Monitoring the socio-economic impacts of COVID-19

on Djiboutian and refugee households in Djibouti

Results from third wave of survey

(collected December 20-February 2)

May 2021

Executive Summary

The third round of data collection on monitoring of socio-economic impacts of the COVID-19 pandemic in Djibouti followed urban national households based on two previous waves of data collection as well as a replacement sub-sample. This round also includes a refugee sub-sample, covering urban refugees and those based in refugee villages.

Economic recovery in Djibouti continues to follow a positive trend. Breadwinners from Djiboutian households continue to come back to work. Only 4 percent of those working before the pandemic were not working at the time of the survey. Even when counting those who were not working before the pandemic, 83 percent of all national households' breadwinners are now working – continuing strong trends from waves 1 and 2. Nationals with waged work grew from 22 to 76 percent in that time, and only 9 percent of those currently working report working less than usual.

Djiboutian workers are also working more – but for less pay. Only one in five Djiboutian breadwinners are working less than they were before the pandemic or not at all. However, half of those who worked less than usual received no pay in wave 3 – 53 percent up from 35 percent in wave 2, and fewer received partial payment compared to the previous waves. Poor households were more likely to have received no pay for work performed.

Refugees based in refugee villages face worse employment conditions than those living in urban areas or urban nationals. They were less likely to be employed prior to COVID-19, more likely to lose their job during pandemic, and do not exhibit similar signs of recovery. Around 68 percent of urban refugee breadwinners are currently working and 7 percent who worked before the pandemic are currently not working. In comparison, less than half (49 percent) of refugee breadwinners based in refugee villages are currently working, and 16 percent are no longer working relative to pre-COVID-19. A quarter of urban refugees and around 35 percent of refugees in refugee villages worked neither now nor before the pandemic, and nearly a third (29 percent) of the latter who are working report working less than usual. In addition, refugee breadwinners' concentration in the informal sector (87 percent) highlights the precarity of their livelihood.

Female labor force participation patterns differ between national and refugee populations. Among the national sample, households with female breadwinners are slightly more likely to find work than those with male breadwinners. Yet among refugee households, female breadwinners are significantly less likely to be working than males. While female breadwinners contribute less to household income, their children are more likely to have eaten three meals per day, the week before the survey.

Village-based refugees' food security trails urban refugees and nationals. While more of the refugees from refugee villages report their children having three meals a day the week before the survey than urban refugees, they are significantly more likely to have skipped a meal in the last 30 days. Significantly, although 82 percent of national households and 86 percent of urban refugees have an acceptable food consumption score, just 47 percent of village-based refugee households do. National households' access to basic goods, including food items and basic medicine, continues to improve, and urban refugees report similar access levels. However, village-based refugees' access to goods is significantly worse than their urban counterparts.

Safety nets in Djibouti play an important role in protecting the most vulnerable—particularly refugees. Government assistance programs remained an important source of income for 41 percent of national households. For refugee households, the three main sources of income are assistance from INGOs (88 percent in the refugee villages and 62 percent in urban areas), assistance from family and friends and remittances (36 and 58 percent) and assistance from government (20 and 56 percent). A lower proportion of households with poor food consumption is observed among those who receive food assistance, particularly for refugees based in refugee villages.

COVID-19 vaccine receptivity was generally high in anticipation of vaccines' arrival in Djibouti. Indeed, 73 percent of national households and 85 percent of refugee households declared that they would accept a vaccine known to be safe and effective. Urban refugees and those based in refugee villages are equally likely to be receptive to vaccines.

INTRODUCTION

Nearly one year after recording the first case of COVID-19 in Djibouti, the rate of infection has slowed[1]. As of March 05, 2021, there were more than 6,100 total cases and 63 COVID-19 related deaths (WHO), but the daily rate of detected cases had been very low. Having initiated a lockdown policy in April 2020, the country had lifted most of the restrictive measures by the end of May 2020. However, the potential impacts of the pandemic and public health measures on the well-being of Djiboutian and refugee households may continue. The first two waves of this survey, which comprised the national sample only, revealed the negative effects of the pandemic on households' welfare, specifically in terms of breadwinners' employment, access to goods and services, and food insecurity. Whereas access to basic goods has improved since the first wave, the second wave showed continued food insecurity.

The third wave of this COVID-19 survey aimed to follow the households that had been interviewed in the first two rounds of data collection, as well as a replacement sub-sample. New to this third wave is a sub-sample of refugee households, which comprises refugees and asylum-seekers from other countries. The objective is to identify the trends of recovery since the onset of COVID-19 crisis along six themes: economic activities, livelihoods and shock coping mechanisms, safety nets, access to basic goods, access to services, and food insecurity.

THE PHONE SURVEY

The third round of data collection on monitoring of socio-economic impacts of the COVID-19 pandemic took place between December 20th, 2020 and February 2nd, 2021, and aimed to follow the households from the national sample that had been interviewed in the first two rounds of data collection, as well as a replacement sub-sample, with the addition of a sub-sample of refugee households.[2] The objective of this study is to identify trends in economic activities and livelihoods, access to basic goods and services, food insecurity, safety nets and mechanisms to cope with shocks since COVID-19.

In this report, the Djiboutian sub-sample drawn from the national social registry is referred to as 'national households', and the sub-sample of refugees and asylum seekers drawn from the UNHCR registries and identified by the National Institute of Statistics of Djibouti (INSD) in a 2019 listing exercise is referred to as 'refugee households' (see Box 3 for a description of the refugee sample). The data is collected over phone by INSD, and information on the households and breadwinners is provided by an adult[3] respondent within the household. The sampling strategy of the national sample remains the same as in the previous waves and the refugee sample is restricted to those from the 2019 listing exercise who have a phone number (see Box 1 for a description of the sampling strategy and weights, and Box 3 for a description of the refugee sampling frame). The results of the national sample are representative of the country's urban population (except the top wealth quintile) – as such where national households, breadwinners, or respondents are discussed in this report, refers to urban dwellers. Notably, 70% of Djibouti's national population lives in urban areas (according to 2009 population census). The refugee sample is representative of the population of refugees and asylum seekers in Djibouti that lives in the refugee villages[4] of Ali Addeh, Holl Holl and Markazi, as well as Djibouti City[5]. While the sampling design does not provide sufficient statistical power to disaggregate by refugee villages site, heterogeneity regarding several characteristics (see Table A3.3 in Box 3) supports segmenting the analysis across the three subsamples - national, urban refugee, and refugee residing in refugee villages (henceforth, village-based refugees). Therefore, whenever the sample size allows it, the sub-sample of refugees is

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[1] While the daily rate of COVID-19 cases in Djibouti had been low and decreasing since August 2020 until the end of third wave of data collection, it has seen a steady increase since February 2021.

[2] The refugee sample includes both refugee and asylum-seeker households. The objective is to build a longitudinal dataset of the refugee household in a prospective fourth wave of data collection.

[3] The surveyor preferably searched to interview the previous waves respondent for the panel households, and the household head or closest related household member for the replacement et refugee households.

[4] The term "refugee villages" refers to refugee settlements. The report refers to this group as village-based refugees.

[5] Phone surveys are useful in the pandemic as a way to collect data without risking spread of COVID-19. However, they necessarily only include households with access to a live mobile phone line, and so may omit poor households. To overcome this, re-weighting techniques were applied to bring the statistics here as close to being representative of the full refugee and urban national populations as possible.

disaggregated[6] by place of residence, with 184 urban households (33% of the refugees) and 380 village-based (predominantly rural) households (67% of the refugees).

The average response rate of the whole sample stands at 69.7 percent (Table 2.1), with a higher response rate for national households than refugee households (74.3 percent and 60.5 percent, respectively), and with some geographic variation for the national sample. The response rate amongst previously interviewed national households -in wave 2- stands at 80.8 percent (see Box 2 for the analysis of attrition and the composition of the sample by panel status).

Table 2.1: Response rate to the survey – National and Refugee Sample

	Number of Successful Interviews	Response Rate (%)
Whole Sample	1,947	69.7
Type of Sub-sample		
National	1,383	74.3
Refugee	564	60.5
By Replacement Status for Nationals		
Panel	1,180	80.8
Replacement	203	50.5
By Location for Nationals		
Balbala	463	75.9
Rest of Djibouti City	482	76.4
Other Urban Areas	438	70.5
By Location for Refugees		
Urban areas	184	60.3
Refugee villages	380	60.7

Source: Djibouti COVID-19 phone survey, 3rd wave.

The majority of respondents and breadwinners are male, household heads, and aged between 35 and 49 years old (Table 2.2). National respondents are more likely to be male and older and breadwinners as compared to the respondent for the refugee households but are less likely to be the household head. For 57.6 percent of the national households, 85.6 percent of the urban refugee households and 73.5 of the village-based refugee households respectively, the breadwinners are themselves the respondents to the survey. The breadwinners are the household head in 70.6 percent of the national households and 91.3 and 70.0 percent of the urban and village-based refugee households, respectively. In some cases, the breadwinner is not a household member (8.5 percent of the national households, 2.8 percent of the urban refugee households and 4.0 percent of the village-based refugee households). The refugee households interviewed in this wave predominantly come from Somalia (50.2 percent), Yemen (24.2 percent) and Ethiopia (20.6 percent).[7] See Box 3 for more details about the refugee sample.

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[6] However, where multiple disaggregation is necessary, the sample size may not be sufficient to draw robust conclusions.
[7] Based on the nationality of the respondent.

Table 2.2: Characteristics of respondents and breadwinners (%)

	Respondent			Breadwinner		
	Urban national	Urban refugee	Village-based refugee	Urban national	Urban refugee	Village-based refugee
Male	57.1	79.0	37.2	70.6	84.0	50.8
Age group						
18-34	28.8	28.4	42.2	20.0	27.2	38.5
35-49	44.7	52.9	37.8	49.2	53.9	38.2
50-64	20.5	16.3	17.4	24.4	17.6	20.0
65+	5.1	2.4	2.6	6.4	1.3	3.3
Relationship to the household head						
Household head	64.5	94.3	80.7	70.6	91.3	70.0
Spouse	17.3	2.9	10.2	13.3	2.1	21.7
Child	14.3	2.2	5.2	10.3	2.6	4.3
Other	3.9	0.6	3.9	5.8	4.0	4.1
Observations	**1,383**	**184**	**380**	**1,262**	**178**	**361**

Source: Djibouti COVID-19 phone survey, 3rd wave.

ECONOMIC ACTIVITIES

Breadwinners from the national sample continue to return to work, and significant disparities exist between urban and village-based refugees. Compared to waves 1 and 2, more national breadwinners had been working the week before the wave 3 survey (Figure 3.1). Indeed, 83 percent of the breadwinners from the national sample (urban) worked the week before the survey compared to 77 percent in wave 2 and 58 percent in wave 1. Economic activity is much lower among the refugee breadwinners as only 54 percent worked the week before the survey, however, notable differences exist between urban and village-based refugees. Specifically, the results suggest that while 68 percent of urban refugee breadwinners worked before the survey, only 49 percent of village-based refugees have. Male refugee breadwinners are more likely to have worked the week prior to the survey, than female breadwinners. In addition, 32 percent of all the refugee breadwinners reported that they were neither working in the pre-pandemic period nor in the week before the survey, compared to 13 percent of the national breadwinners. Thus, even before the pandemic, refugee breadwinners were less likely to participate into the labor market than the national breadwinners.[8] To benchmark these results, the Profiling Survey Report of Refugee Villages of 2019[9] that describes this study's survey frame is used. The report highlighted that in 2019, the employment rate among the refugee population aged of 15 and more stood at 29 percent, with important variations across gender and location.[10] Only a few breadwinners who were working before the pandemic have not resumed economic activity, although the rate is markedly higher among village-based refugees (4 percent of the national breadwinners, 7 percent of the urban refugee breadwinners, and 16 percent of the village-based refugee breadwinners). Among village-based refugee breadwinners, 35 percent did not work neither before the survey nor before the COVID-19 crisis, compared to 25 percent among urban refugees and 13 percent of the national breadwinners.

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[8] It is important to note that regional differences may exist among the refugee population which cannot be captured in the survey design.
[9] *Rapport d'enquête profilage dans les villages de réfugiés* 2019, by the Institute of Statistics of Djibouti, Ministry of social affairs and solidarity, World Food Program, and UN Refugees agency in 2020.
[10] Note that contrary to the Profiling Survey Report of 2019 that measures the employment rate, the present COVID-19 survey only captures employment of breadwinners, and therefore the figures are not necessarily comparable.

