

Monitoring the socio-economic impacts of COVID-19 on Djiboutian households

Results from second wave of survey (September 20-October 18)

December 2020

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EXECUTIVE
SUMMARY



To monitor the rapidly changing economic landscape due to COVID-19, the National Institute of Statistics of Djibouti (INSD), with the technical assistance from the World Bank, conducted a second wave of the COVID phone survey from September 20 to October 18, 2020. Like the first wave fielded in July, this wave drew from a sampling frame consisting of households from the Ministry of Social Affairs and Solidarity's social registry that reported telephone numbers. The sample, consisting of 1,460 complete interviews, combined a panel of households interviewed during the first wave, to which a replacement sample was added to compensate for attrition. The response rate stands at 85 percent nationally and the results are representative of the country's urban population except for the top wealth quintile (richest 20 percent).

Since mid-May, when the lockdown ended, economic activities have been trending back to normal. Around 77 percent of the breadwinners worked the week before the survey, representing a substantial increase from the 59 percent found in the first wave. But the ability to work varies by socioeconomic characteristics. Around 71 percent of workers in informal sector worked the week before the survey compared with 82 and 86 percent in the formal private and public sector, respectively. Some differences also appear by wealth quintile, as 76 percent of breadwinners from the bottom quintile worked in the week before the survey, while 79 percent from the fourth quintile (the fifth quintile not being covered in the survey) did so.

The intensity of economic activities is reverting back to normal. Nationally, the share of breadwinners who worked as usual stood at 73 percent wave 2, rising from 54 percent in wave 1. At the same time, the percentage of breadwinners who worked less than usual declined from 42 to 25 percent. Between the two waves, there seem to be no differences in the ability to work between poor and non-poor.

Working less is associated with a reduction in labor income, and more workers received partial wages in the second wave of the survey compared to the first wave. Among breadwinners who worked to a lesser extent, 50 and 5 percent received partial and full wage, respectively, while 35 percent received no wage. The percentage of breadwinners who received no wage decreased by 9 percentage points; but the share of those receiving a partial wage increased by 13 percentage points. It turns out that the non-poor tend to experience a faster improvement as compared with the poor.

In September/October, basic goods were available to approximately 90 percent of the households. Access to basic goods has also improved since July for nearly all basic goods, and differential access between the non-poor and poor that was observed in wave 1 has disappeared. Nevertheless, the availability of basic medicines has declined, which may be a cause for concern.

In times of COVID-19, households contend with significant challenges regarding access to food, a key element of food insecurity. The survey uncovers that 40 percent of the households are worried about not having enough food due to a lack of economic resources. Many households tend to compromise on food quality, as 42 percent of the households were unable to eat preferred food and ate few kinds of food. But some households faced compromise on food quantity. Around 28 and 14 percent of households cut the size of their meals or skipped meals. However, very few households either went to sleep hungry (6 percent) or a whole day without food (4 percent). The poor tend to experience more food insecurity than the non-poor.

Social protection has come to represent a potentially important support to households. Four and 11 percent of the households received cash transfers and food assistance, respectively, marking a modest drop from 5 and 14 percent respectively in July. Reliance on public assistance seems to go beyond traditional assistance programs, as this contributes to many households' income. For 44 percent of households, fraction or all households' incomes comes from government assistance.

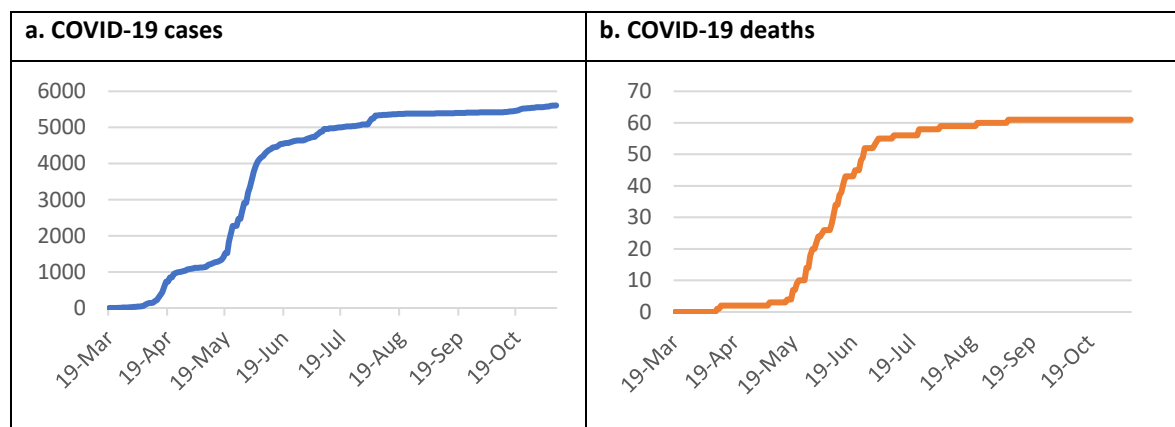
Despite the challenging health and economic context, many households remained optimistic about the future. At the (urban) national level, 55 percent of the households are optimistic about their future, while 10 percent expect that their future will get worse.

INTRODUCTION



Djibouti recorded its first case of COVID-19 on 18 March 2020. Infection reached moderately high transmission peaks between May and June. The rate of disease spread has then slowed. As of November 10, 2020, there are over 5,600 confirmed cases and 61 COVID-19 related deaths.¹ Stakes are high again, at this point in time when the world is preparing to battle a second wave of infection. Since July, cases and deaths related to coronavirus have steadied but there was a slight uptick in October 2020.

Figure 1.1: COVID-19 cases and related deaths in Djibouti



Source: <https://ourworldindata.org/coronavirus>.

Djibouti, like most countries around the world, initiated several policy responses including a lockdown in March that was eventually lifted on May 17, 2020. The potential impacts of the COVID-19 pandemic, including the economic slowdown, are expected to be severe on households' welfare. The first wave of the survey to capture these impacts on household welfare indicated that the pandemic and its related lockdown had negatively affected households. The lockdown not only limited the ability to work, but also restricted household access to basic goods and services. Even though the lockdown was lifted, many countries continue to experience an economic slowdown and a decline in demand.² The survey in wave 2 is meant to have captured these effects.

THE PHONE SURVEY



Months after the end of the lockdown, the question remains as to how the COVID-19 induced perturbations are still affecting households. To understand this question, a second wave of phone survey was fielded to monitor the impacts of COVID-19 on Djiboutian households. This survey was implemented through telephone interviews from September 20 to October 18, 2020 by the National Institute of Statistics of Djibouti (INSD). Like the first wave implemented in July, the second wave drew from a sampling frame consisting of households from the Ministry of Social Affairs and Solidarity's social registry that reported telephone numbers. The second wave sample combined a panel of households interviewed during the first wave in July, to which was added a replacement sample to compensate for attrition.³ The second wave consisted of 1,460 interviewed households with complete information that were representative of the urban population, out of which 1,208 households were also interviewed in the first wave and 252 were added as replacement households. The sampling strategy allows for disaggregation by poverty status⁴ and by three survey domains, being Balbala (476 households), rest of Djibouti City (487 households) and urban areas outside Djibouti City (497 households) (see Box 1). The results

¹ It is important to highlight that these statistics may suffer from bias because testing is far from being universal.

