SAVING LIVES CHANGING LIVES

The Impact of COVID-19 on Households in Nepal

Fifth Round of mVAM Household Livelihoods, Food Security and Vulnerability Survey 2021

UKaid from the British people

WFP World Food Programme

October 2021

This page has been intentionally left blank

Contents

List of Figures

The Impact of COVID-19 on Households in Nepal

I. Highlights

The findings from the fifth round of the survey show an improvement in the overall food security situation, compared to 2020 and June 2021. In October 2021, 14.1 percent of households had inadequate food consumption and nearly 1 percent of households had poor dietary diversity. In comparison, in April and December 2020 and June 2021, 23.2, 16.8 and 15.4 percent of households had inadequate diet, respectively. Food insecurity prevalence has also returned to the pre-COVID-19 levels, when in 2016, 14.9 percent of Nepalese households ate inadequate diets[1]. Similarly, 7.2, 1.7 and 1 percent of households had poor dietary diversity in the April and December 2020, and June 2021 surveys, respectively. The nutrition situation of children between 6-23 months of age, measured by minimum dietary diversity, while slightly improved compared to 2020, deteriorated in October 2021 compared to June 2021. The proportion of children not meeting the minimum recommended dietary diversity rose to 40.4 percent from 38.5 percent in June 2021 but declined from 45.9 and 42.7 in April and December 2020 respectively.

Similarly, proportion of households reporting lack of food to meet the needs of their family members dropped to 2 percent in October 2021 from 7 percent in June 2021. Current levels are comparable to the results of the December 2020 survey, when 2.5 percent of households reported food insufficiency.

The findings further highlight distinct regional disparities and large differences in food insecurity across different provinces. Food insecurity remained high in Karnali and Sudurpaschim provinces, with 19.5 and 18.8 percent of households consuming inadequate diet, respectively, while in Bagmati province 11.0 percent of households had inadequate food consumption. Household-level food insufficiency was more pronounced in Karnali, as reported by 4.6 percent, followed by Province 2 (3.2 percent). Bagmati and Gandaki had the lowest prevalence—both with 1.1 percent of households reporting lack of food to meet their needs. The relatively lower insufficiency for household food stock indicates that people often purchase food commodities in advance during festivals, together with harvesting season at the time of survey which normally increase the household food stock.

[1] The Annual Household Survey V 2016/2017, Central Bureau of Statistics

An upward trend in reliance on market purchase for household-level food sourcing was found, with more than 67 percent of households purchasing food from market, while nearly 33 percent of food source for household consumption was from their own production. The gradual increase in the reliance on markets for household food consumption could be an increasing trend of urbanization, contributed by increased road access and ease of COVID-19 pandemic lockdown as well as the festival seasons when people normally purchase food commodities from the market.

Despite the improvement in food security status, the survey findings continue to show the persistent adverse impact of the COVID-19 crisis and the subsequent widespread disruptions on livelihoods of Nepalese households. In October 2021, 33.2 percent of households reported a reduction in income and 5.4 percent job loss attributed to the COVID-19 pandemics. While this is an improvement compared to June 2021, when 13.5 percent of households reported a job loss and 44.6 percent a reduction in income, this is nearly 60 percent more than job loss and income reduction observed in December 2020.

Job loss was relatively more prevalent in Province 1 (8.9 percent), followed by Province 2 (7.9 percent) and Karnali province (5.3 percent). Income reduction was the highest in Province 2 (54.9 percent), followed by Sudurpaschim (38.9 percent) and Province 1 (36.3 percent). Moreover, nearly 3 percent of households adopted a negative coping behaviour to address food shortages, with coping strategies chiefly aimed at income generation. This is a sharp decline compared to June 2021 and December 2020, when 10.9 and 7.4 percent of households adopted negative coping strategies respectively.

COVID-19 pandemic has had a more severe impact on certain types of livelihoods. The findings demonstrate that loss of income source caused by the COVID-19 crisis was found to be relatively more prevalent for livelihoods dependant on tourism, cereal-based agriculture and remittance, followed by daily wage in both off-farm and farm sectors. The most severe income reduction was experienced by livestock farming, tourism, daily wage labourers in the farm sector, followed by medium- and small-size businesses. Likewise, relatively higher proportion of job loss and income reduction was found among households having persons with disability and chronic illness.