Figure 3.1: Working status of breadwinners (%)
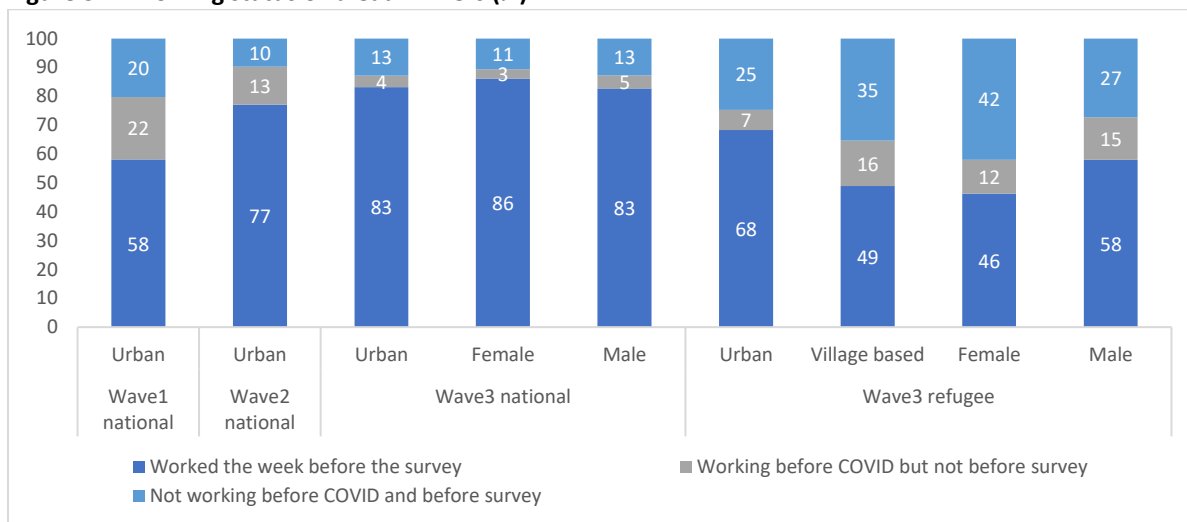
Source: Authors' calculation based on Djibouti COVID-19 phone survey, 1st, 2nd and 3rd waves.
Notes: Waves 1 and 2 only included national households. Statistics are based on cross-sectional proportions and not only the longitudinal sample. Breadwinners are divided into three categories: 1) those working in the week before the survey, 2) those working before COVID-19 but were not working in the week before the survey and 3) those that were neither working before COVID-19 nor in the week before the survey. The category "female" refers to households with a female breadwinner while "male" refers to households with a male breadwinner. The national sample is only representative of the urban Djiboutian population.

The working status of breadwinners varies by personal attributes and characteristics such as gender and sector of employment. Notably, among refugees, it differs by location. Among the national sample, more female breadwinners reported to have worked the week before the survey compared to the male breadwinners (86 percent and 83 percent, respectively). In contrast, 46 percent of female breadwinners reported to have worked the week before the survey compared to 58 percent of male breadwinner for refugee households. Moreover, breadwinners working in the formal private and public sectors are slightly more likely to have worked the week before the survey than the breadwinners in the informal sector (89 percent in the private formal sector, 85 percent in the public sector and 82 percent in the informal sector).

Most of the breadwinners who have not returned to their economic activities since the pandemic were engaged in the informal sector (Figure 3.2)[11]. Indeed, 77 percent of all the breadwinners who were working before COVID-19 but were not working before the survey were engaged in the informal sector. Among those who were working before COVID-19 but not before the survey, 51 percent worked in small businesses, 15 percent in public administration and 14 percent in large private firms. Moreover, those breadwinners who stopped working since COVID-19 were mainly working as daily workers (51 percent), self-employed (29 percent) and employees (18 percent). Given the refugee breadwinners are much more likely to work in the informal private sector than national breadwinners (85 percent versus 49 percent, respectively), it further highlights the precarity of the refugee individuals' employment conditions.

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[11] Ideally, the pre-COVID-19 employment characteristics of the breadwinners who were working before COVID-19 but were not working before the survey would be compared to those who were working before COVID-19 and were working before the survey. However, the questionnaire does not ask former employment characteristics for those currently working.

Figure 3.2: Employment characteristics of breadwinners who stopped working since COVID-19 (%)
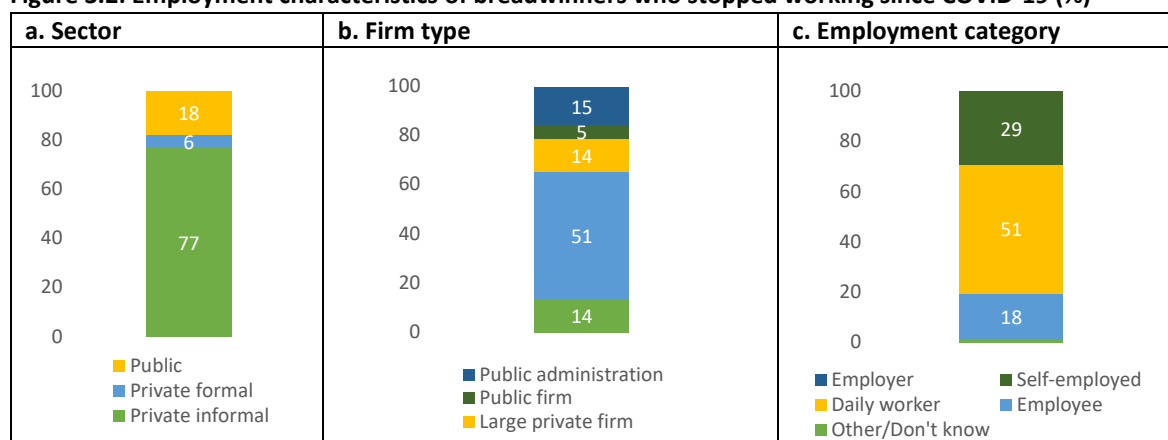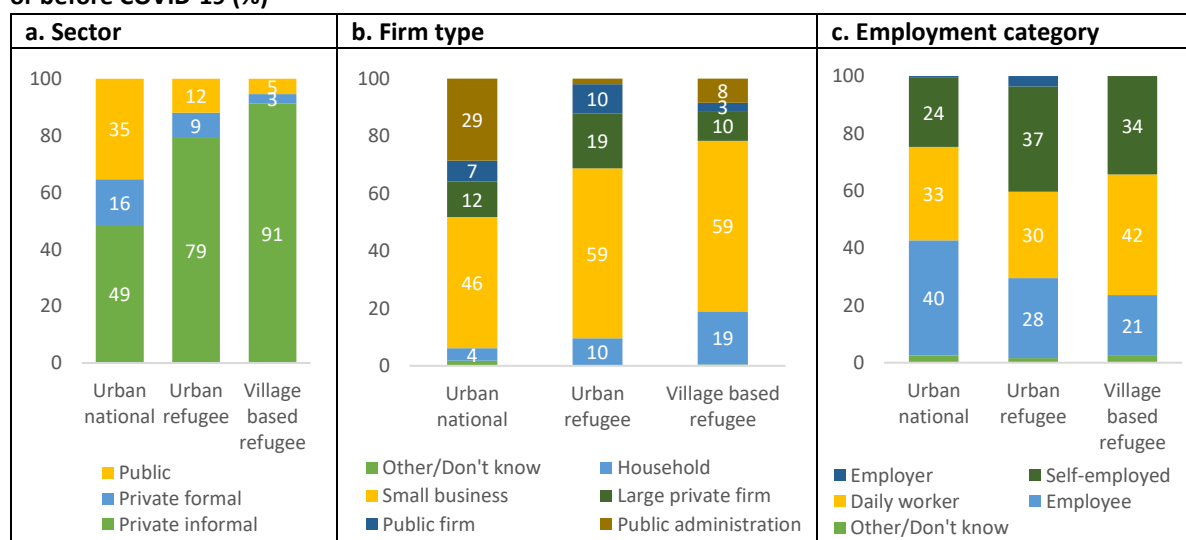

Source: Authors' calculation based on Djibouti COVID-19 phone survey, 3rd wave.
Notes: A small business is a sole proprietorship or cooperative; public firms are state owned enterprises. Both national and refugee breadwinners are considered together here.

Most of the refugee breadwinners in the sample work in the informal sector (79 and 91 percent, respectively for urban and village-based refugees) compared to half of the national breadwinners (Figure 3.3). Most refugee breadwinners work in small businesses (59 percent for both urban and village-based refugees), and only 10 percent of village-based refugees work in large private firms versus 19 percent of the urban ones. The employment category of refugee breadwinners is distributed between self-employed (37 and 34 percent for urban and village-based refugees, respectively), daily workers (between 30 to 42 percent for urban and village-based refugees, respectively) and employees (28 percent for urban refugees and 21 percent for the village-based ones). Compared to national breadwinners, refugee breadwinners are more likely to work in a small business or activities with households as employers and to be self-employed. In addition, female refugee breadwinners are more likely to work in the informal sector than males (95 percent versus 83 percent, respectively), while male breadwinners are more likely to be daily laborers than their female counterparts (40 percent versus 33 percent, respectively).

Figure 3.3: Employment characteristics of national and refugee breadwinners who worked before the survey or before COVID-19 (%)
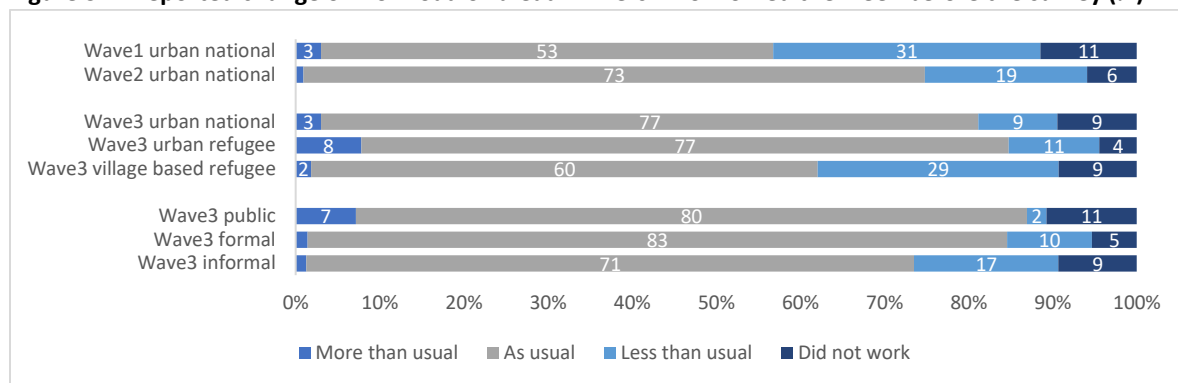

Source: Authors' calculation based on Djibouti COVID-19 phone survey, 3rd wave.
Notes: A small business is a sole proprietorship or cooperative; public firms are state owned enterprises.

Compared to the previous waves of the survey, more Djiboutian breadwinners who worked before the survey have declared working the same as usual the week before the survey (Figure 3.4). For the refugee breadwinners, 29 percent of village-based refugees reported working less than usual and 9 percent did not work at all, compared to 11 and 4 percent respectively for urban refugees. In wave 3, 77 percent of national breadwinners were working as usual, versus 73 percent in wave 2 and 53 percent in wave 1. The proportion of national breadwinners who worked less than usual has decreased from 31 percent in wave 1 to 9 percent in wave 3. Therefore, compared to nationals and their retrospective pre-COVID-19 situation, the decrease of economic activity appears to be more prolonged for village-based refugees. The main reason for the breadwinner's decrease of activity reported by the respondents is the stop of their economic activity which induced the reduction of staff and worked hours.

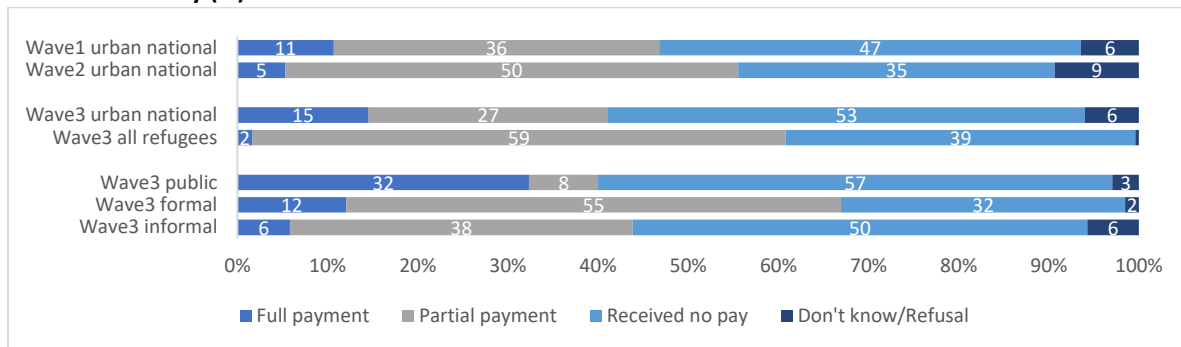**Figure 3.4: Reported change of workload of breadwinners who worked the week before the survey (%)**

Source: Authors' calculation based on Djibouti COVID-19 phone survey, 1st, 2nd and 3rd waves.
Notes: Waves 1 and 2 only included national households. Statistics are based on cross-sectional proportions and not only the longitudinal sample. The distinction by sectors of employment (public, formal, informal) concerns all the households whose breadwinner was working before the survey or whose breadwinner was working before COVID-19 but not the week before the survey. The category "formal" refers to the private formal sector and "informal" refers to the private informal sector.

Despite a reduction in the proportion of national breadwinners who declared having worked less than usual or not at all over the survey waves, a larger proportion among the remaining breadwinners who worked less than usual reported receiving no pay instead of partial payment in wave 3. Hardly any refugee breadwinners who worked less than usual received full payment for their work. (Figure 3.5).[12] Half of the national breadwinners who worked less than usual or who did not work received no pay, compared to 35 percent of the national breadwinners in wave 2. Moreover, fewer national breadwinners received partial payment compared to the previous waves (27 percent in wave 3 versus 50 percent in wave 2), while the percentage of national breadwinners who received full payment increased by 10 percentage points between wave 2 and wave 3. Therefore, it may be that some of those who were receiving partial payment in previous waves returned to their usual workload, leaving those who were least employable left behind, not working and/or not receiving payment. Further data may be required to ascertain the drivers in the dynamics of return to work. Regarding the refugee breadwinners who were working less or not at all, 59 percent received partial payment and 39 percent received no pay. The variation in labor income varies strongly according to the sector of employment of the breadwinner. Those working in the public sector are much more likely to receive a full payment (32 percent versus 12 percent in the formal sector and 6 percent in the informal sector), but curiously are also more likely to receive no pay at all. Breadwinners from the private formal sector appear to be the more protected as only 32 percent of them received no pay (versus 57 percent in the public sector and 50 percent in the informal sector).