² <https://www.un.org/development/desa/dpad/publication/world-economic-situation-and-prospects-september-2020-briefing-no-141/>

³ For more details on the sampling design, please refer to the survey report from the 1st wave of the COVID phone survey.

⁴ Poverty status variable in the social registry database is based on consumption per capita, which is imputed for each household by the Ministry of Social Affairs and Solidarity (MASS) based on observable characteristics and using the Proxy Means test formula using household budget survey of 2013.

presented in this report are representative of the country's urban population except for the top wealth quintile (richest 20 percent).⁵

The response rate stands at 85.3 percent nationally (Table 2.1). Some differences are observed across locations, with households from districts 1, 2 and 3 of Djibouti City more likely to respond than those from other locations. This response rate is higher than what has been experienced for the first wave (71.4 percent). Successful recontact rate is 84 percent, while the response rate is 92 percent among replacement households. It is also found that attrition is random (see Box 2). Respondents of the survey are individuals who are knowledgeable of the households' daily experience (Table 2.2). While most respondents are either the heads of the household or their spouses, in a few instances their adult children answer the survey. Around 44.4 percent of the respondents are female. The largest share of respondents is aged between 35 and 49 (42.3 percent) followed by those aged below 35 years (28.2 percent). The economic activity and livelihoods of breadwinners are covered in the survey. It is found that breadwinners are more likely to be males (71.1 percent) and are older, on average, than the respondents.⁶

Table 2.1: Response rate

Survey Domain	%	Freq.
Balbala	82.6	476
Rest of Djibouti City	87.1	497
Other urban centers	86.3	487
Replacement Status		
Panel households	84.0	1,208
Replacement households	92.0	252
All	85.3	1,460

Source: Djibouti COVID-19 phone survey, 2nd wave.

Table 2.2: Share of respondents and breadwinners by age and gender

Age	Respondents			Breadwinners		
	Male	Female	All	Male	Female	All
<35	24.1	33.4	28.2	19.4	22.2	20.2
35-49	47.7	35.4	42.3	48.8	39.7	46.2
50-64	20.0	21.7	20.8	23.0	28.8	24.7
65 +	8.2	9.5	8.7	8.7	9.2	8.9

Source: Djibouti COVID-19 phone survey, 2nd wave.

ECONOMIC ACTIVITIES AND LIVELIHOODS



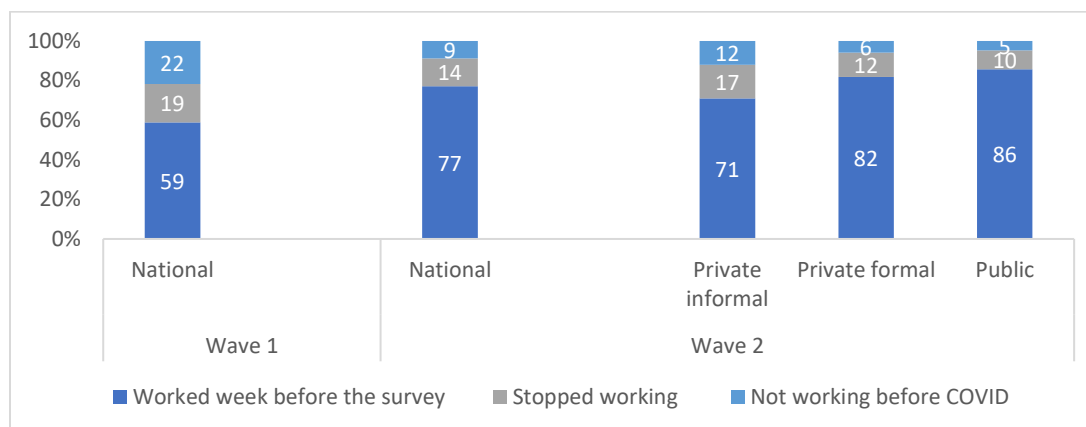
Since mid-May, when the lockdown ended, economic activities have been trending back to normal. The second wave of the COVID phone survey shows that 77 percent of the breadwinners worked the week before the survey (Figure 3.1). This represents a substantial increase from the 59 percent found in the first wave fielded in July. The share of breadwinners who stopped working decreased from 19 to 14 percent. Nevertheless, 14 percent of breadwinners were found to be working before the outbreak in March but were still not working in the week before the survey.

⁵ Restricting the reference data source to the first four quintile is somewhat arbitrary. But this is motivated by discussions with senior officials of the INSD. The unavailability of variables that are not used for calibration but common to both datasets prevents us from running sensitivity analysis around the choice of this cutoff.

⁶ The observation unit differs from one theme to another. In the sections on access, food security and household perception reflect the behavior of the entire household. The economic activity section reflects the situation of the breadwinners and, in some cases, other active members of the household.

Workers from the informal sector are less likely to work than those from the formal sector.⁷ Around 71 percent worked the week before the survey compared with 82 and 86 percent in the formal private and public sector, respectively. While the economic prospects are improving for some workers, informal workers still face a higher likelihood to have stopped working since March or be unemployed (29 percent in wave 2).

Figure 3.1: Status of employment of breadwinners by survey round and sector of economic activity (%)



Source: Authors' calculation based on Djibouti COVID-19 phone survey, 1st and 2nd waves.

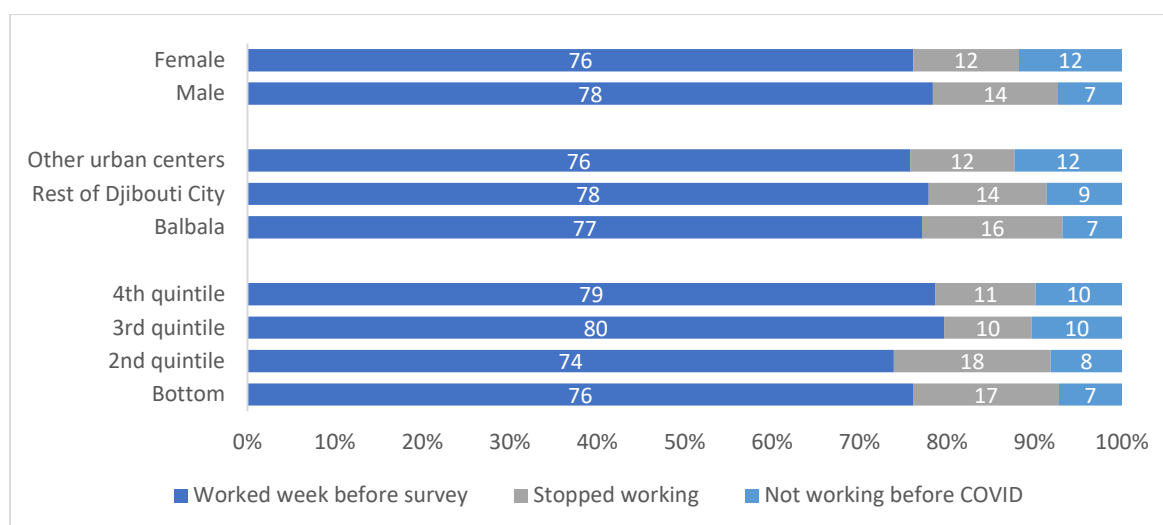
Note: Breadwinners are divided into three categories: 1) those working in the week before the survey, 2) those working before COVID-19 but stopped working in the week before the survey and 3) those that were neither working before COVID-19 nor in the week before the survey.

