTube</li> <li>• Some employees of television and radio stations have been laid off/ incomes reduced by employers</li> </ul>	Safe, no loss of income	None
Financial and insurance activities	<ul style="list-style-type: none"> <li>• Financial service activities, except insurance and pension funding</li> <li>• Insurance, reinsurance and pension funding, except compulsory social security</li> <li>• Activities auxiliary to financial services and insurance activities</li> </ul>	<ul style="list-style-type: none"> <li>• Financial institutions such as banks continued to operate though for lesser hours and majority of the services being through digital platforms</li> <li>• Most employees still employed</li> <li>• Transactions volume decreased attributable to lost incomes in other sectors; there are lower or delayed client loan repayments</li> </ul>	Less than 5% loss of income	Minimal
Real estate activities	<ul style="list-style-type: none"> <li>• Real estate activities with own or leased property</li> <li>• Real estate activities on a fee or contract basis</li> </ul>	<ul style="list-style-type: none"> <li>• Affected by risk aversion among other factors; as a result investors lowered their investments in real estates</li> <li>• Some landlords lowered rent rates but most continued to charge the same rates</li> </ul>	About 60% loss of income	High
Professional, scientific and technical activities	<ul style="list-style-type: none"> <li>• Legal and accounting activities</li> <li>• Activities of head offices; management consultancy activities</li> <li>• Architectural and engineering activities; technical testing and analysis</li> <li>• Scientific research and development</li> <li>• Advertising and market research</li> <li>• Other professional, scientific and technical activities</li> </ul>	<ul style="list-style-type: none"> <li>• Most are still operational though encouraging working virtually from home such as legal and accounting services</li> <li>• Activities involving in-person field visits affected such as agricultural officers and engineers</li> <li>• Consultancy in professional, scientific and technical activities declined slightly</li> </ul>	Less than 5% loss of income	Minimal

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**Annex 1 Continued**

<b>Industry/ Sector</b>	<b>Description (or sector)</b>	<b>Expected effects of lockdowns, curfews and social distancing requirements</b>	<b>Estimate of proportion of income loss</b>	<b>Risk (High/ moderate/ minimal/ None)</b>
Administrative and support service activities	<ul style="list-style-type: none"> <li>• Security and investigation activities</li> <li>• Services to buildings and landscape activities</li> <li>• Office administrative, office support and other business support activities</li> </ul>	<ul style="list-style-type: none"> <li>• Security services and selected employees in office administrative support considered essential exempted</li> </ul>	Less than 5% loss of income	Minimal
	<ul style="list-style-type: none"> <li>• Rental and leasing activities</li> <li>• Employment activities -placement agencies</li> <li>• Travel agency, tour operator, reservation service and related activities</li> </ul>	<ul style="list-style-type: none"> <li>• International travel bans and local restrictions on movement due to lockdowns and night curfews affected the tourism and out of the country employment placement agencies</li> <li>• Tourist sites closed</li> <li>• Most employees in travel agencies and employment placement agencies laid-off or sent home on unpaid or low pay leave</li> </ul>	About 30% loss of income	High
Public administration and defence; compulsory social security	<ul style="list-style-type: none"> <li>• Public administration and defence; compulsory social security</li> </ul>	<ul style="list-style-type: none"> <li>• Public services and agencies remain open, but most staff working virtually from home</li> <li>• Incomes not much affected (but allowances such as per diems were affected)</li> <li>• Police and security services and selected employees considered essential exempted</li> </ul>	Safe, no loss of income	None
Education	<ul style="list-style-type: none"> <li>• Public sector education</li> </ul>	<ul style="list-style-type: none"> <li>• All learning institutions closed indefinitely and online learning has begun in some schools</li> <li>• Share of those employed in public education sector was about 55% in KIHBS 2015/16 (unweighted)</li> <li>• Government employees such as teachers continued to earn their incomes</li> <li>• Only school management employees in public schools are affected</li> </ul>	Less than 5% loss of income	Minimal

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## Annex 1 Continued

Industry/ Sector	Description (or sector)	Expected effects of lockdowns, curfews and social distancing requirements	Estimate of proportion of income loss	Risk (High/ moderate/ minimal/ None)
	• Private sector education	<ul style="list-style-type: none"> <li>• All learning institutions closed indefinitely and online learning has begun in some schools</li> <li>• Private sector is expected to be larger in Nairobi and Mombasa. But not all private schools may have laid off workers or lowered their incomes</li> <li>• However, incomes of majority of teachers especially in private primary and secondary schools affected</li> </ul>	About 55% loss of income	High
Health	• Human health and social work activities	<ul style="list-style-type: none"> <li>• Health services considered essential hence exempted for restrictions</li> <li>• People reduce visits to health facilities for fear of contracting COVID-19 and the stigma associated with COVID-19 symptoms</li> <li>• Home-based care and consultations with private doctors rise</li> <li>• With the rising number of COVID patients, elective operations reduced</li> </ul>	Safe, no loss of income	None
Arts, entertainment and recreation	• Gambling and betting activities	<ul style="list-style-type: none"> <li>• Sports and outdoor entertainment banned</li> <li>• Casinos closed</li> <li>• Gambling and betting activities declined significantly</li> </ul>	About 80% loss of income	High
	• Creative, arts and entertainment activities	<ul style="list-style-type: none"> <li>• Sports and outdoor entertainment such as live performance by artists banned</li> <li>• Clubs and tourist sites closed</li> <li>• Some activities operating, such as newspapers, radio and television</li> </ul>	About 45% loss of income	High
	• Cultural activities such as libraries, archives and museums	<ul style="list-style-type: none"> <li>• Libraries, archives and museums still in operation; most employees are redundant though some are still in employment</li> <li>• Tourism low due to ban of international travel and lockdowns within the country affecting tourist sites such as museums</li> <li>• Other cultural activities attracting huge gatherings banned</li> </ul>	About 20% loss of income	Moderate