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[12] Notice that among the 208 breadwinners who received no pay at all the week before the survey, 60 percent did not work, and 39 percent worked less than usual. Among the 167 breadwinners who did not work at all the week before the survey, 69 percent received no pay, 21 percent received a full payment and 8 percent a partial payment.

Figure 3.5: Reported change in labor income among breadwinners who worked less or not at all the week before the survey (%)

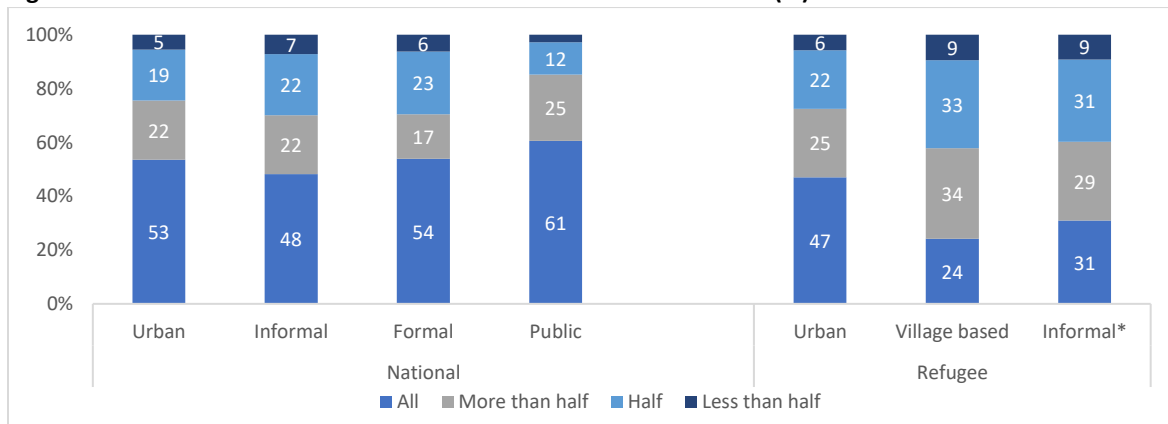Source: Authors' calculation based on Djibouti COVID-19 phone survey, 1st, 2nd and 3rd waves.
Notes: Waves 1 and 2 only included national households. Statistics are based on cross-sectional proportions and not only the longitudinal sample. The distinction by sectors of employment (public, formal, informal) concerns all the households whose breadwinner was working before the survey or whose breadwinner was working before COVID-19 but not the week before the survey. The category "formal" refers to the private formal sector and "informal" refers to the private informal sector. Due to small sample size after restricting to households whose breadwinner worked less or not at all the week before the survey, it is not possible to disaggregate between urban and village-based refugees.

LIVELIHOODS

For around 75 percent of the national households, 72 percent of the urban refugee households, and 58 percent of the village-based refugee households, the breadwinner's income represents all or more than half of the household's income (Figure 4.1). In both samples, female breadwinners are more likely to contribute half or less than half of the household's income than male breadwinners. Urban refugee breadwinners are more likely to contribute to the totality of household's income than their village-based counterparts. The proportion of the household's income from the breadwinner varies by the sector of employment (higher probability for breadwinners who work in the public and private formal sectors to contribute to all the household's income than the private informal sector). Based on retrospective data, the contribution to households' income is similar to what it was before the COVID-19 crisis for 75 percent of all the households. However, breadwinners who work in the informal sector are more likely to have a lower share of contribution to the household's income compared to before March 2020. This can be explained by the decrease of workload (Figure 3.4) that touched more the breadwinners in the informal sector (17 percent) than those working in formal or public sectors (10 percent and 2 percent, respectively).

**Figure 4.1: Usual share of household's income from the breadwinner (%)**

Source: Authors' calculation based on Djibouti COVID-19 phone survey, 3rd wave.
Notes: The distinction by sectors of employment (public, formal, informal) concerns all the households whose breadwinner was working before the survey or whose breadwinner was working before COVID-19 but not the week before the survey. The category "formal" refers to the private formal sector and "informal" refers to the private informal sector. *Only the informal sector is shown for the refugee breadwinners due to a small sample size in formal and public sector jobs.

While in waves 1 and 2, the highest proportion in sources of income for national households was assistance from government, in wave 3 the highest proportion is waged work and family business (Figure 4.2). Refugee households in this wave rely primarily on assistance from non-governmental or international organisations (INGOs). While waged work and family business were identified as income sources for 22 and 43 percent of the national households in waves 1 and 2, respectively, 76 percent in the third wave report having it as a source of income. Assistance from government remained an important source of income for the national households, despite a decrease compared to wave 2 (41 percent in wave 3 versus 44 percent in wave 2). Moreover, assistance from family and friends and remittances was reported as an income source for 27 percent of the national households (compared to 17 percent in wave 2). For the refugee households, two main sources of income are assistance from INGOs (88 percent for village-based refugees, and 62 percent for urban refugees) and assistance from family and friends and remittances (36 and 58 percent, respectively). Urban refugees also benefit from government assistance[13] (56 percent). Around 21 percent and 15 percent of village-based and urban refugee households, respectively, declared waged work and family business as a source of income. This difference in waged work as household's income source between nationals and refugee is consistent with previous results showing that refugee breadwinners are less likely to have worked the week before the survey, and when they work refugees are likely to work less than usual compared to national breadwinners.

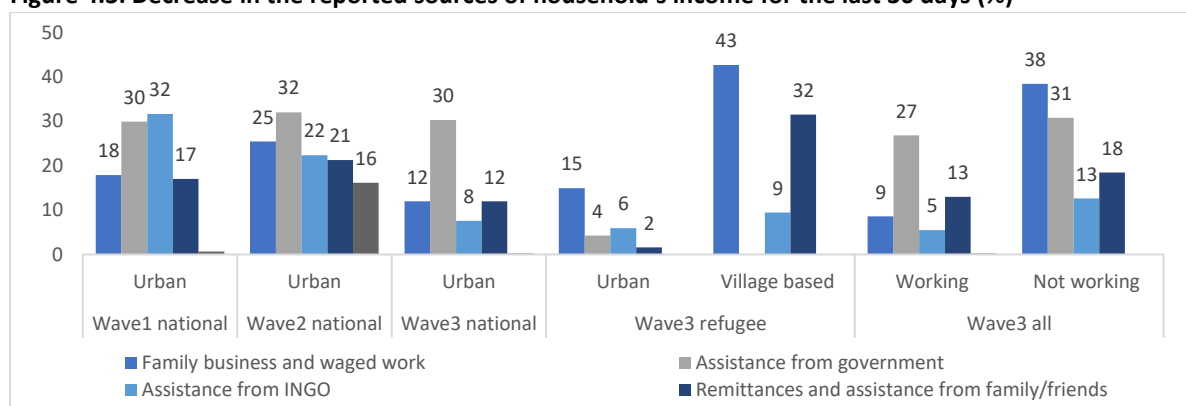**Figure 4.2: Reported sources of household's income for the last 12 months (%)**
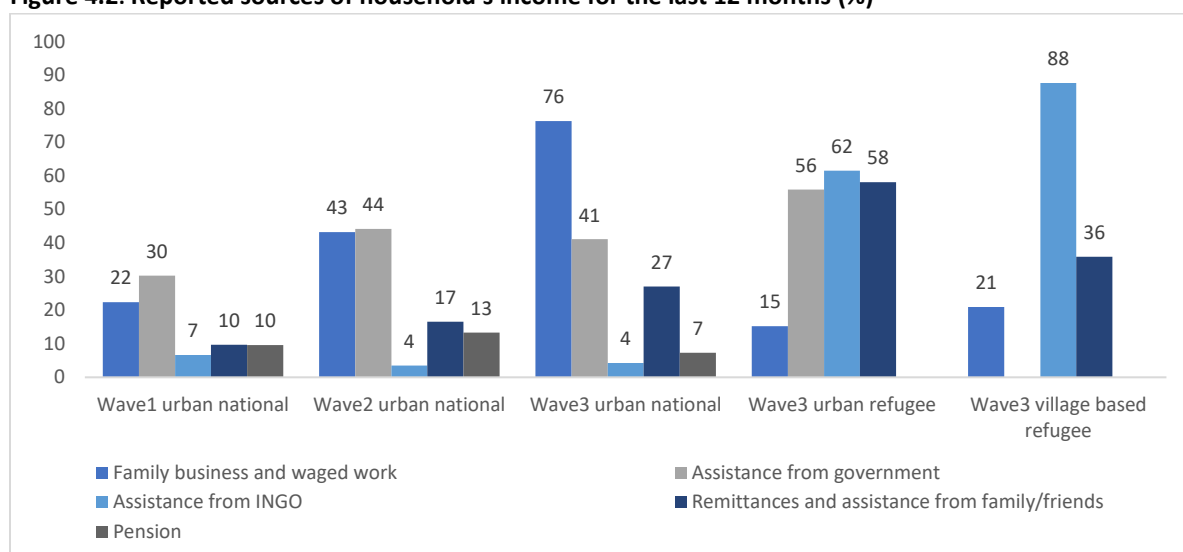
Source: Authors' calculation based on Djibouti COVID-19 phone survey, 1st, 2nd and 3rd waves.
Notes: Waves 1 and 2 only included national households. Statistics are based on cross-sectional proportions and not only the longitudinal sample.

Compared to waves 1 and 2, less national households declared a decrease in all the sources of income (Figure 4.3). Refugee households however are much more likely than nationals to have experienced a reduction in income from family business and waged work (37 percent versus 12 percent, respectively). That said, this difference is primarily driven by village-based refugees' breadwinners, 43 percent of whom experienced a drop in family business and waged work, compared to 15 percent of urban refugee breadwinners. Moreover, households with a non-working breadwinner are more likely to experience a reduction in all their sources of income (except for remittances and assistance from family and friends) compared to households with a working breadwinner.

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[13] According to the ministry of social affairs and solidarity, urban refugees received food vouchers on a monthly basis until the month of March 2021. The ministry of social affairs and solidarity also stated that village-based refugees do not receive any assistance from government.

Figure 4.3: Decrease in the reported sources of household's income for the last 30 days (%)
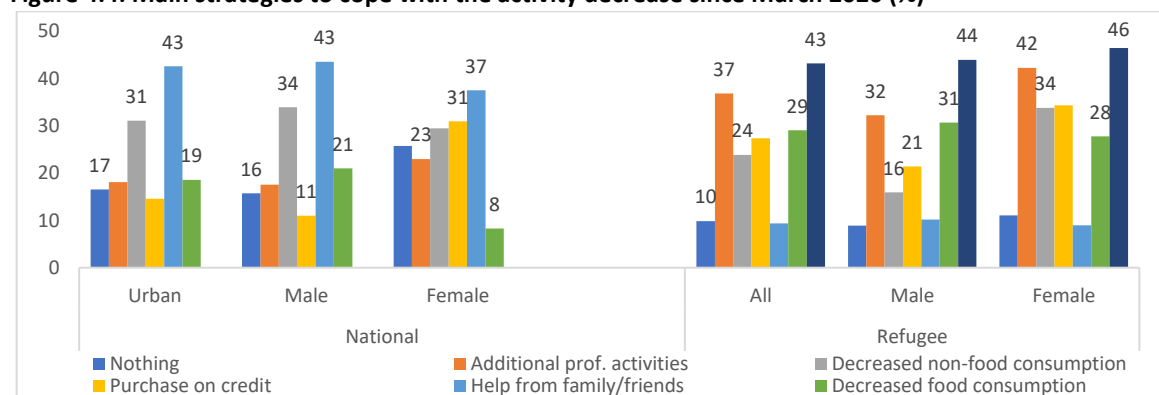

Source: Authors' calculation based on Djibouti COVID-19 phone survey, 1st, 2nd and 3rd waves.
Notes: Waves 1 and 2 only included national households. Statistics are based on cross-sectional proportions and not only the longitudinal sample. The category "working" refers to the households with a breadwinner who worked the week before the survey and the category "not working" refers to the households with a breadwinner who did not work the week before the survey.

When facing a decline in economic activity or an income decrease, households used different strategies to cope with the situation.[14] The main ways in which national households cope with the decrease in economic activity of their breadwinner (Figure 4.4) is by receiving help from family or friend (43 percent), reducing their non-food consumption (31 percent) or their food consumption (19 percent). Refugee households cited receiving help from INGO as the primary coping mechanism (43 percent), engaging in additional income-generating activities (37 percent) and reducing food consumption (29 percent). National households with female breadwinners are more likely to purchase on credit or to adopt no coping mechanisms, than national households with a male breadwinner. Refugee households with a female breadwinner are more likely to engage in additional income-generating activities, purchase on credit and decrease non-food consumption compared to refugee households within male breadwinners. Households whose breadwinner is not working were more likely to have done nothing to cope with the activity decrease, to received help from INGO and decrease food consumption, while those with a working breadwinner are more able to purchase on credit and to benefit from solidarity from family and friends.