Some differences appear in the percentage of breadwinners who worked the week before the survey by wealth quintile (Figure 3.2). Around 76 percent of breadwinners from the bottom quintile worked in the week before the survey, while 79 percent from the fourth quintile did so. These differences suggest similarity between the first two quintiles compared to the third and fourth quintiles. Grouping the breadwinners in these two categories helps to uncover a clear wealth gradient in the ability to work; whereby breadwinners from the lower quintiles are slightly less likely to work than those from the upper quintiles. The percentage of breadwinners that worked in the week before the survey, taking on values around 77 percent, is fairly similar across the various geographic areas (Balbala, rest of Djibouti City, and other urban centers). While 78 percent of male breadwinners worked the week before the survey, 76 percent of female breadwinners worked. But work stoppage is more prevalent among males compared to females (14 vs. 12 percent, respectively).

Between the two waves, several transitions have occurred in the employment status of breadwinners (Figure 3.3). While 83 percent of breadwinners who were working in the week before wave 1 (July) were still working in the week before wave 2 of the survey (September/ October), 17 percent of them have stopped working. This shows some job insecurity that either is a feature of the labor market in Djibouti or has been induced by uncertainties related to COVID-19. Around 69 percent of the breadwinners who stopped working in wave 1 (but were working before COVID outbreak in March) have gone back to work, but 31 percent were still not working. Among breadwinners who were neither working before the outbreak of pandemic nor in wave 1, 65 percent were able to work the week before the survey (wave 2), while 35 percent remain in unemployment.

⁷ The informal sector is defined combining information about economic sector of activity (private firms and households), the type of contract (those without any form of contract), whether workers have no pay slip, and whether the employer has no trade register number and holds no modern accounting.

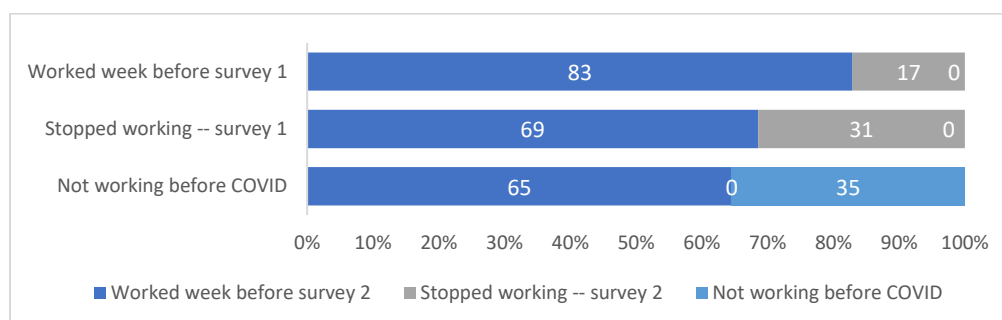
Figure 3.2: Employment status of breadwinners by location and wealth quintile (%)



Source: Authors' calculation based on Djibouti COVID-19 phone survey, 2nd wave.

Notes: Top quintile is not covered in the survey (please refer to Annex for more details on sampling). Breadwinners are divided into three categories: 1) those working in the week before the survey, 2) those working before COVID-19 but stopped working in the week before the survey and 3) those that were neither working before COVID-19 nor in the week before the survey.

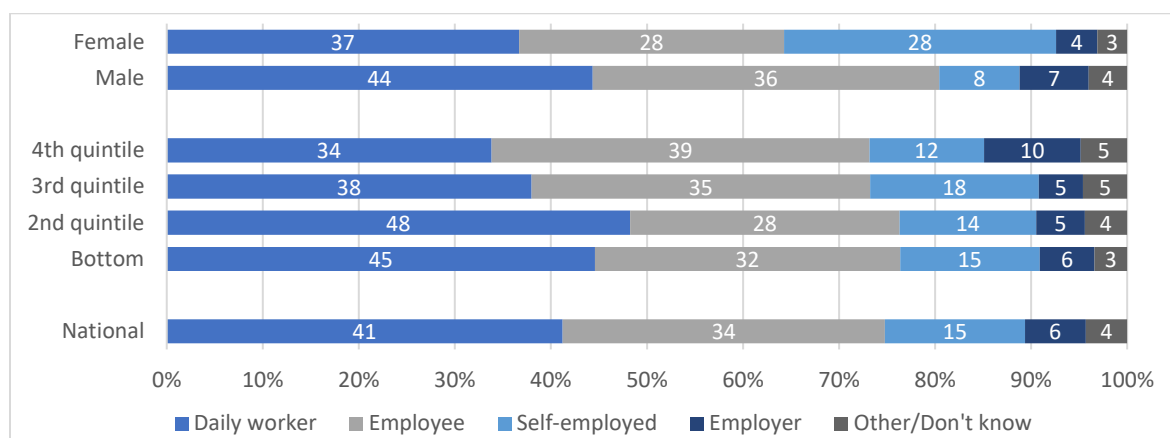
Figure 3.3: Transitions in employment status between survey waves (%)



Source: Authors' calculation based on Djibouti COVID-19 phone survey, 1st and 2nd waves.

The breakdown of professional categories varies by gender and wealth quintile (Figure 3.4). Daily workers are the single largest professional category among breadwinners who worked either the week before the survey or before the pandemic, with their relative share being around 41 percent at the national level. These workers represent 45 and 48 percent among the bottom and second wealth quintiles, respectively, while their share among the top quintile is 34 percent. The proportion of workers who are employees is lower among workers from the bottom quintile. Around 39 percent of workers from the top quintile are employees. Male workers are more likely to be either daily workers, employees, or employers than their female counterparts. Respectively, eight and 28 percent of male and female breadwinners are self-employed. Daily workers and self-employed represent a vulnerable group whose livelihood dependent on their ability to work.

Figure 3.4: Professional category of the breadwinners who were engaged in work either the week before the survey or before the pandemic (%)

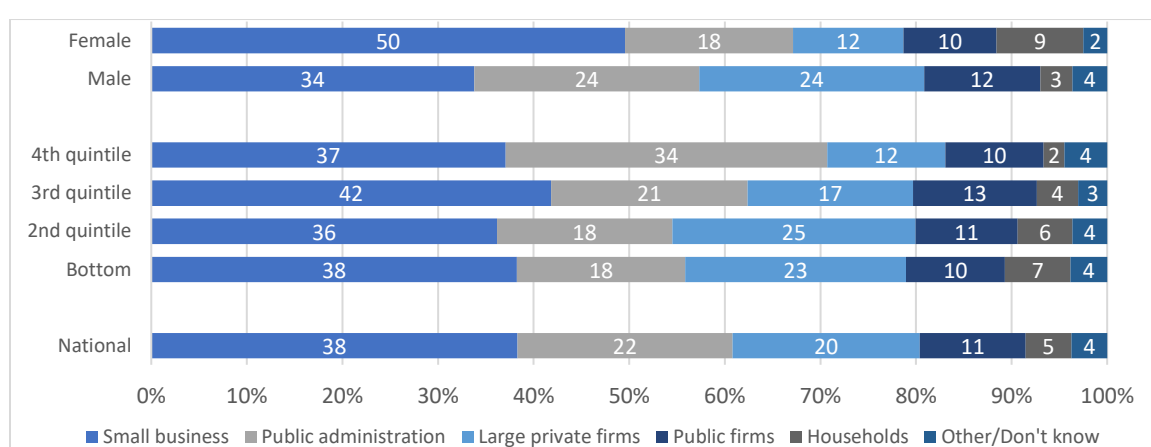


Source: Authors' calculation based on Djibouti COVID-19 phone survey, 2nd wave.