Food insecurity was found to be more prevalent among certain types of income sources, primarily those relying on daily wage labour in off-farm and farm sectors and cash and high value crops, cereal based agriculture, and households depending on tourism sector. Similar to the findings from previous rounds, the same socio-economic characteristics were found to be associated with food insecurity: households with low education levels, vulnerable households having persons with disability, and households living in rural areas were relatively more food insecure. Similarly, higher prevalence of inadequate food consumption was found among households in the lowest wealth quintile, compared to the higher ones, as measured by household assets.

The continued impact on job loss and reduction in income, as the proportion of households reporting job loss and income reduction were consistent and significantly associated with the impact of COVID-19 crisis over the period, again led to worsening of food security: inadequate food consumption and food insufficiency were more common among households that reported job loss and income reduction, compared to those that did not experience it.

The COVID-19 pandemic has impacted many spheres of the society. The findings show that increase in food prices was the major concern during the COVID-19 pandemics as reported by 25.8 percent of respondents, followed by reduction in income (14.5 percent) and disruption of education institutions (13.5 percent). The primary medical impact of COVID-19 pandemic—getting sick—was reported by 13.5 percent. This clearly highlights the secondary impacts of COVID-19 are of a greater concern for the Nepalese households than the primary medical ones. Additionally, more than 22 percent of respondents suffered from psychological stress due to both primary and secondary impacts of the pandemic. Nearly 2 percent of respondents raised safety concerns for women and girls when accessing hospital/health centres, markets and workplace.

Assistance to address the adverse effects of the COVID-19 was received by nearly 7 percent of respondents, either from government or non-government organizations. The most common form of assistance was food, followed by non-food items.

Regarding the primary health situation during the COVID-19 pandemic, the survey found that more than 23 percent of respondents reported to have at least one family member sick since the start of the second wave of COVID-19, of which 25.8 percent had a COVID-19 test. Of these, 39.2 percent were found positive. However, the results show a sharp increase in the number of people getting COVID-19 vaccine. Out of a total of 85.6 percent households receiving vaccination, 41.7 percent of respondents reported all eligible family members vaccinated, while 43.7 percent of respondents reported having only some of the family members vaccinated. In contrast to this, nearly 15 percent of respondents did not receive COVID vaccine at all.

Though the survey findings indicate an improvement in food security situation, a significant proportion of population still remains food insecure, their livelihoods threatened by COVID-19 , and chronically vulnerable areas have high prevalence of food insecurity. The observed improvements in food security status can also be partially attributed to seasonality, as the festival season and summer crops harvest coincided with the time of survey. The survey findings also give palpable evidence of a significant proportion of Nepalese households being unrelentingly pressurized by COVID-19. While lower than in the first half of 2021, still a large proportion of population is exposed to income cuts and job loss. With dominant reliance of market purchase for food sourcing, negative coping predominantly aimed at income generation, this raises concerns about households' ability to access food, and their overall capacity to withstand further shocks and precarious conditions.

Likewise, the findings from these surveys clearly indicate that the same types of households have consistently experienced more food insecurity since the beginning of the COVID-19 As a result, the above-mentioned socio-economic characteristic and livelihood types may be considered as predictors of food insecurity and livelihood stress, with the expected further worsening if presented with shocks. The volatile economy and slow growth rate, together with partial loss of summer crop caused by the unseasonal flooding during the peak crop season, will likely continue to pressure livelihoods and income generation beyond the most vulnerable groups. Ultimately, this may lead to deepening of pre-existing vulnerabilities, as well as further broadening of exposure to other parts of the population that would be normally less vulnerable.

Measures aimed at economic recovery, income generation and smooth access to food will be critical for mitigation of the adverse effects of COVID-19 on overall vulnerability of Nepalese households, deepening of vulnerabilities and creating newly vulnerable groups.

II. COVID-19 Impact on Households

The prolonged COVID-19 crisis in Nepal, despite some easing seen through 2021, has continued to affect the country's medical sector, economy and in turn household-level livelihood and food security.