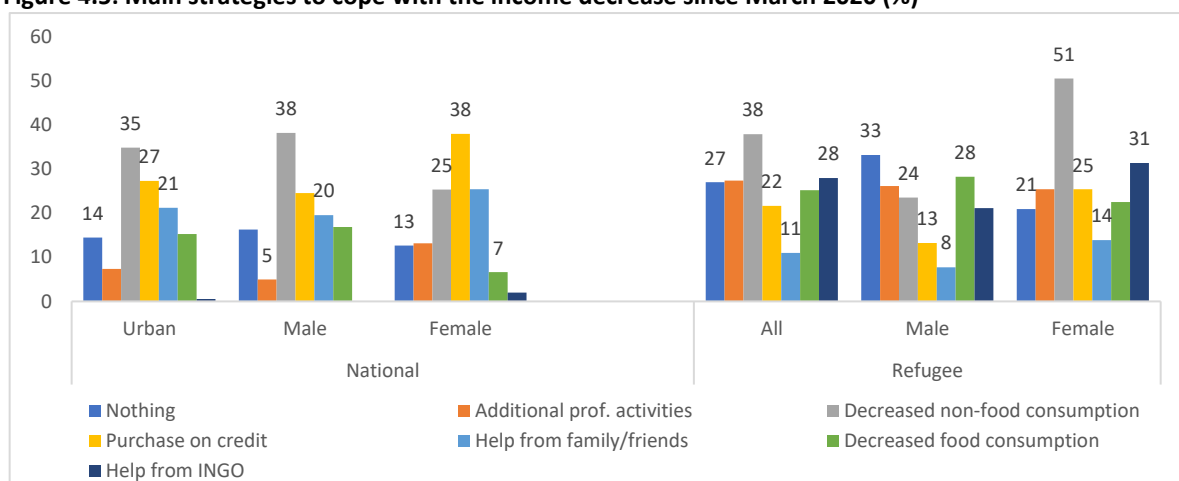**Figure 4.4: Main strategies to cope with the activity decrease since March 2020 (%)**

Source: Authors' calculation based on Djibouti COVID-19 phone survey, 3rd wave.
Notes: The category "female" refers to households with a female breadwinner while "male" refers to households with a male breadwinner. Due to small sample size after restricting to households facing the shock, it is not possible to disaggregate between urban and village-based refugees.

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[14] In general, 8 percent of households experienced both an income and an activity decrease. They are 12 percent to have experienced only an income decrease and 12 percent to have faced only an activity decrease, while 68 percent of households have not experienced a decrease of any type.

In order to cope with the reduction in income, households used various strategies, including reduction in consumption and support from family and friends and INGOs (Figure 4.5). The reduction in non-food consumption is used as one of the strategies for 35 percent of national households and 38 percent of refugee households. National households are more likely to purchase on credit and receive help from friends and family, while refugee households are more likely to engage in additional income-generating activities, decreased food consumption, or do nothing at all. Interestingly, national households with a female breadwinner are less likely to reduce food and non-food consumption, while national households with a male breadwinner are less likely to purchase on credit and receive help from family and friends. For the refugee households, however, those with a female breadwinner mainly decreased their non-food consumption (51 percent of households) and received help from INGO (31 percent of households), whereas 33 percent of those with a male breadwinner reported to have not done anything to cope with the income decrease and 28 percent to have decreased food consumption. Households whose breadwinner is not working are more likely to reduce food and non-food consumption, as well as receiving help from family/friend and doing nothing at all, than households whose breadwinner is working. In contrast, a dominant strategy to cope with the income decrease for the households with a working breadwinner is to purchase on credit (35 percent).

Figure 4.5: Main strategies to cope with the income decrease since March 2020 (%)
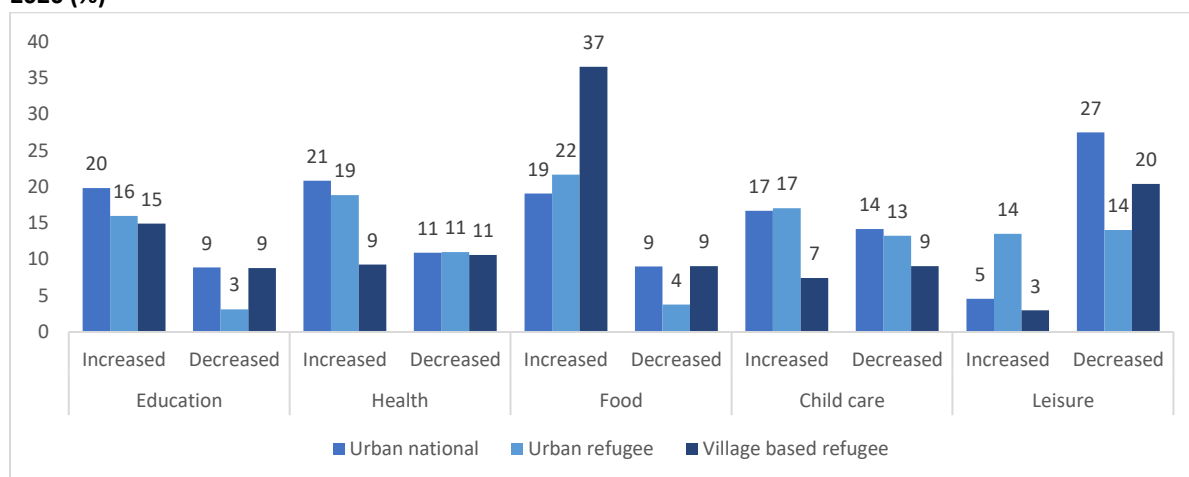

Source: Authors' calculation based on Djibouti COVID-19 phone survey, 3rd wave.
Notes: The category "female" refers to households with a female breadwinner while "male" refers to households with a male breadwinner. Due to small sample size after restricting to households facing the shock, it is not possible to disaggregate between urban and village-based refugees.

The majority of households declared that their expenses stayed the same since March 2020. The main cut in expenses is in leisure (Figure 4.6) for 27 percent of national households, 20 percent of village-based refugee households, and 14 percent of urban refugee households. The main increase is in health expenditure for 21 percent of national households and in food for the refugee households (37 percent of village-based households, and 22 percent of urban ones). Moreover, 11 percent of national households, 4 percent of urban refugee households and 10 percent of village-based refugee households declared having postponed, cancelled or modified previous plans because of the COVID-19 crisis. The types of project differ according to the households. For the nationals, the change in plans were mainly real estate (35 percent) and important purchase (32 percent) while for the refugees[15], they were related to travel (34 percent).

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[15] Sample size does not permit disaggregation between urban and village-based refugees.

Figure 4.6: Proportion of households who increased and decreased different types of expenses since March 2020 (%)

Source: Authors' calculation based on Djibouti COVID-19 phone survey, 3rd wave.

A large proportion of households do not believe they have enough resources for the following 30 days (Figure 4.7). The proportion of national households declaring having enough resources has slightly decreased compared to the previous waves (29 percent in wave 3, versus 33 percent in wave 2 and 30 percent in wave 1). Among the refugees, only 10 percent of village-based households declared having enough resources for facing the expenses of the next month, compared to 26 percent of urban refugee households. Households with a working breadwinner are almost twice as likely to report enough resources for the following 30 days than those with a non-working breadwinner. In addition, having a breadwinner who is working in the public sector seems to offer a protection from the need. Indeed, 42 percent of the households with a breadwinner employed in the public sector declared having enough resources for the next month, while less than a quarter of the other households (with a breadwinner working in the informal and formal private sectors) are in the same situation.

Figure 4.7: Proportion of households who declared having enough resources for the following 30 days (%)
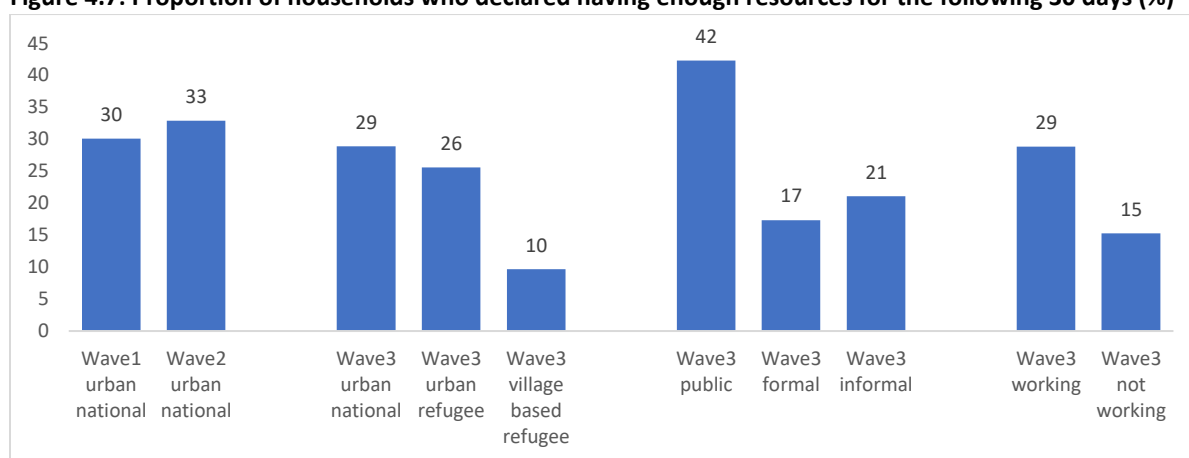
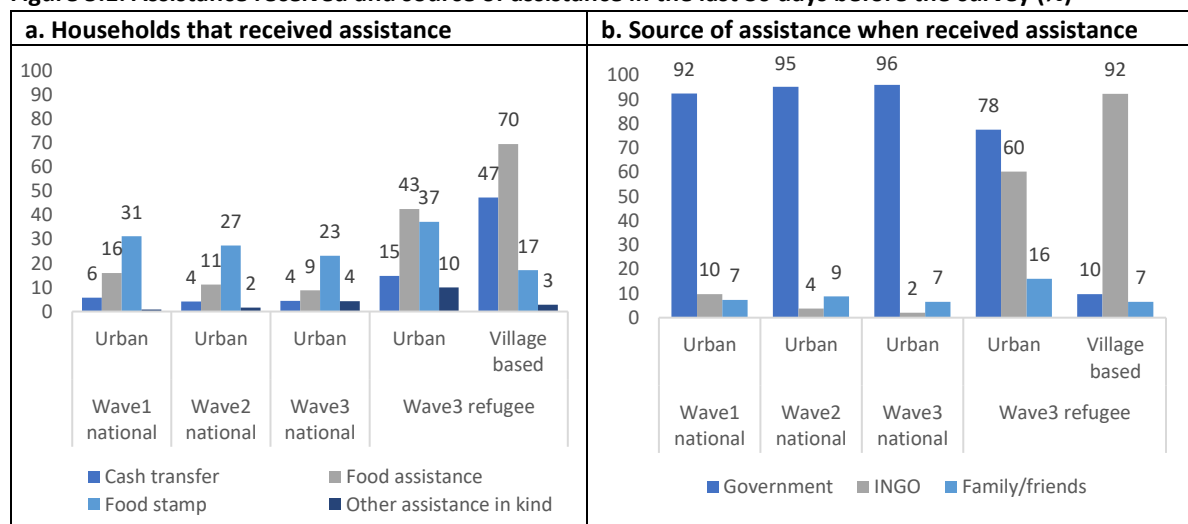Source: Authors' calculation based on Djibouti COVID-19 phone survey, 1st, 2nd and 3rd waves.
Notes: Waves 1 and 2 only included national households. Statistics are based on cross-sectional proportions and not only the longitudinal sample. The distinction by sectors of employment (public, formal, informal) concerns all the households whose breadwinner was working before the survey or whose breadwinner was working before COVID-19 but not the week before the survey. The category "formal" refers to the private formal sector and the category "informal" refers to the private informal sector. The category "working" refers to the households with a breadwinner who worked the week before the survey and the category "not working" refers to the households with a breadwinner who did not work the week before the survey.

SAFETY NETS

The proportion of national households who received assistance is declining in almost all the types of assistance compared to the previous waves (Figure 5.1). Around 23 percent of the national households declared receiving food stamps, compared to 27 percent in wave 2 and 31 percent during the first wave. However, urban refugee households are much more likely to receive any kind of assistance compared to urban nationals: 43 percent of urban refugee households declared receiving food assistance, 37 percent received food stamp, and 15 percent received cash transfer. Among the refugees, village-based households are more likely to receive cash transfer and food assistance than the urban households, while this is the opposite for food stamps and other assistance in kind. Households whose breadwinner is not working are more likely to receive any type of assistance (except assistance in kind) than others. Of those who receive assistance, its source differs according to the type of households. For nationals, the main source of assistance is the government, urban refugees rely on government and INGO assistance, while the main source of assistance of village-based refugees is INGOs.

Figure 5.1: Assistance received and source of assistance in the last 30 days before the survey (%)

Source: Authors' calculation based on Djibouti COVID-19 phone survey, 1st, 2nd and 3rd waves.
Notes: Waves 1 and 2 only included national households. Statistics are based on cross-sectional proportions and not only the longitudinal sample.

ACCESS TO
BASIC GOODS

In general, access to basic goods in Djibouti continues to improve since March 2020 (Figure 6.1). More than 90 percent of the national households were able to have access to wheat flour, rice, cooking oil, vegetable and hand soaps. While a comparable level of access is reported by urban refugees, village-based refugees report lower access to most basic goods – notably basic medicines.[16] In particular, among the refugee households that could not access basic medicines, 89 percent[17] reported they cannot afford them (versus 79 percent of national households).

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[16] Basic medicines refer to medicines for the cold, cough, or fever.
[17] Sample size does not permit disaggregation between urban and village-based refugees.