Note: Top quintile is not covered in the survey (please refer to Annex for more details on sampling).

Around 38 percent of the breadwinners either work for or operate small businesses, while 22 and 20 percent have their professional activities with the public administration or large private firms, respectively (Figure 3.5). The relative share of the various sectors of employment varies by wealth quintile. There is a strong gradient in the share of workers in the public administration across quintiles. Respectively, 18 and 34 percent of breadwinners from the bottom and fourth quintiles work for the public administration, in a context where this sector of employment is highly prized. Half of the female breadwinners are active in small businesses compared to 34 percent among male breadwinners. Professional categories intersect with sector in a way that highlights vulnerability of many workers.

Figure 3.5: Sector of employment of breadwinners who were engaged in work either the week before the survey or before the pandemic (%)



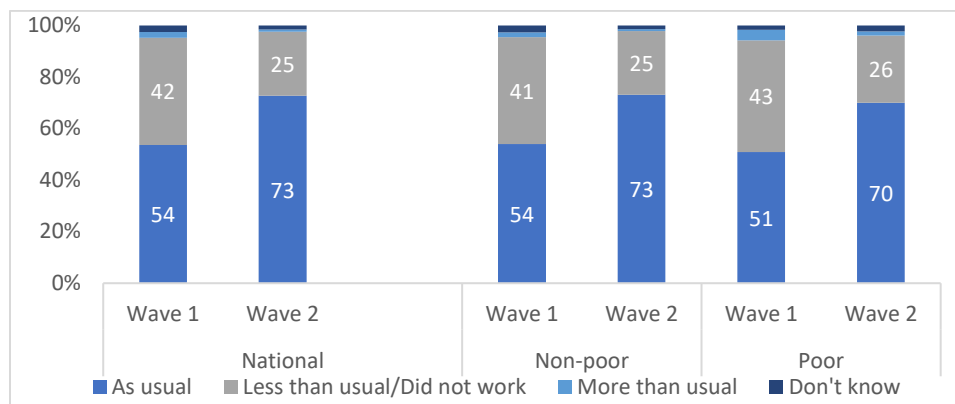
Source: Authors' calculation based on Djibouti COVID-19 phone survey, 2nd wave.

Notes: Top quintile is not covered in the survey (please refer to Annex for more details on sampling). A small business is a sole proprietorship or cooperative; public firms are state owned enterprises.

The intensity of economic activities is reverting back to normal (Figure 3.6). At the national level, the share of breadwinners who worked *as usual* stood at 73 percent in September/October (Wave 2), rising from 54 percent

in July (Wave 1). At the same time, the percentage of breadwinners who worked less than usual has fallen from 42 to 25 percent. Poor and non-poor tend to experience a similar rate of recovery between the two waves of the survey.

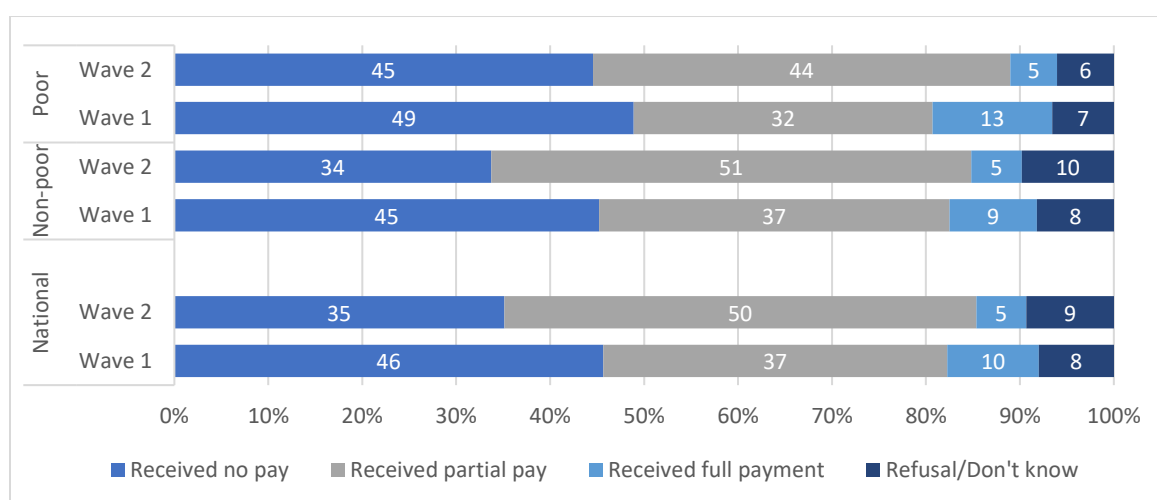
Figure 3.6: Workload of breadwinners who worked in the week before the survey (%)



Source: Authors' calculation based on Djibouti COVID-19 phone survey, 1st and 2nd waves.

Working less is associated with a reduction in labor income, and more workers received partial wages in the second wave of the survey compared to the first wave (Figure 3.7). Among breadwinners who worked to a lesser extent, 50 and 5 percent received partial and full wage, respectively, while 35 percent received no wage. Compared to wave 1, these shares have markedly changed. For example, the percentage of breadwinners who received no wage decreased by 9 percentage points; but the share of those receiving a partial wage increased by 13 percentage points. It is important to note that the share of breadwinners who received their full wages dropped between July and September/October. This might well suggest some erosion in employers' resilience. Similar changes are recorded when the analysis is disaggregated by poverty status. It turns out that the non-poor tend to experience a faster improvement as compared to the poor. The poor were much more likely to not be paid (45 percent) in the second wave as compared to the non-poor (34 percent).

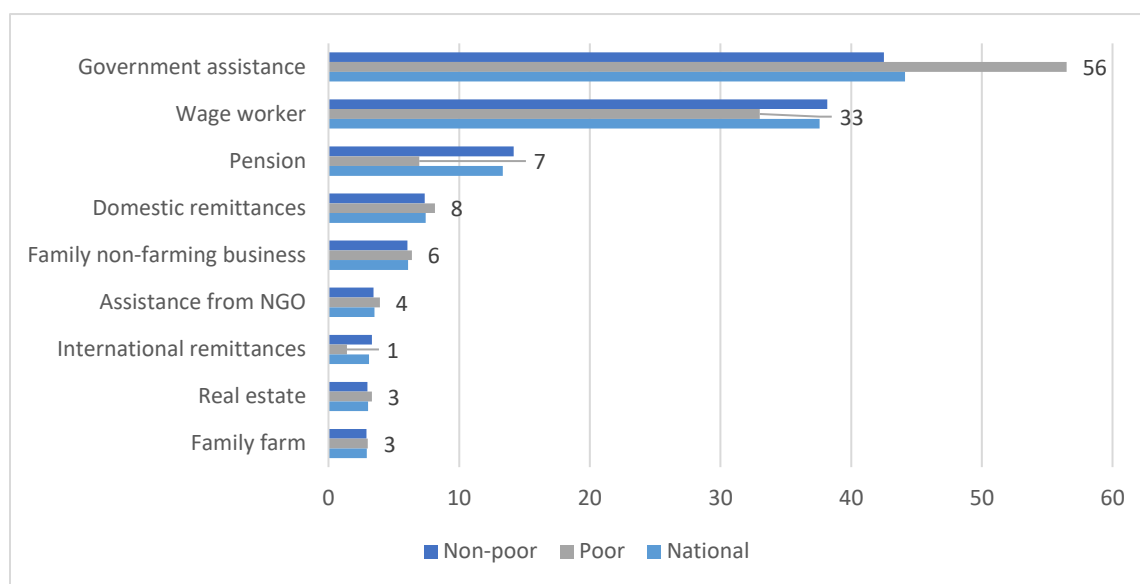
Figure 3.7: Change in labor income among breadwinners who worked less (%)



Source: Authors' calculation based on Djibouti COVID-19 phone survey, 1st and 2nd waves.