Despite the better preparedness and precautionary measures to curb the crisis, the unrelenting pressure of the pandemic presents a continued risk to the vulnerable and poor people. WFP has therefore conducted another round of a nation-wide phone-based survey, with an aim to examine the multifaceted impacts of the continued COVD-19 crisis on food security, livelihoods, and vulnerability. Likewise, to provide insights relevant for programming and targeting, the survey presents an identification of household profiles that were relatively more affected by the ongoing crisis.

This is the fifth round of this survey since the start of COVID-19 pandemic in Nepal in March 2020, with three rounds conducted in 2020 (April, August and December) and 2 rounds in 2021(June and October). Building on the experiences from the 2020 surveys, WFP increased the survey sample size in 2021 to enhance precision of the estimates and more accurately identify the most affected household types. In October 2021, 5,961 randomly selected households were interviewed, covering all 7 provinces and producing a nationally representative sample. The questionnaire included standard WFP modules where possible, covering: i) livelihood and income; ii) access to food and market; iii) food consumption; iv) breastfeeding practices and diet diversity, v) coping behaviors, vi) health status and COVID-19 cases and vii) extensive demographics and household profile to enable identification of household types that are relatively more affected (further detail on methodology is presented in the following sections and in the Annex).

Impact on household food security

The study intends to assess the adverse effect of the second wave of COVID-19 crisis over time, mainly in two dimensions: (1) households' food consumption patterns and changes in food consumption habits, and (2) households' access to food, together with measuring the diet quality of children between 6 and 23 months of age, through assessing minimum dietary diversity.

Food consumption patterns

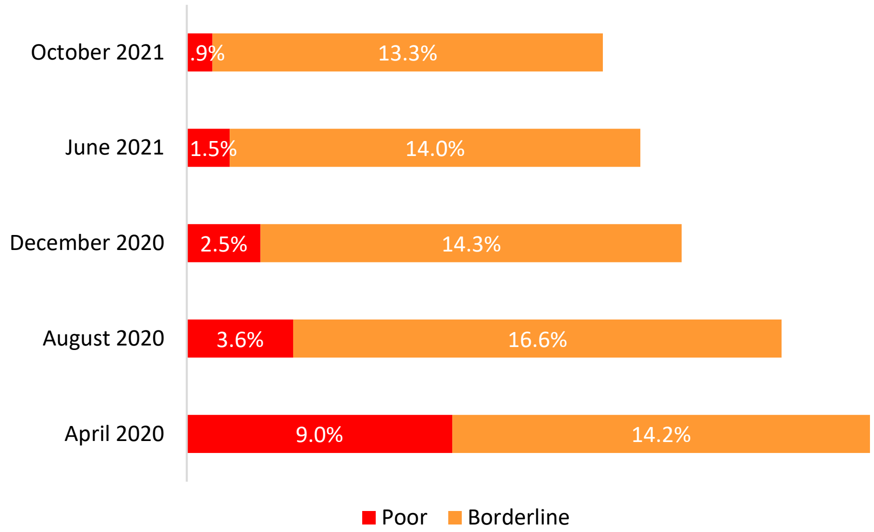
The survey results show that 14.1 percent of households had inadequate food consumption—–with nearly 1.0 percent of households having poor diets and 13.3 percent borderline diets, as measured by Food Consumption Score[2]. This shows a significant improvement in the food security situation since the start of COVID-19 in 2020, as the proportion of households with inadequate food consumption declined from 23.2 percent (April 2020) to 14.1 percent in October 2021 (see Figure 1). Likewise, the proportion of households with poor food consumption shows a sharp decline from the first round of the survey in April 2020, when 9 percent of households had poor food consumption to 1.0 percent in October 2021. However, the number of households with borderline food consumption is only marginally lower than in the previous surveys. The overall findings also indicate that the food security status has returned to the pre-COVID-19 levels. Based on the findings from the Annual Household Survey V (2016/17)[3], 14.9 percent of households consumed an inadequate diet in 2016, which is 0.8 percent more households than in October 2021.