Figure 6.1: Access to basic goods in the last 7 days (%)

Source: Authors' calculation based on Djibouti COVID-19 phone survey, 1st, 2nd and 3rd waves.
Notes: Waves 1 and 2 only included national households. Statistics are based on cross-sectional proportions and not only the longitudinal sample.
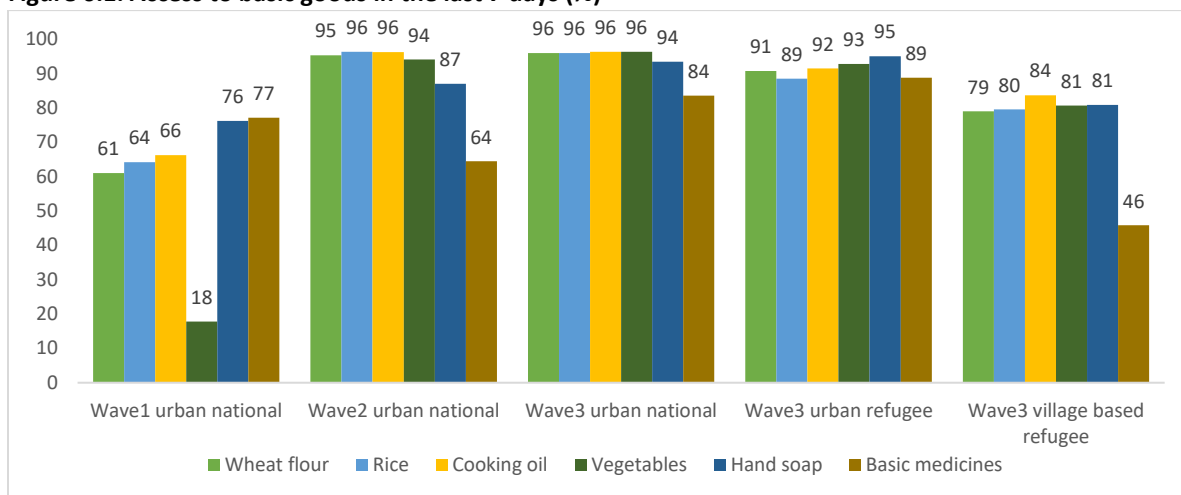
Fewer national households reported a price increase on selected goods the last 7 days to the survey in December/January than during the previous months (Figure 6.2). For example, for vegetables, 15 percent of national households declared facing a price increase in wave 3, compared to 22 percent in wave 2 and 87 percent in wave 1. The data shows that urban refugees are less likely to report experiencing an increase in prices for most goods, compared to village-based refugees. In general, less than 35 percent of both national and refugee households reported a price increase for all the basic goods in December/January during the third wave. This is in line with the CPI evolution over time (Figure 6.3) where a price spike is observed in July 2020 (coinciding with wave 1).

Figure 6.2: Increase in price in the last 7 days reported by households (%)
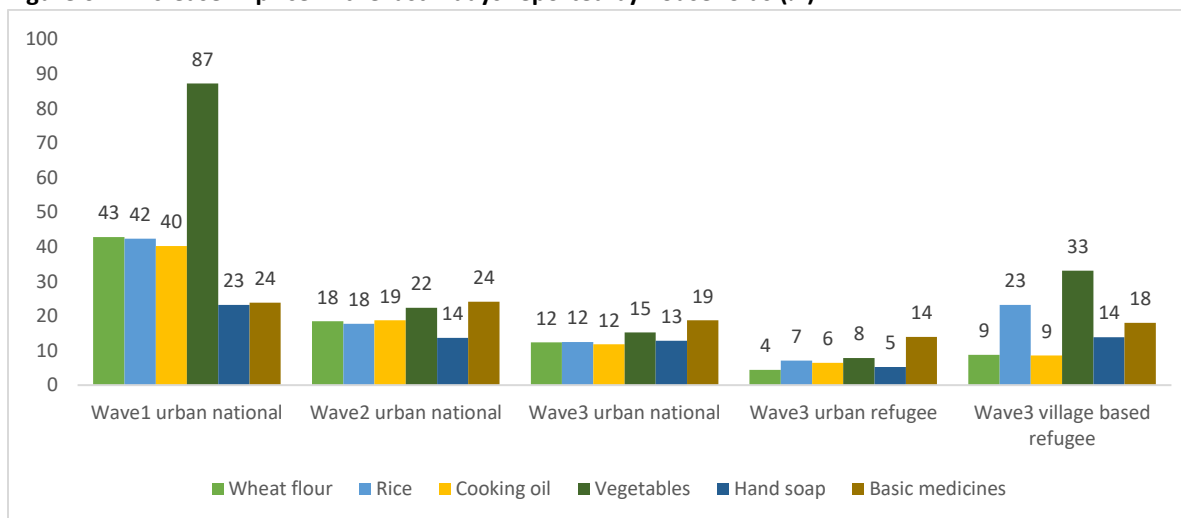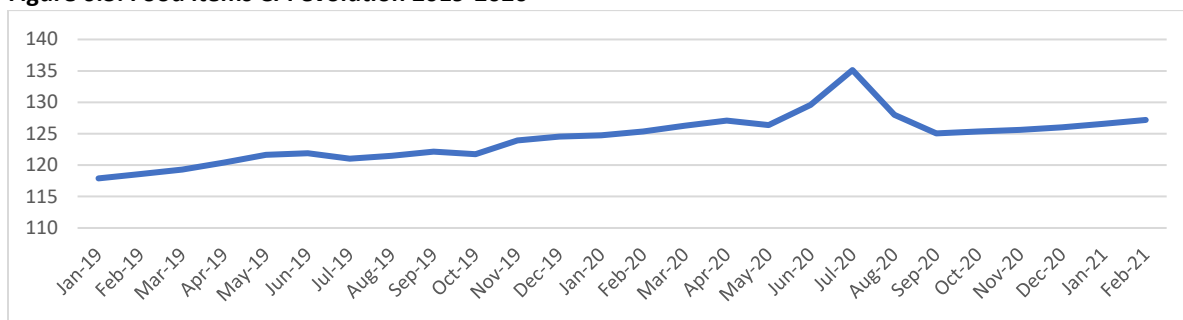

Source: Authors' calculation based on Djibouti COVID-19 phone survey, 1st, 2nd and 3rd waves.
Notes: Waves 1 and 2 only included national households. Statistics are based on cross-sectional proportions and not only the longitudinal sample.

Figure 6.3: Food items CPI evolution 2019-2020

Source: Institute of National Statistics of Djibouti (2021).

**ACCESS TO
SERVICES**

When needed, access to healthcare was better among national households than refugee households (Figure 7.1). In wave 3, the need for health services increased compared to previous waves.[18] Half of the national households declared needing healthcare, compared to 36 percent in wave 2 and 17 percent in wave 1. Specifically, 25 percent of households reported needing emergency services, 20 percent immunization, and 19 percent chronic disease care. Nationals are more likely to declare a need of health services than urban refugee households (52 percent versus 25 percent, for any type of health care), while village-based refugee households are more likely to declare being in need of healthcare than their urban counterparts. In terms of access, a positive trend is observed compared to previous waves among the national sample: 90 percent had access when needed, compared to 85 percent in wave 2 and 60 percent in wave 1. Urban refugee households, however, report lower access level to healthcare when needed, than nationals (66 percent versus 90 percent, respectively). Village-based refugees appear to have less difficulty accessing health services than urban refugees[19] as 80 percent of them declared having access to it when needed. For households who did not have access to a health service when needed, the main reasons cited are crowded health centers or hospitals (48 percent) and inability to pay the fees (24 percent) for nationals while refugees[20] report as main barrier the inability to pay fees (38 percent) and inability to afford the trip (31 percent).

Figure 7.1: Need and access to healthcare during the last 30 days (%)
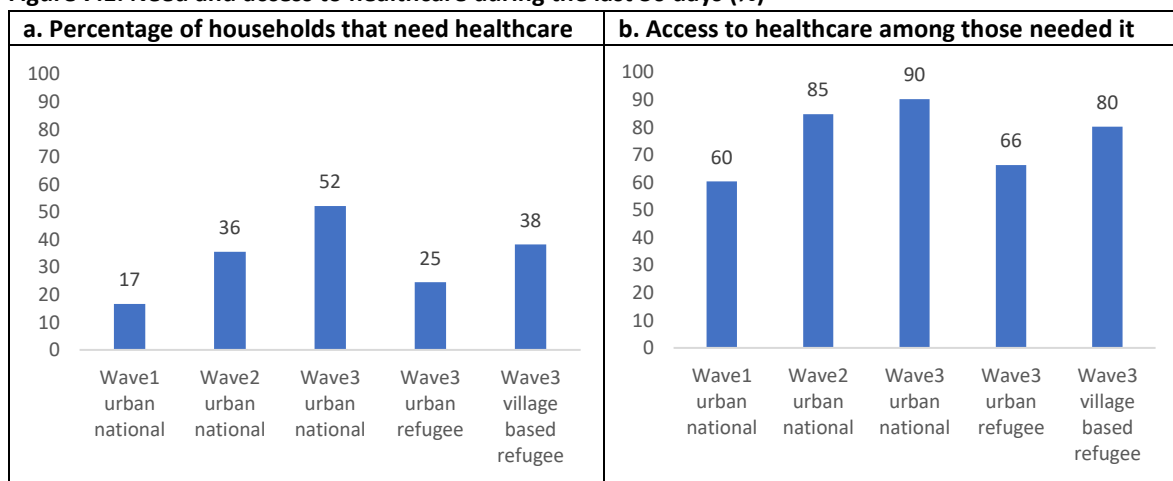
Source: Authors' calculation based on Djibouti COVID-19 phone survey, 1st, 2nd and 3rd waves.
Notes: Waves 1 and 2 do not include refugee sample. Statistics are based on cross-sectional proportions and not only the longitudinal sample.

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[18] The reason behind the increase in need for healthcare is not asked in the survey. Given the low daily rates of detected COVID-19 cases in Djibouti, it is not clear that the pandemic may have increased the need. However, it is possible that the seasonality of diseases in Djibouti partly explains these variations.
[19] As only 52 urban refugee households declared needing healthcare services in the last 30 days, the conclusions on their access to healthcare must be treated carefully.
[20] Sample size does not permit disaggregation between urban and village-based refugees.

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FOOD
INSECURITY

In terms of meals consumed (Figure 8.1), 85 percent of national households reported their children having three meals per day before COVID-19, and 88 percent the week before the survey. That said, children from refugee households are less likely to have eaten three meals per day than children from national households (70 percent and 81 percent for urban and village-based refugees, respectively, the week before the survey). In both samples, however, children from households with a female breadwinner are more likely to eat three meals a day than those from households with a male breadwinner. The working status of the breadwinner seems to correlate with the status of food insecurity of the households. Indeed, households whose breadwinner is not working are much less likely to be able to offer three meals per day to their children than those with a working breadwinner (71 percent versus 87 percent the week before the survey). Moreover, children from households with a breadwinner working in the public sector are more likely to eat three meals a day during the week before the survey than others (91 percent versus 89 percent and 78 percent for private informal and private formal sectors).

Figure 8.1: Proportion of households in which children had at least than 3 meals a day the week before COVID-19 and the week before the survey (%)
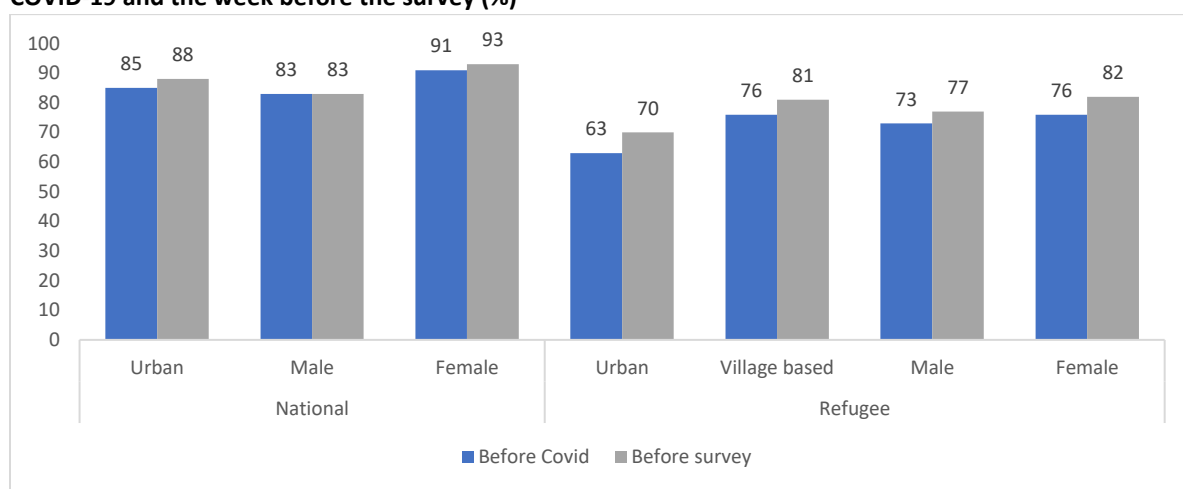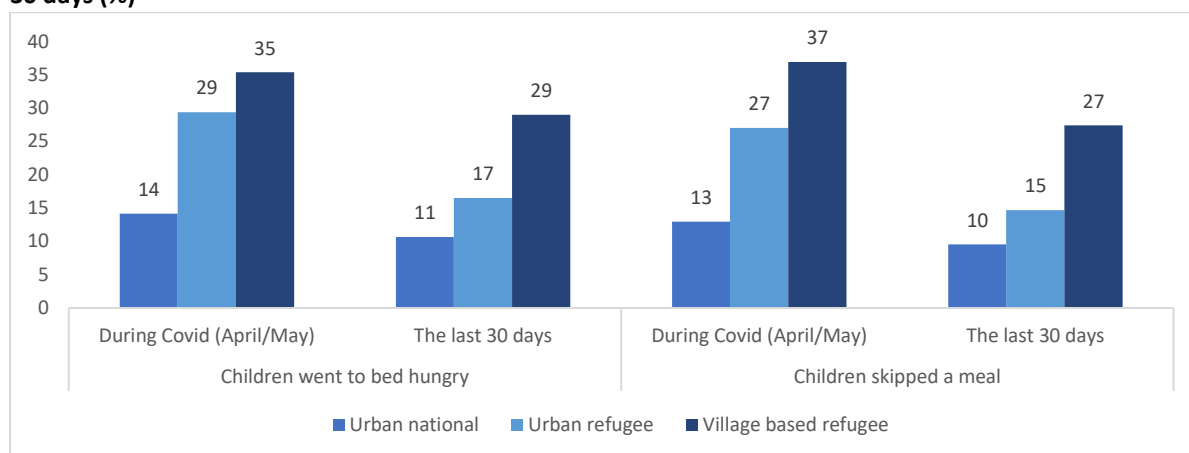