Public assistance contributes to many households' income (Figure 3.8). For 44 percent of households, fraction or all households' incomes comes from government assistance. For 56 and 43 percent of poor and non-poor households, respectively, government assistance was reported as a mean to sustain livelihoods. Wage is the second most common source of income, providing means for subsistence for 38 percent of households. Not surprisingly, the poor are less likely to report wages as a source of income than the non-poor. Pensions are reported to be a source of income for 13 percent of households. Remittances, both domestic and international, provide means of subsistence to around 10 percent of households.

Figure 3.8: Sources of income



Source: Authors' calculation based on Djibouti COVID-19 phone survey, 2nd wave.

Note: The cumulative percentage may exceed 100 percent, as households can receive income from multiple sources.

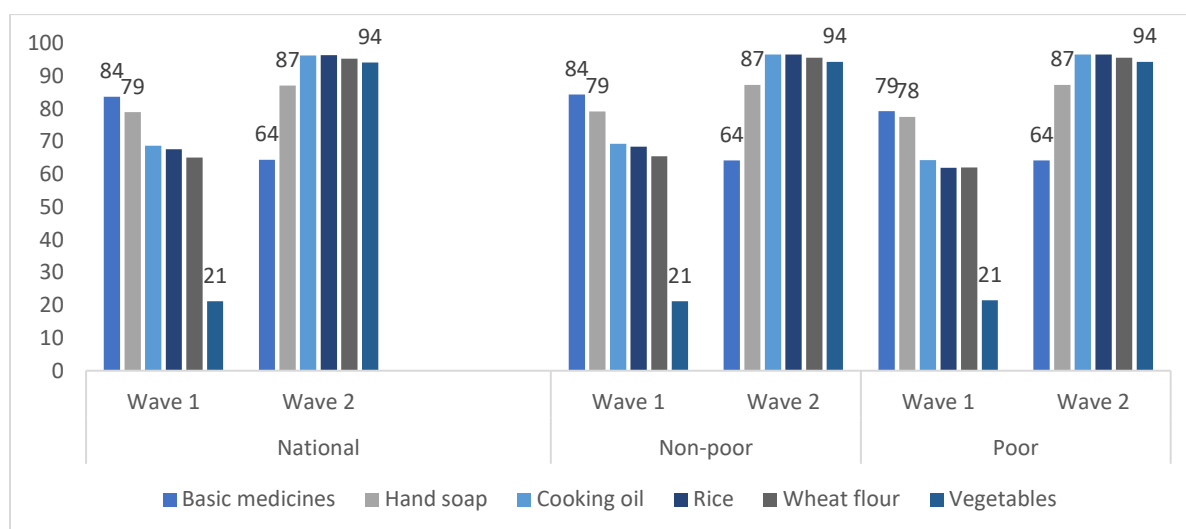
ACCESS TO BASIC GOODS



In September/October, basic goods were available to most households (Figure 4.1). The percentage of households that were able to access major food staples such as cooking oil, rice, wheat flour and vegetables is in excess of 90 percent. But relatively high proportions of households, 36 and 13 percent, respectively, reported not having access to basic medicines and hand soap. The majority cited rising prices and the fact that they could not afford these products as the reason. The non-poor and poor experience the availability of basic goods in similar proportions. Access to basic goods has improved since July for nearly all basic goods, and differential access between the non-poor and poor that was observed in wave 1 has vanished. Nevertheless, the availability of basic medicines has declined which may be a cause for concern.

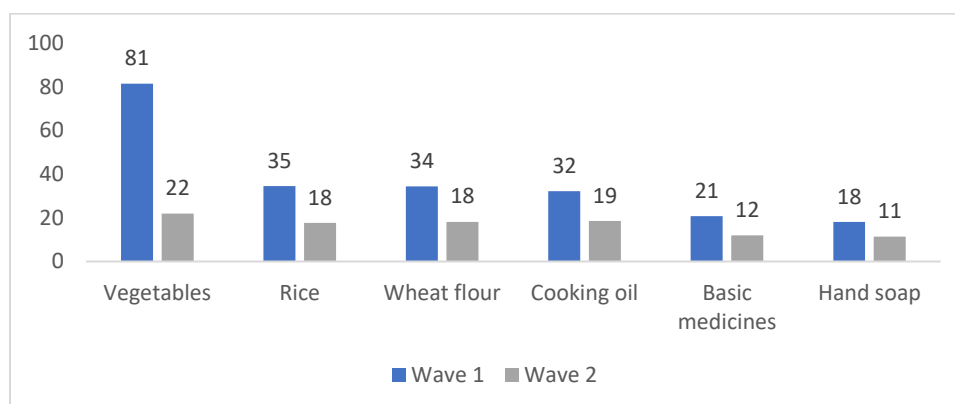
Fewer households experienced an increase in prices of basic goods in September/October than in July, when the survey was first fielded (Figure 4.2). While 81 and 18 percent of households reported a rise in the prices of vegetables and hand soaps, respectively, in wave 1, only 22 and 11 percent of households voiced the same concern in wave 2 of the survey. There are no noticeable differences by poverty status with respect to facing higher product prices (not shown in the figure).

Figure 4.1: Availability of selected goods, by poverty status and survey wave (%)



Source: Authors' calculation based on Djibouti COVID-19 phone survey, 1st and 2nd waves.

Figure 4.2: Percentage of households that reported an increase in price



Source: Authors' calculation based on Djibouti COVID-19 phone survey, 1st and 2nd waves.