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**Annex 1 Continued**

Industry/ Sector	Description (or sector)	Expected effects of lockdowns, curfews and social distancing requirements	Estimate of proportion of income loss	Risk (High/ moderate/ minimal/ None)
	<ul style="list-style-type: none"> <li>• Sports activities and amusement and recreation activities</li> </ul>	<ul style="list-style-type: none"> <li>• Sports and outdoor entertainment such as live performance by artists banned</li> <li>• Sports personalities getting financial support from sponsors and actors in the sporting industry</li> </ul>	About 45% loss of income	High
Other service activities	<ul style="list-style-type: none"> <li>• Activities of membership organizations such as business, employers and professional membership organizations</li> <li>• Activities of trade unions</li> </ul>	<ul style="list-style-type: none"> <li>• In-person religious, clubs and political gatherings banned</li> <li>• Trade unions and professional membership organizations activities still active; employees still in employment</li> </ul>	About 10% loss of income	Minimal
	<ul style="list-style-type: none"> <li>• Activities of other membership organizations</li> <li>• Activities of religious organizations</li> <li>• Activities of political organizations</li> <li>• Activities of other membership organizations n.e.c.</li> </ul>	<ul style="list-style-type: none"> <li>• In-person religious, clubs and political gatherings banned</li> <li>• Incomes of those employed in such institutions reduced</li> </ul>	About 25% loss of income	Moderate
	<ul style="list-style-type: none"> <li>• Repair of computers and consumer electronics and household goods such as footwear and furniture</li> </ul>	<ul style="list-style-type: none"> <li>• With working from home directives by most employers, demand for ICT services such as repair of computer-related appliances still needed</li> <li>• Demand for repair of household goods such as footwear and furniture may not have changed</li> </ul>	Safe, No loss of income	None
	<ul style="list-style-type: none"> <li>• Washing and (dry-) cleaning of textile and fur products</li> <li>• Hairdressing and other beauty treatment</li> <li>• Funeral and related activities</li> <li>• Other personal service activities n.e.c</li> </ul>	<ul style="list-style-type: none"> <li>• Households are shifting to performing most of the chores by themselves instead of employing others to do it</li> <li>• Less customers for those who initially performed these tasks, for instance domestic workers have lost jobs hairdressers and other beauty treatments because they are earmarked as high risk</li> <li>• Restrictions on funeral and related activities for instance time spent for burials and the number of people allowed to attend a funeral; lowered incomes of those employed in such firms</li> </ul>	About 45% loss of income	High

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**Annex 1 Continued**

<b>Industry/ Sector</b>	<b>Description (or sector)</b>	<b>Expected effects of lockdowns, curfews and social distancing requirements</b>	<b>Estimate of proportion of income loss</b>	<b>Risk (High/ moderate/ minimal/ None)</b>
	<ul style="list-style-type: none"> <li>• Activities of households as employers of domestic personnel</li> <li>• Undifferentiated goods - and services-producing activities of private households, e.g. casual labourers</li> </ul>	<ul style="list-style-type: none"> <li>• May have been affected by restrictions in movement</li> <li>• Households are performing some of the domestic chores themselves instead of hiring people, for instance domestic workers have lost their jobs</li> </ul>	About 50% loss of income	High
	<ul style="list-style-type: none"> <li>• Activities of extraterritorial organizations and bodies</li> </ul>	<ul style="list-style-type: none"> <li>• Being international formal institutions, most are still operational though encouraging working virtually from home</li> </ul>	Safe, no loss of income	None
<p>Sources of information to inform authors conceptualization of expected effects of lockdowns, curfews and social distancing requirements on industries/sectors in Kenya</p> <ul style="list-style-type: none"> <li>• Sources: KNBS (2020) Survey on Socio-Economic Impact of COVID-19 on Households (Wave 1 and Wave 2)</li> <li>• Other sources: Newspaper articles, reports by industry/industry associations including: (1) Report on consultative meeting between government and the private sector on COVID-19 containment measures – 27th May 2020</li> </ul>				

Source: Compiled by authors



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