Source: Authors' calculation based on Djibouti COVID-19 phone survey, 3rd wave.
Notes: The category "female" refers to households with a female breadwinner while "male" refers to households with a male breadwinner. **Calculations restricted to households with children.**

Less children went to bed hungry and skipped a meal during the last 30 days to the survey than during the COVID-19 crisis in April/May 2020 (Figure 8.2). However, despite refugees receiving more assistance, differences between national and refugee households are observed. Children from refugee households, particularly those who are village-based, are more likely to go to bed hungry and to skip a meal (both during the COVID-19 crisis and during the last 30 days) than children from national households. For example, in the 30 days prior to the survey, 29 percent of village-based refugee children went to bed hungry, compared to 11 percent of national children, and 17 percent of urban refugees. A similar trend is observed for children skipping a meal. Moreover, there are evident differences according to the working status and sector of employment of the breadwinner. Children from households with a breadwinner who is not working are much more likely to go to bed hungry (30 percent) and to skip a meal (30 percent) the last 30 days than children from a household with a working breadwinner (9 and 7 percent, respectively). Children from households with a breadwinner who is working in the public sector are much less likely to go to bed hungry (4 percent) and to skip a meal (6 percent) during the last 30 days than children from households with a breadwinner working in the private informal (15 percent and 13 percent, respectively) and private formal sectors (17 percent and 12 percent, respectively).

Figure 8.2: Distribution of households according to food insecurity of children during COVID-19 and the last 30 days (%)
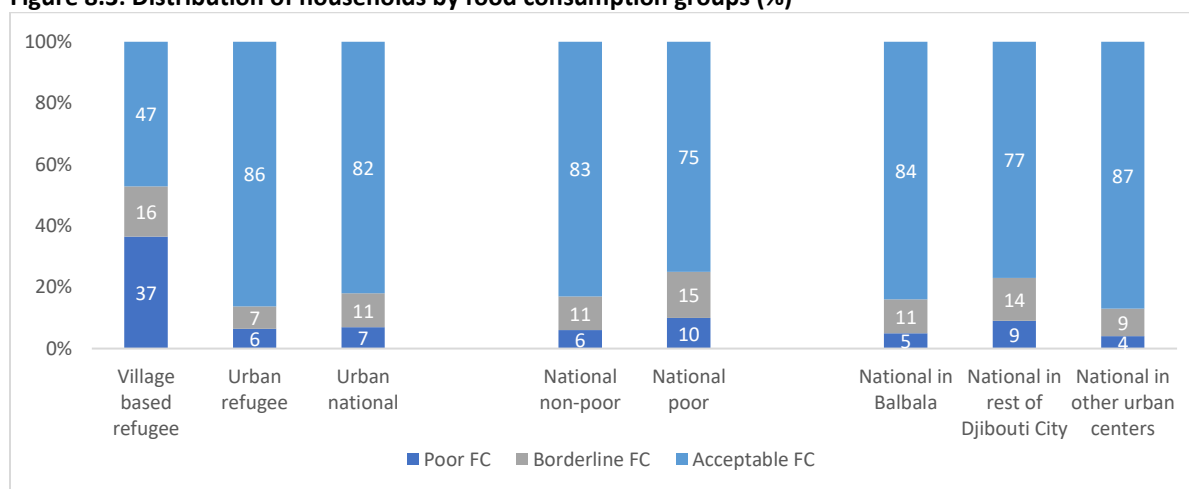

Source: Authors' calculation based on Djibouti COVID-19 phone survey, 3rd wave.
Note: **Calculations restricted to households with children.**

To examine issues related to dietary composition and adequacy, a food consumption score (FCS) based on weighted frequency indicators is calculated using the frequency of consumption of different food groups consumed by households during a 7 day-recall period (see Box 4 for more information regarding the methodology used for computing the FCS). This section draws on the World Food Program's food consumption score module designed to report, inter alia, on food frequency and dietary diversity. Following the World Food Program's approach[21], the score is recoded into a categorical indicator based on standard thresholds.

A relatively large fraction of households has an acceptable food consumption based on the food consumption score with notable differences by refugee status (Figure 8.3). The food consumption of a household is considered poor if the score is inferior or equal to 28, borderline for a score ranging from 28.5 and 42[22], and adequate/acceptable for a score between 43.01 and 160. Respectively, 82, 86, and 47 percent of national, urban refugee, village-based refugee households, have an acceptable FCS above 42. Yet, village-based refugees are more likely to score low on the FCS compared to the host population. Also, the poor national households, as identified by the social registry, are more likely to experience poor food consumption than the non-poor.

Figure 8.3: Distribution of households by food consumption groups (%)

Source: Authors' calculation based on Djibouti COVID-19 phone survey, 3rd wave.
Note: Decomposition by poverty status and location are only available for the national sample.

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[21] For more information: https://resources.vam.wfp.org/data-analysis/quantitative/food-security/fcs-food-consumption-score
[22] The cutoffs of 28 and 42 are used because of frequent use of oil.

Figure 8.4: Stacked food frequency of main food groups (median)

a- National households

b- Refugee households – village-based

c- Refugee households – urban
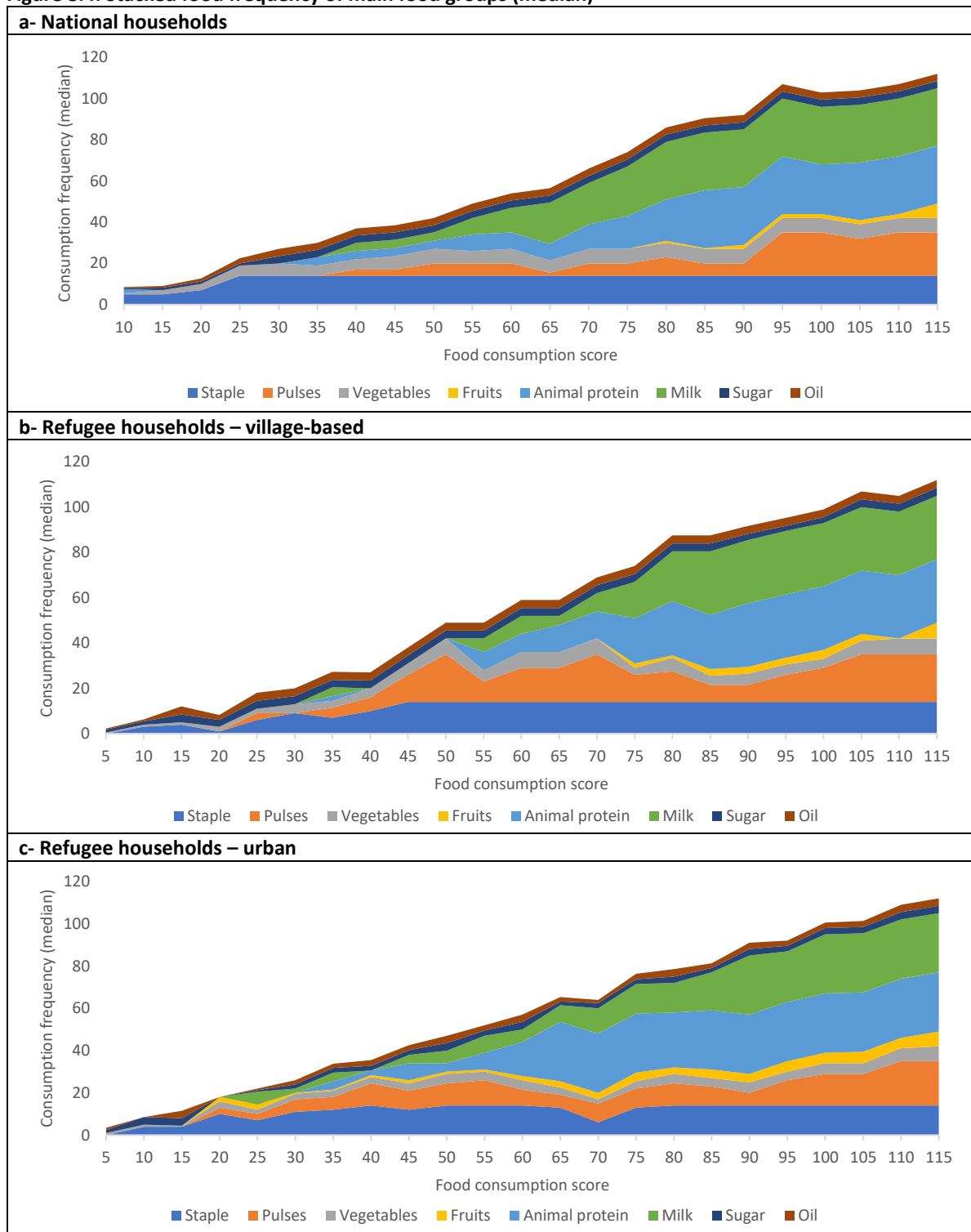
Source: Authors' calculation based on Djibouti COVID-19 phone survey, 3rd wave.

Households' diet is unbalanced at low levels of the food consumption score (Figure 8.4). This pattern is even more evident among village-based refugees, whose animal protein consumption is minimal even at borderline levels of FCS (FCS up to 42). National households scoring low on the FCS mostly eat staple food (grains, rice, …). At these low levels of FCS, consumption of animal protein is rather infrequent, while milk enters household diet

only for households with borderline or acceptable food consumption score. But consumption of vegetables is ubiquitous to all food consumption groups, though, at high levels of FCS, their use tends to be more frequent. Similarly, very few kinds of foods are eaten among the refugee population, whose food consumption shows poor diversity even at relatively high levels of the FCS. At low levels of the FCS, empty calories tend to dominate village-based refugee households' diet. Consumption of pulses is infrequent among these households. This qualitative dissimilarity in the composition of diet between the refugee and national samples is unlikely to be fully explained by preferences or cultural differences, and may be a consequence of economic conditions.

There are visible differences in food consumption patterns across breadwinner's employment characteristics (Figure 8.5). While 83 percent of the households with a working breadwinner have an acceptable level of food consumption, this concerns only 58 percent of the households with a non-working breadwinner. And 27 percent of the non-working breadwinners have a poor food consumption score. Thus, households with a non-working breadwinner are more likely to have poor food consumption than households with a working breadwinner. The pattern is very similar for the workload of the breadwinner. Around 23 percent of the households with a breadwinner who worked less than usual have poor food consumption while they are 5 percent among the households with a breadwinner who worked as usual. Finally, there are only 3 percent of households with a poor food level among those who worked less and received a full payment, while households with a poor food consumption represent 26 percent of those who received a partial payment and 20 percent of those who received no pay at all.