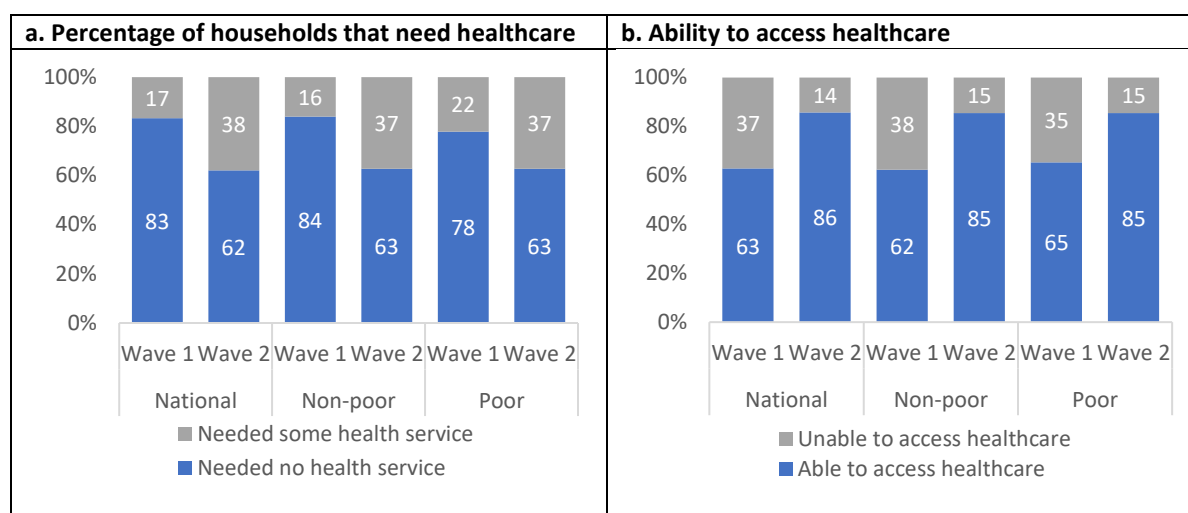
ACCESS TO SERVICES



In September/October (wave 2), 38 percent of the surveyed households needed some healthcare, while a much smaller percentage needed health services in July (Figure 5.2). The percentage of households reporting a need to access healthcare does not vary by poverty status in wave 2, contrasting with differences between non-poor and poor recorded in wave 1. Services in charge of chronic diseases (15 percent), emergencies (15 percent), and immunization (14 percent) are among the ones that are most needed. Most households were able to access healthcare when in need. Among households that needed healthcare, 14 percent were not able to access healthcare. This share is the same between poor and non-poor. A higher percentage of households were able to access to healthcare when needed (86 percent) in wave 2 as compared to July, when it stood at 63 percent.

In terms of access to education, a majority of children were able to go back to school in September. Among the few who did not go to school, most cited that the schools were not prepared to receive students as the main reason.

Figure 5.1: Access to healthcare



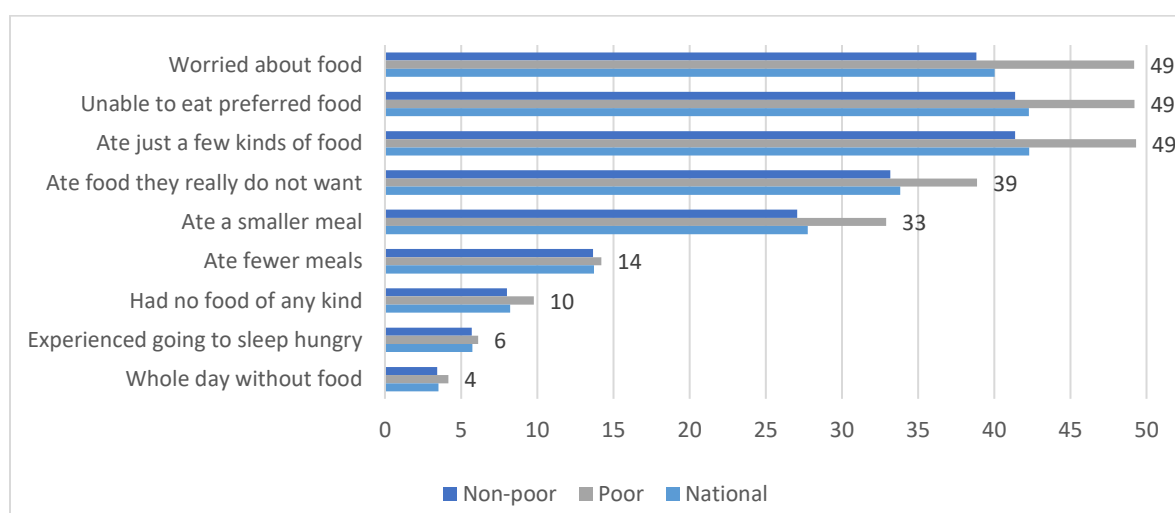
Source: Authors' calculation based on Djibouti COVID-19 phone survey, 1st and 2nd waves.

FOOD INSECURITY



In times of COVID-19, households contend with significant challenges regarding access to food, a key element of food insecurity. The second wave of the COVID-19 phone survey covers food insecurity, using the set of questions designed to form the Household Food Insecurity Access Scale (HFIAS).⁸ This indicator draws on a set of questions that explores three domains of food insecurity: worry about food, compromise on food quality, and compromise on food quantity. Analysis of the responses given to each HFIAS question separately, reveals that 40 percent of the households are worried about not having enough food due to a lack of economic resources (Figure 6.1). Many households tend to compromise on food quality, as 42 percent of the households were unable to eat preferred food and ate few kinds of food. Moderate and severe food insecurity are further reported by some households. Respectively, 28 and 14 percent of the households cut the size of their meals or skipped meals. However, very few households either went to sleep hungry (6 percent) or a whole day without food (4 percent). The poor tend to experience more food insecurity than the non-poor.

Figure 6.1: Percentage of households by food insecurity items



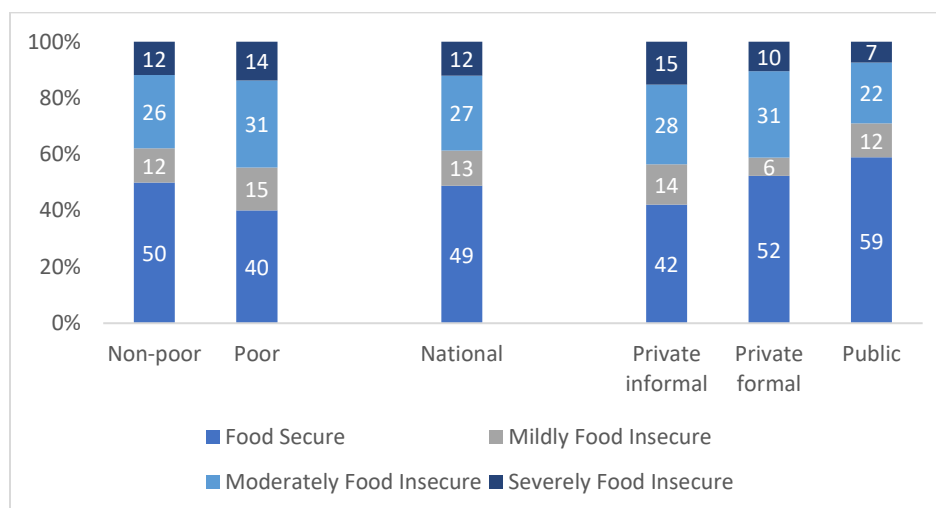
⁸ Source: https://www.fantaproject.org/sites/default/files/resources/HFIAS_ENG_v3_Aug07.pdf

Source: Authors' calculation based on Djibouti COVID-19 phone survey, 2nd wave.

The various items are aggregated to produce an experience-based scale, as answers to individual questions alone are not enough for classification. When using the HFIAS as a measurement scale, the three domains are interpreted as contributing to a single, increasing scale of severity. The total score produced by assigning different points to each of the questions depending on the reported frequency of occurrence, allows classifying households in three classes of “food secure (or only mildly food insecure)”, “moderately food insecure” and “severely food insecure”.

The Household Food Insecurity Access Scale indicates that 12 percent of the households are severely food insecure, while 27 percent are moderately insecure (Figure 6.2). Because the survey was fielded towards the end of the hot season, the level of food insecurity might well be lower compared with the first wave conducted during the hot and dry season. Poor households are more likely to be food insecure than their non-poor counterparts. Gender (of breadwinners) differences appear to be mostly negligible (not shown in the figure). Households with breadwinners working in the formal (private formal and public) sector tend to be more food secure than their counterparts from the informal sector.

Figure 6.2: Distribution of households by severity of food (in)security by poverty status and economic sector of economic activity (%)



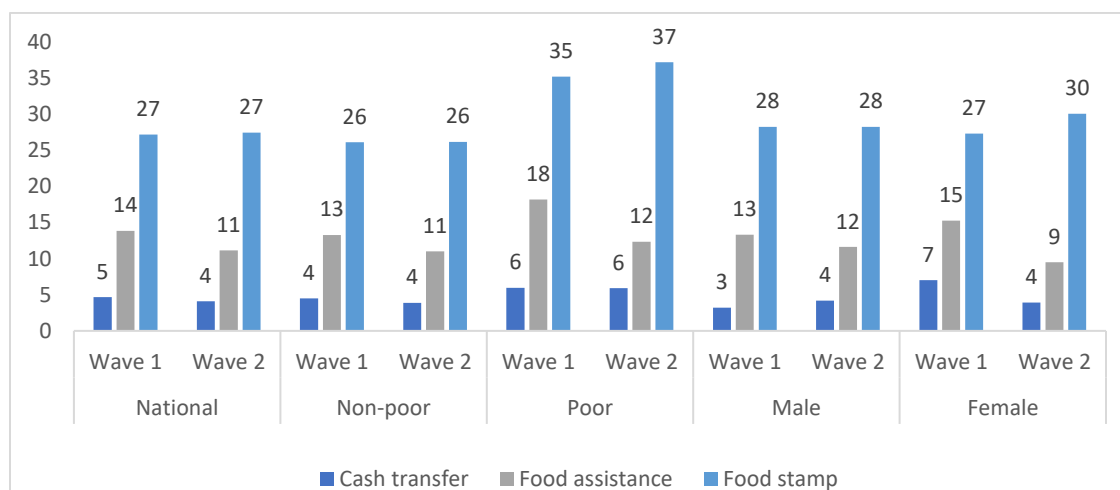
Source: Authors' calculation based on Djibouti COVID-19 phone survey, 2nd wave.

SAFETY NETS



Social protection has come to represent a potentially important support to households; this includes cash transfers, food assistance, and food stamp (Figure 7.1). Respectively 4 and 11 percent of the households received cash transfers and food assistance, marking a modest drop from respectively 5 and 14 percent in July. The percentage that had benefited from food stamp remained unchanged between the two waves, standing at 27 percent. There are small differences between male and female breadwinners and between non-poor and poor with respect to the reception of public assistance. Support to households is mainly provided by the government, NGO's and family networks. Thus, it seems that the government continues to support households through various measures.

Figure 7.1: Percentage of households that received assistance



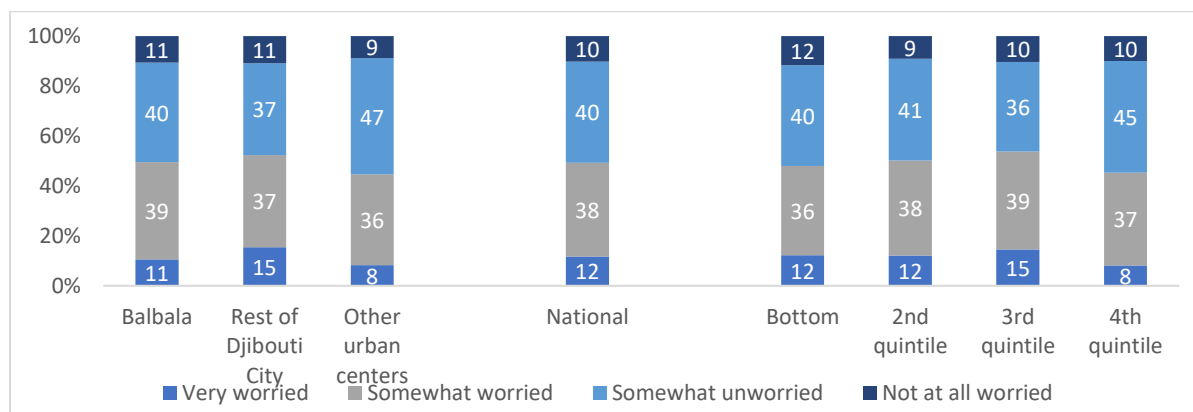
Source: Authors' calculation based on Djibouti COVID-19 phone survey, 1st and 2nd waves.

SUBJECTIVE WELFARE



About half of all households experience some level of worry related to the impact of COVID-19 on their wellbeing: 12 percent are very worried about the COVID-19 impacts and 38 percent are somewhat worried (Figure 8.1). The COVID-19 survey asked whether respondents are worried about the impacts of COVID-19 on households. It turns out that few households expressed serious worries (12 percent) while more than a third expressed some level of concern. Most households are somewhat unworried or worried. There are slight variations by quintile or geographic locations.

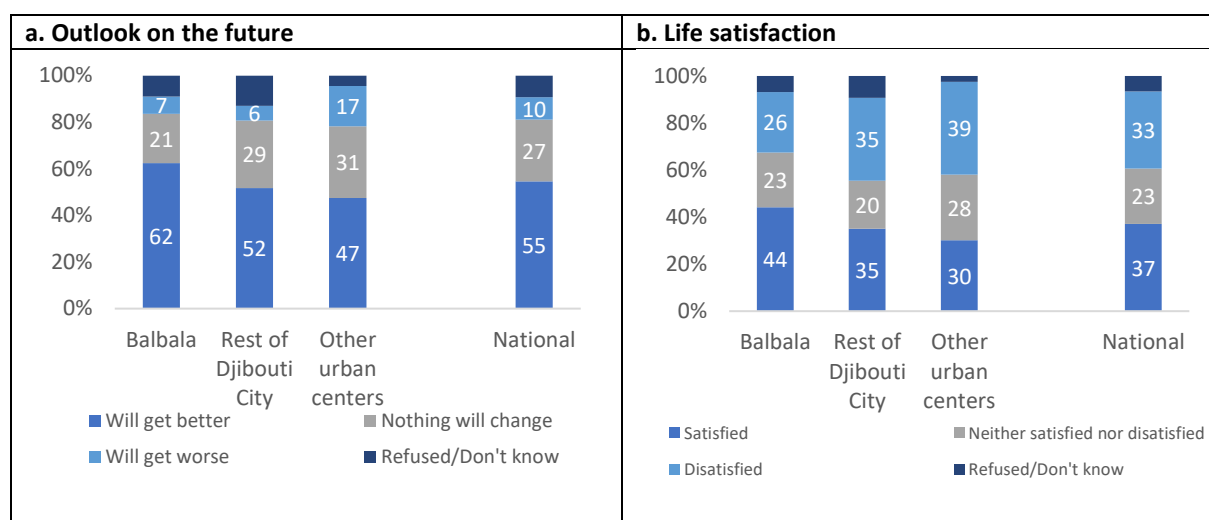
Figure 8.1: Concern about the impacts of COVID-19



Source: Authors' calculation based on Djibouti COVID-19 phone survey, 2nd wave.