Figure 8.5: Employment characteristics of the breadwinners according to their food consumption score (%)
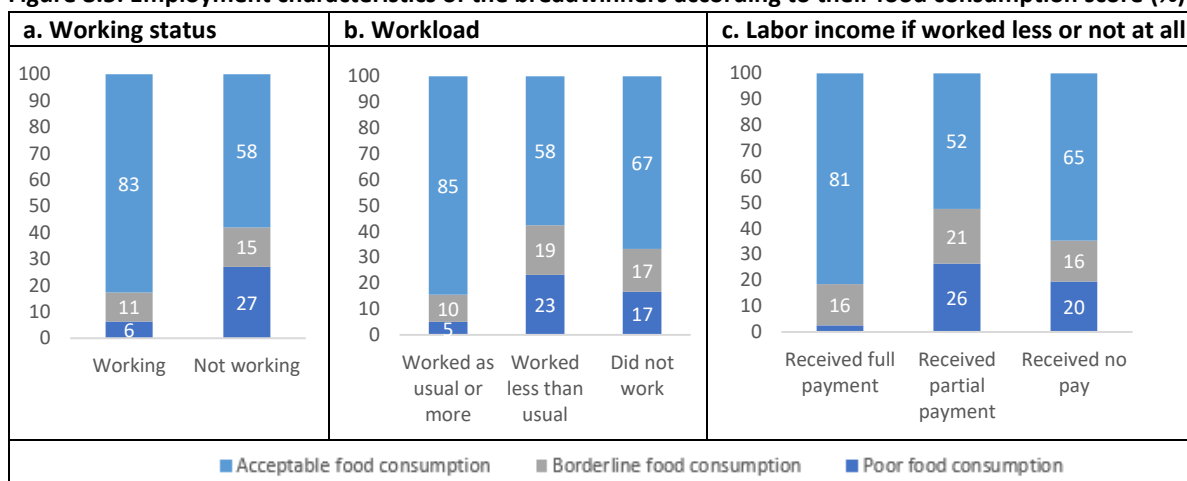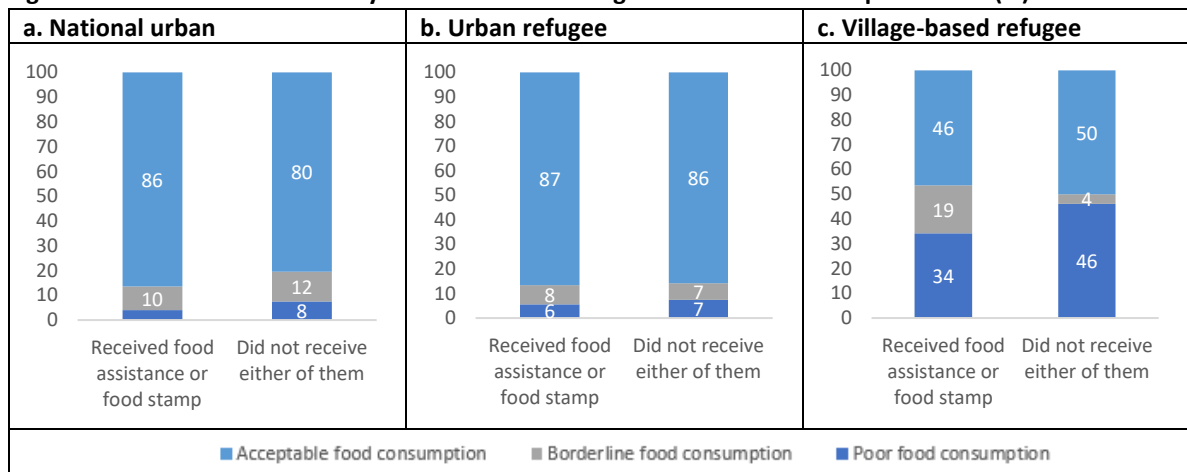

Source: Authors' calculation based on Djibouti COVID-19 phone survey, 3rd wave.
Notes: The figure includes the full sample, including the national and refugee households. The category "working" refers to the households with a breadwinner who worked the week before the survey and the category "not working" refers to the households with a breadwinner who did not work the week before the survey.

Patterns in the food consumption scores are also observed depending on assistance received by the households in the last 30 days (Figure 8.6). National households who received food assistance or food stamp in the last 30 days are more likely to have an acceptable food consumption score than the ones who did not receive any of it. For example, households with an acceptable food consumption represent 86 percent of the national households who received food assistance or food stamp in the last 30 days while they are only 80 percent among those who did not receive either of them. There are almost no differences among urban refugee households according to their likelihood of received assistance. Those with an acceptable food consumption represent 87 percent of the households who received assistance versus 86 percent of the households who did not receive any assistance. For village-based refugees, 46 percent of those who received assistance have an acceptable food consumption score, compared to 50 of those who did not receive assistance. However, more of those who received food assistance or food stamp have a borderline food consumption score. But there are more village-based refugee households with a poor food consumption among those who did not received any

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food assistance or stamp than among those who received it (46 percent versus 34 percent, respectively). Notice that this does not reflect neither the effect of the program nor the selection criteria to assistance, as household with poorer food consumption score may have been selected, and households who are selected may have improved food consumption score.

Figure 8.6: Assistance received by households according to their food consumption score (%)


| a. National urban | b. Urban refugee | c. Village-based refugee |

■ Acceptable food consumption ■ Borderline food consumption ■ Poor food consumption

Source: Authors' calculation based on Djibouti COVID-19 phone survey, 3rd wave.

VIEWS ON VACCINATION

In general, the acceptance rate of a potential vaccine differed along the various groups (Figure 9.1). Most of the respondents reported that they would accept a vaccine known as safe and efficient: 73 percent of the nationals and 85 percent of the refugees. The proportion is slightly lower for a vaccine recommended by the employer, with a larger difference among the nationals than refugee households. In both sub-samples, female respondents are less likely than male respondents to accept a vaccine even if it is known to be safe and efficient, noting that respondents in wave 3 had not been selected at random and may not represent the view of all the adults in the household. Urban and village-based refugees do not differ significantly in their attitudes towards vaccines. Respondents from households whose breadwinner works in the public sector are slightly more likely to accept a vaccine recommended by an employer than another vaccine (72 percent versus 69 percent, respectively). However, the reverse is observed for respondent from households whose breadwinner works in the private sector (both informal and formal). The acceptance rate of a vaccine known as safe and efficient stands at 70 percent among the households with a breadwinner who is not working (neither the week before the survey, nor before COVID-19). Among the nationals who do not totally accept a vaccine, the main reasons cited are first safety concerns (62 percent), followed by "do not think it is efficient" (26 percent) and religious or community-based objections (16 percent). Among the refugee respondents, safety concerns are also the main preoccupations (72 percent), but the second reason is "because it comes from abroad" (15 percent).

Figure 9.1: Proportion of respondents who would totally accept a vaccine (%)
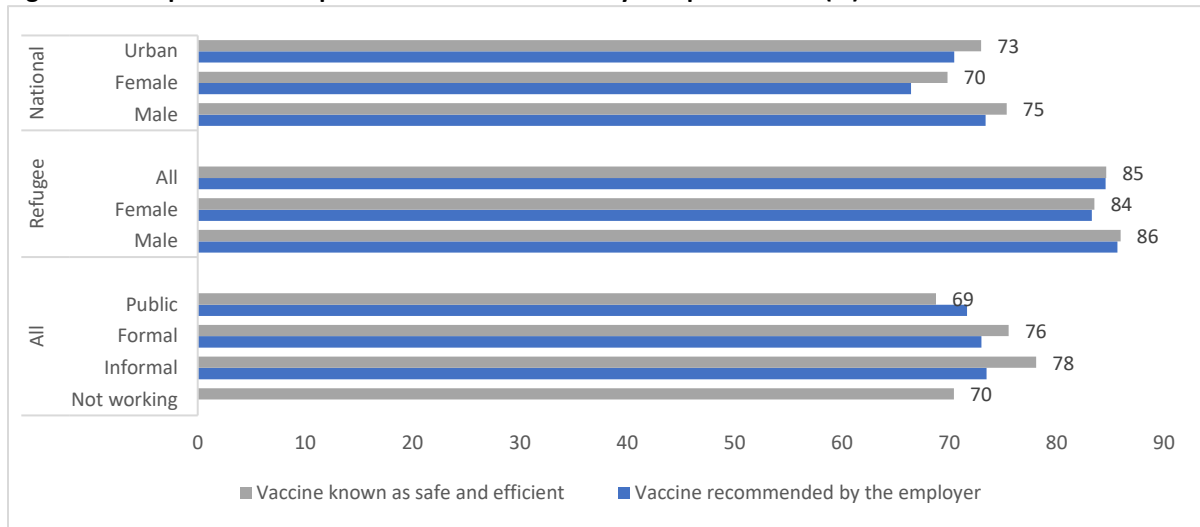
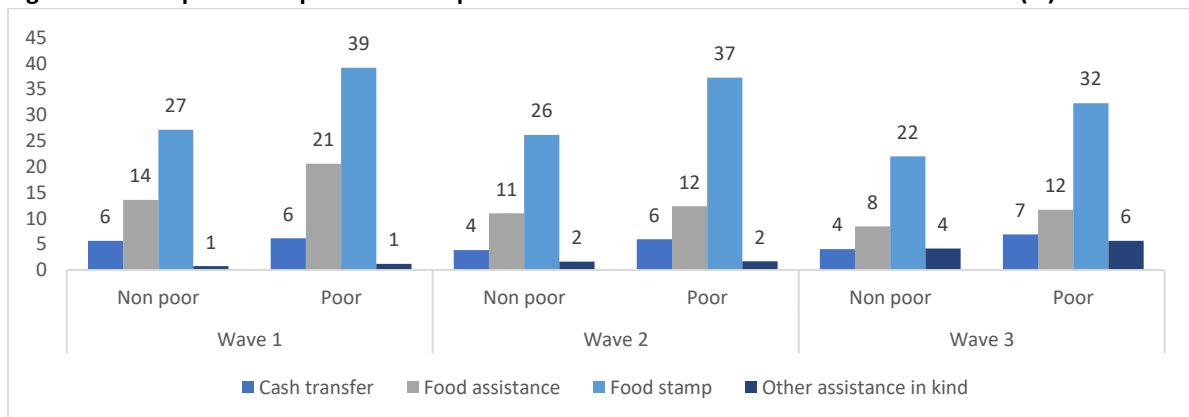Source: Authors' calculation based on Djibouti COVID-19 phone survey, 3rd wave.
Notes: The category "female" refers to households with a female breadwinner while "male" refers to households with a male breadwinner. The distinction by sectors of employment (public, formal, informal) concerns all the households whose breadwinner was working before the survey or whose breadwinner was working before COVID-19 but not the week before the survey. The category "formal" refers to the private formal sector and "informal" refers to the private informal sector. The category "not working" refers to households whose breadwinner was neither working the week before the survey, nor before COVID-19.

INSIGHT ON POOR NATIONAL HOUSEHOLDS DURING A PANDEMIC

Breadwinners from poor and non-poor national[23] households have the same probability to have worked the week before the survey (83 percent). Moreover, there is no difference in the probability of working less than usual or not working at all between poor and non-poor breadwinners. However, among the national breadwinners who worked less than usual or not at all the week before the survey, more of the poor households reported having received no pay compared to the non-poor (64 percent versus 51 percent, respectively). Conversely, more of the non-poor reported having received a full payment compared to the poor (16 percent versus 5 percent, respectively). In terms of safety nets, the proportion of households who received any kind of assistance (except assistance in kind) decreased for both poor and non-poor households (Figure 10.1). Nevertheless, poor households are more likely than the non-poor ones to receive any kind of assistance.

Figure 10.1: Proportion of poor and non-poor national households who received assistance (%)

Source: Authors' calculation based on Djibouti COVID-19 phone survey, 1st, 2nd and 3rd waves.
Notes: This figure only includes national households as poverty status is not available for the refugee sample. Statistics are based on cross-sectional proportions and not only the longitudinal sample.

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[23] The poverty status is only available for the national sample. Therefore, this section refers only to national households.

If the need of health care has increased for all the households compared to previous waves (Figure 10.2), poor households are more likely to need health services than the non-poor (59 percent versus 51 percent). Moreover, access to health services have increased since March 2020, and both poor and non-poor households have the similar probability to access health services when they need it. Poor households are more likely to face food insecurity issue than the non-poor households. Around 13 percent of the poor households had children skipping a meal in the last 30 days to the survey, while it is the case for 9 percent of the non-poor households. The same pattern is observed for households whose children went to bed hungry or had less than 3 meals per day. Finally, respondents from poor households are slightly less likely to fully accept an eventual vaccine known as safe and efficient (71 percent) than those from non-poor households (73 percent).

Figure 10.2: Proportion of poor and non-poor national households that needed and had access to health care (%)
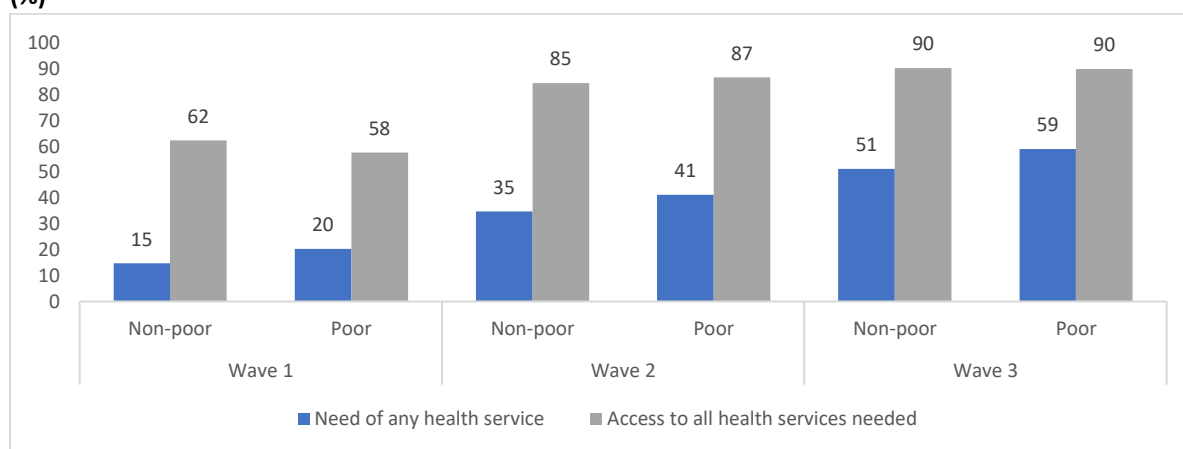

Source: Authors' calculation based on Djibouti COVID-19 phone survey, 1st, 2nd and 3rd waves.
Notes: This figure only includes national households as poverty status is not available for the refugee sample. Statistics are based on cross-sectional proportions and not only the longitudinal sample.