At the (urban) national level, 55 percent of the households are optimistic about their future, while 10 percent expect that their future will get worse (Figure 8.2). Relatively fewer households from the bottom quintile (52 percent) than those from the fourth quintile (58 percent) are optimistic about the future. Optimism is higher among households in Balbala compared to those from any other region. Respondents are also asked about their current life satisfaction. Among Djibouti's urban households, 37 percent are satisfied with their current lives, and 33 percent are dissatisfied. Households from Balbala are more likely to be satisfied with their lives (44 percent) than those from either the rest of Djibouti City (35 percent) or other urban areas (30 percent).

Figure 8.2: Outlook on the future and life satisfaction



Source: Authors' calculation based on Djibouti COVID-19 phone survey, 2nd wave.

CONCLUSION



In response to COVID-19, the government implemented a set of measures to limit the effects on the health of the population, while trying to limit the impact of those measures on the economy. These measures have hit the economy and particularly some economic sectors, thereby affecting the well-being of Djiboutian households. This phone survey carried out between September and October aims to monitor the socio-economic impacts of COVID-19 and government's containment measures on Djiboutian households, through various channels such as job loss, availability and price changes of basic goods and ability to access healthcare.

Since the end of the lockdown, there are signs of an economic recovery as economic activities have been trending back to normal. About 77 percent of the breadwinners worked the week before the survey. This represents a substantial increase from the 59 percent found in the first wave fielded in July. Between July and October, several transitions have occurred in the employment status of breadwinners. Notably, 17 percent of those working in July stopped working by the second wave, indicating some job insecurity. Breadwinners working lesser than usual are still contending with a decline in their incomes as 50 percent received only a partial wage. But basic products are more available to most households at reasonable prices.

Although the economy is showing signs of recovery, the poor tend to see improvements in their employment outcomes at a much slower rate than the non-poor. Among the non-poor who worked less, 45 percent received no wage in the first round of survey which improved to 34 percent in the second round. Nevertheless, the situation did not improve for poor for whom the corresponding numbers stand at 49 and 45 percent in the first and second round respectively. The fallouts of the lockdown are still being felt among households whose breadwinners work in the informal sector.

Food insecurity has come to shape the daily lives of many households. Around 40 percent of households expressed some worry about not having enough food due to a lack of resources, and 28 percent of the households cut the size of their meals. The household food insecurity scale (HFIAS) indicates that 12 and 27 percent of the households are severely and moderately food insecure, respectively.

Government assistance has played a role in helping households weather the fallout of the pandemic. But it is still important that adequate policy responses be initiated to support expansion in the labor market in order to deliver further improvements to welfare of poor households. Finally, the current positive signs of an economic recovery trend strike a more optimistic tone about the medium-run prospects of the Djiboutian households, which is also reflected in their perceptions about the future.

Box 1. Sampling strategy and sampling weights in wave 2

The sampling strategy of the first wave of the COVID-19 survey provided point estimates of key indicators with sufficient precision for the following three domains: (1) Balbala, (2) remainder of Djibouti City and (3) other urban centers. Data from the national social registry, restricted to urban households having at least one phone number and interviewed after July 1, 2017 (to increase the response rates), serves as the sampling frame of this survey. The social registry is an official database of households in Djibouti that may benefit from public transfers and be particular targets of poverty alleviation efforts. This data has been collected since 2014 and consists of about 70,000 households, with majority of the fieldwork conducted from 2017 onwards. Despite the fact that this database over-represents the poor, it provides us with an up-to-date sampling frame. The social registry collects a wealth of socioeconomic characteristics of households along with working phone numbers of household heads or spouses of household heads. The use of biometric information to record household level data negates the possibility of having duplicate entries.

The sample of this wave of data collection consists of 1,437 panel households from the previous wave and 274 households drawn randomly from the sampling frame stratified by survey domain and poverty status.⁹ Table A1 presents the breakdown of the sample by survey domain.

Table A1: Sample breakdown by survey domain

Survey domain	Share of urban population (household budget survey- EDAM, 2017)	Sample size		
		Panel (# households)	Replacement (# households)	Total (# households)
Balbala	54.1%	470	106	576
Rest of Djibouti City	35.5%	490	86	576
Other urban areas	10.4%	477	82	559
Total	100.0%	1,437	274	1,711

Both cross-sectional and panel weights are designed to adjust for differences in selection probability due to either design or non-response. In addition, further adjustments in sampling weights were made to ensure that indicators produced are representative of the country's population, by poverty status and by location. The sampling frame, the social registry of the Ministry of Social Affairs, over-represents the poor and has an incomplete coverage of the upper distribution of income. To correct for these biases, we rely on a post-calibration approach, using the household budget survey of 2017 (EDAM 2017) as the reference data source. This is because EDAM 2017 survey was representative of the country's population by poverty status and survey domains. However, EDAM 2017 survey is restricted to the first four consumption quintiles to ensure sufficient overlap of the universes covered by both surveys.

⁹ See the survey report of the first wave sample for a full description of the sampling strategy.

Box 2: Attrition between wave 1 and wave 2

Regressing a variable indicating whether households dropped out of the survey on household characteristics shows that there is no statistically significant correlation between attrition and observables characteristics.

Table A2: Log-odds ratios of regressing an indicator of attrition on household characteristics

Characteristics	(1) 1(Drop out)	(2) 1(Drop out)	(3) 1(Drop out)	(4) 1(Drop out)	(5) 1(Drop out)	(6) 1(Drop out)	(7) 1(Drop out)
[Base=Balbala]							
Other urban areas	-0.131 [0.227]	-0.136 [0.228]	-0.156 [0.229]	-0.154 [0.230]	-0.151 [0.230]	-0.153 [0.230]	-0.150 [0.230]
Rest of Djibouti City	0.013 [0.224]	0.012 [0.225]	0.002 [0.224]	0.005 [0.226]	0.017 [0.227]	0.021 [0.227]	0.019 [0.227]
Replacement in wave (Yes=1)		-0.031 [0.026]	-0.031 [0.027]	-0.031 [0.027]	-0.031 [0.027]	-0.030 [0.027]	-0.029 [0.027]
Log-household size			-0.099 [0.146]	-0.103 [0.149]	-0.096 [0.150]	-0.117 [0.161]	-0.125 [0.161]
Sex of household head (Male=1)				-0.025 [0.199]	-0.007 [0.201]	-0.006 [0.201]	-0.009 [0.201]
Age of household head					-0.003 [0.007]	-0.003 [0.007]	-0.003 [0.007]
Poverty status (Poor=1)						0.141 [0.174]	0.142 [0.174]
[Base=Worked week before survey]							
Worked week before survey (No)							-0.122 [0.196]
Worked week before survey (Don't know)							0.145 [0.647]
Constant	1.480*** [0.154]	1.374*** [0.177]	1.210*** [0.297]	1.174*** [0.423]	-1.046** [0.494]	-1.039** [0.494]	0.984** [0.499]
Observations	1,486	1,486	1,486	1,486	1,486	1,486	1,486

Robust standard errors in brackets.

*** p<0.01, ** p<0.05, * p<0.1