CONCLUSION

Almost one year after recording the first case of COVID-19 in Djibouti, the rate of infection has slowed. Despite a return to normal life in Djibouti, the potential impacts of the pandemic may persist on the well-being of the households. This third wave of the COVID-19 survey, collected between December 2020 and January 2021 aimed to follow the recovery of the economic outcomes while also capturing new topics such as shock coping strategies, refugee households' welfare and attitudes towards the newly developed COVID-19 vaccines.

Economic activity has increased compared to waves 1 and 2 of this survey. Around 83 percent of the national breadwinners worked the week before the survey versus 77 percent in wave 2 and 58 percent in wave 1. The intensity of the economic activity is also higher than in the previous waves. Among those who worked before the survey, the proportion of national breadwinners who worked less than usual or did not work has decreased from 42 percent in wave 1 to 18 percent in wave 3. Moreover, less households reported experiencing a decrease in their sources of income compared to the previous waves. Thus, a rebound in economic activities (both in terms of workload and income) is observed for the Djiboutian households as the COVID-19 situation continues to improve.

However, for the breadwinners who still suffer from the fallouts of the pandemic, the situation may have worsened. The reduction of workload is more associated with no pay than during the previous waves. Half of the national breadwinners who worked less than usual received no pay whereas it was the case of 35 percent of the breadwinners in wave 2. Moreover, much less breadwinners received partial payment compared to the previous waves. These results suggest a situation where fallout of the pandemic may be felt more severely by vulnerable workers.

The situation of village-based refugee households in Djibouti shows signs of precarity. Their economic activity is much less high than among the nationals and urban refugees with only 49 percent of their breadwinners

working the week before the survey (versus 83 percent for the nationals and 68 percent of urban refugees). The village-based refugee breadwinners were also more likely to report a decrease of workload (38 percent) than national breadwinners (18 percent), and urban refugees (15 percent). In addition, refugee breadwinners appear to be engaged in more vulnerable activities as most of the refugees work in the informal sector (87 percent) while it is the case of half of the national breadwinners. Based on retrospective data, it appears that the economic recovery seems to take more time for the refugee households than the nationals, considering their vulnerable pre-COVID-19 position.

Village-based refugees' food security trails behind urban refugees and nationals. Among village-based refugees, a larger proportion declared their children having skipped a meal in the past 30 days than national and urban refugee households. Significantly, while 82 percent of national households and 86 percent of urban refugees have an acceptable food consumption score, just 47 percent of village-based refugee households do. While national households' access to basic goods continues to improve, and urban refugees reporting similar access levels, village-based refugees fare significantly worse than their urban counterparts. In contrast, urban refugee households' access to healthcare, when needed, trails behind that of village-based refugees.

The safety nets in Djibouti play an important role in protecting the most vulnerable. Indeed, even if the proportion of national households who received assistance is declining in almost all the types of assistance compared to the previous waves, refugee households are much more likely to receive any kind of assistance compared to nationals. A lower proportion of households with poor food consumption is observed among those who receive food assistance, particularly for village-based refugees.

Among the national sample, breadwinners from both poor and non-poor households, as identified by the social registry, have a similar probability to have worked the week before the survey. However, among the national breadwinners who worked less than usual or not at all the week before the survey, more of the poor households reported having received no pay compared to the non-poor. Poor households are more likely to need health services than the non-poor but have the similar likelihood to access health services when needed. Additionally, poor households are more likely to face food insecurity issues than the non-poor households.

Notably in this wave of the surveys on the impact of COVID-19 on households in Djibouti, data on individuals' views on the vaccine had been collected and revealed that most of the respondents reported that they would accept a vaccine known as safe and efficient, with a higher acceptance rate among the refugee households.

Box 1. Sampling strategy and sampling weights in wave 3

The sampling strategy of the first two waves of the COVID-19 survey provided point estimates of key indicators with sufficient precision for the following three strata: (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 for the Djiboutian sample of this survey. The social registry is an official database of households in Djibouti that may benefit from poverty alleviation efforts including as targets from public transfers. 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 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.

Like the first two waves, the third wave drew from the sampling frame of households from the Ministry of Social Affairs and Solidarity's social registry that reported telephone numbers. This wave's sample combined a panel of households interviewed during the first two waves, to which was added a replacement sample to compensate for attrition. The data set consisted of 1,383 interviewed households with complete information that were representative of the urban population, out of which 990 households entered the survey since the first wave and 393 were added as replacement households in either the second or third wave. The sampling strategy allows for disaggregation by poverty status[24] and by three survey domains, being Balbala (463 households), rest of Djibouti city (482 households) and urban areas outside Djibouti city (438 households). Table A1 presents the breakdown of the sample of Djibouti nationals by survey domain.

Table A1: Sample of Djibouti nationals broken down 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	324	139	463
Rest of Djibouti City	35.5	315	123	482
Other urban areas	10.4	351	131	438
Total	**100**	**990**	**393**	**1,383**

In addition to the sample of Djibouti nationals, the third wave included a refugee sample representative of the refugee population present in Djibouti. This sample consisted of 564 cases with complete information drawn from three refugee village sites (Ali Addeh, Holl Holl, and Markazi) and Djibouti City. The population bias in the national sample results in an expected lower bound of differences between nationals and the refugee population—meaning that so long as the excluded nationals are better off than returnees on average, as is strongly presumed, the true gap between refugee households and host are larger than exhibited here. The sampling weights for the refugee sample are designed to adjust for differences in design and non-response. The refugees are distributed across four broad locations: Djibouti city and Balbala, Holl-Holl, Ali-Addeh, and Markazi. The population estimates of refugees and asylum seekers in these locations were 2936, 1707, 4408, 1398 households, respectively. Further, the weights are adjusted for non-response within the refugee sample, based on the inverse predicted probability of responding to the survey, conditional on observable characteristics (location, household size, gender, age, education of the household head, and year of arrival to Djibouti). See Box 3 for details on the refugee sample.

For the national sample, 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

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[24] 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.

poverty status and by location, and of the refugee population present on the three main refugee villages and Djibouti City. The sampling frame of the Djibouti nationals, 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.

Box 2: Attrition between wave 1 and wave 3

Table A2.1: Composition of the wave 3 sample and panel status

Panel status	Frequency	Percentage
Household from the original national sample, interviewed in waves 1-3	684	35.1
Replacement national household from wave 1, interviewed in waves 1-3	306	15.7
Replacement national household from wave 2, interviewed in waves 2 and 3	190	9.8
Replacement national household from wave 3, interviewed in wave 3	203	10.4
Household from the refugee sample, interviewed in wave 3	564	29
Observations	**1,947**	**100**

Source: Djibouti COVID-19 phone survey, 1st, 2nd and 3rd waves.

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, except for household size where we observe that smaller households were more likely to attrit.

Table A2.2: Log-odds ratios of regressing an indicator of attrition on household characteristics

	1(Drop out)						
[Base=Balbala]							
Other urban areas	0.137	0.134	0.072	0.060	0.053	0.051	0.049
	[0.180]	[0.181]	[0.185]	[0.185]	[0.186]	[0.186]	[0.186]
Rest Djibouti Ville	-0.144	-0.145	-0.177	-0.198	-0.207	-0.202	-0.200
	[0.189]	[0.188]	[0.189]	[0.191]	[0.192]	[0.192]	[0.192]
Replacement in wave 1 (Yes=1)		-0.015	-0.015	-0.014	-0.015	-0.014	-0.015
		[0.021]	[0.021]	[0.021]	[0.021]	[0.021]	[0.021]
Log-household size			-0.304**	-0.282**	-0.289**	-0.317**	-0.312**
			[0.120]	[0.123]	[0.125]	[0.133]	[0.134]
Sex of household head				0.164	0.154	0.156	0.157
				[0.160]	[0.161]	[0.161]	[0.161]
Age of household head					0.002	0.003	0.002
					[0.005]	[0.005]	[0.005]
Poverty status (Poor=1)						0.203	0.201
						[0.143]	[0.143]
[Base=Worked week before survey]							
Worked week before survey (No)							0.071
							[0.160]
Worked week before survey (Don't know)							-0.054
							[0.560]
Constant	-0.711***	-0.659***	-0.156	-0.389	-0.472	-0.469	-0.499
	[0.129]	[0.149]	[0.252]	[0.354]	[0.397]	[0.397]	[0.404]
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

Box 3: Description of the refugee sample

Sampling Frame:

The refugee sample comes from a joint project of MASS, World Food Program (WFP) and UNHCR that organized the displacement survey "Enquête de profilage dans les villages de réfugiés 2019" collected by INSD. The aim of that survey was to understand the socio-economic profile of refugee and asylum-seeker households in Djibouti. The sampling was done by a random drawing at one degree among refugee and asylum-seeker households living in four independent strata (Table A3.1): Djibouti city, the refugee villages of Ali Addeh, Holl Holl and Markazi. The sampling frame was the database called "proGres" which included the list of each individual refugee and asylum seeker living in Djibouti regardless of origin, nationality and reason for arrival. Among the Refugees Survey sample, the refugee sample of the COVID-19 survey was a random sample of those households from the 2019 survey that had a phone number.

Table A3.1: Distribution of households by location in the sampling frame

	Ali Addeh	Holl Holl	Markazi	Djibouti City	Total
Number of households	2,576	954	178	1,145	4,853
Percentage of households	53.1	19.7	3.7	23.6	100

Source: Enquête de profilage des réfugiés et demandeurs d'asile, 2019

Phone Survey Sample December 2020-February 2021:

Most refugee households come from neighboring countries and live in temporary or non-residential housing (see Table A3.2). Because the sample was drawn from a frame that is 2-3 years old, the results here are properly understood as representing those who have been in the country at least three years. The refugee sample is split nearly evenly between those who have been in the country for 3-5 years (27.8 percent) and those who spent between 6 and 10 years in Djibouti at the time of the survey, in 2019 (27.4 percent), while those who arrived more than 10 years ago represent 41.2 percent. Few refugees (9.4 percent) are alone in their household; most of them came with several household members (28.3 percent have a household of 2-4 members and 62.3 percent have at least 5 members in their household). Most of the refugees are single (67.2 percent), while 28.1 percent are married, and 2.4 percent are widowed. The majority of the refugees had no recent occupation (37.7 percent). Around 34.4 percent of the refugees reported being a student as the most recent occupation, and the other 27.8 percent had various jobs (such as housekeepers for 11.8 percent of them or fishermen for 1.1 percent of them).

Table A3.2: Country of origin and housing of interviewed refugee households (%)

Country of origin	All	Urban	Village based	Type of housing	All	Urban	Village based
Ethiopia	20.6	23.2	19.5	Residential housing	12.2	20.5	9.2
Somalia	50.2	13.4	64.5	Non-residential housing	34.0	66.7	21.8
Yemen	24.2	56.9	11.6	Tent/Toukoul/Kaolo	47.3	9.2	61.5
Other	5.0	6.6	4.4	Non-permanent structure	4.8	2.3	5.7
				Spontaneous housing	1.7	1.3	1.8
Observations	**564**	**184**	**380**	**Observations**	**546**	**175**	**371**

Source: Djibouti COVID-19 phone survey, 3rd wave.

Urban nationals, urban refugees, and village-based refugees show tremendous heterogeneity regarding several characteristics (Table A3.3). Mean household size is larger among urban nationals compared to either group of refugees; but urban refugees tend to live in smaller households compared with village-based refugees. While most households in the national subsample are male headed, the proportion of households with a male head is smaller among either urban or village-based refugees. These differences clearly support segmenting the analysis across the national, urban refugee, and village-based refugee subsamples.

Table A3.3: Selected characteristics of national, urban refugee, village-based refugee sub-samples			
Characteristics	Urban national	Urban refugee	Village-based refugee
Household size (mean)	6.2	3.4	4.7
Age of household head (mean)	49.0	41.5	40.3
Household head is male (%)	83.2	67.6	48.0

Source: Djibouti COVID-19 phone survey, 3rd wave.

Box 4: Output of a principal-components factoring analysis on food consumption score

A principal-components factoring analysis is used to validate consistency in the data based on eight food groups recommended by the WFP (excluding condiments). It indicates that food consumption can be regrouped along three main dimensions explaining approximately 70 percent of the variance in consumption frequency. Animal protein, milk, and fruits represent the main dimension of food consumption (explained variance = 24 percent), while high calories foods, consisting of oil and sugar, define the second component of food consumption (explained variance = 23 percent). Finally, pulses, grains, and tubers define the third most important dimension of food consumption (explained variance = 18 percent). Examination of these three components suggests no redundant grouping of food items, as most food groups have high unique contribution to the explained variance.

Number of obs = 1,947

Factor	Eigenvalue
Factor1	2.52
Factor2	1.76
Factor3	1.01
Factor4	0.84
Factor5	0.63
Factor6	0.48
Factor7	0.39
Factor8	0.36

Factor	Variance	Difference	Proportion	Cumulative
Factor1	1.96	0.09	0.24	0.24
Factor2	1.87	0.39	0.23	0.48
Factor3	1.47	.	0.18	0.66

LR test: independent vs. saturated: chi2(28) = 3534.01 Prob>chi2 = 0.0000

Pattern matrix and unique variances

Variable	Factor1	Factor2	Factor3	Uniqueness
Staple	0.28	0.24	0.67	0.42
Pulses	0.06	-0.06	0.74	0.44
Vegetables	0.10	0.47	0.61	0.40
Fruits	0.75	-0.27	0.18	0.34
Animal protein	0.85	0.00	0.20	0.24
Milk	0.76	0.30	-0.11	0.32
Sugar	0.06	0.84	0.03	0.29
Oil	-0.05	0.84	0.15	0.26

Source: Djibouti COVID-19 phone survey, 3rd wave.