---

[2] The Food Consumption Score (FCS), a tool commonly used as a proxy indicator to assess the food security situation, is a composite score calculated on the basis of dietary diversity, food frequency, and the relative nutritional weight of different food groups which are categorized in 8 groups based on the food types and nutritional values

[3] The Annual Household Survey V 2016/2017, Central Bureau of Statistics

Figure 1: Food consumption groups in April, August and December 2020 and October 2021



At provincial level, Karnali and Sudurpaschim provinces—the most chronically vulnerable provinces in Nepal—remained to present the highest prevalence of food insecurity in Nepal. In October 2021, 19.5 and 18.8 percent of households in Karnali and Sudurpaschim had inadequate food consumption, which is 5.4 and 4.7 percent above the national average, respectively and 8.6 percent higher than in the least vulnerable province—Bagmati. Compared to June 2021, the overall food security status slightly improved both in Karnali and Sudurpashim where proportion of households with inadequate food consumption declined by 0.8 and 2.9 percent, respectively.

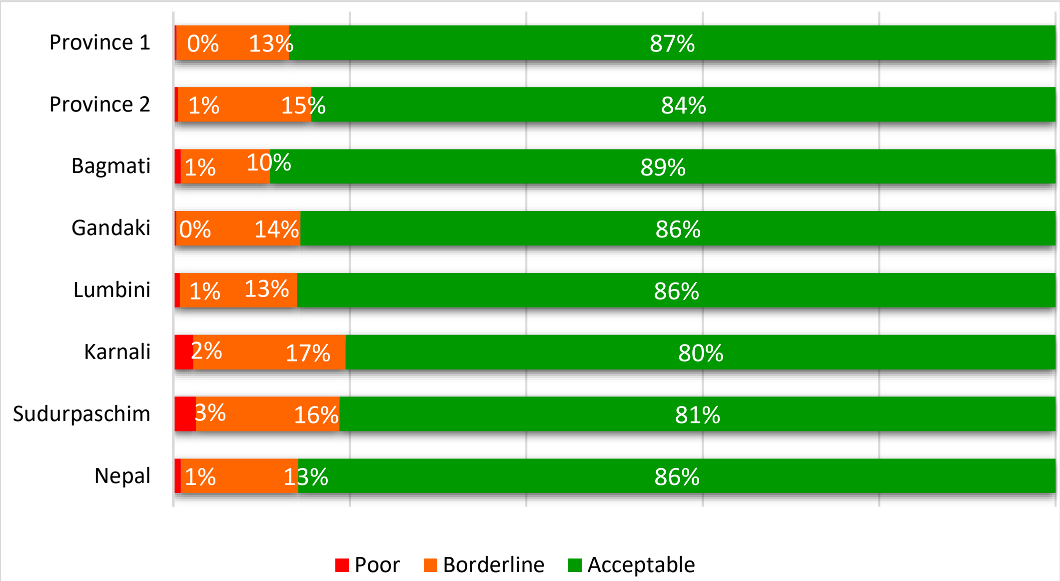
The food security situation in Province 2 also showed an improvement in October 2021, compared to June 2021, with 2.1 percent less households with inadequate food consumption. Similarly, food security situation in other Provinces improved in October 2021 with 0.1 to 1.7 percent less households with inadequate food consumption in Gandaki to Lumbini respectively.

Sudurpaschim had relatively higher prevalence of food insecurity, as measured by poor food consumption, which was 2.6 percent of households, followed by Karnali (2.3 percent). Borderline food consumption was relatively more common in Karnali (17.3 percent), Sudurpaschim (16.3 percent) and Province 2 (15.1 percent), while Bagmati Province had the least proportion of households with border line food consumption, accounting 10.2 percent, followed by Province 1 (12.7 percent).

Compared to June 2021, poor food consumption lingered at the same level in October as in June 2021 in Sudurpaschim Provinces (2.5 percent in June to 2.6 percent in October

2021); while other provinces showed an improvement. Similarly, proportion of households consuming borderline diets increased in Sudurpaschim and Province 2 from 16.3 and 15.1 percent in June to 16.9 and 19.2 percent in October 2021respectively, while it marginally declined or remained same in the remaining provinces.

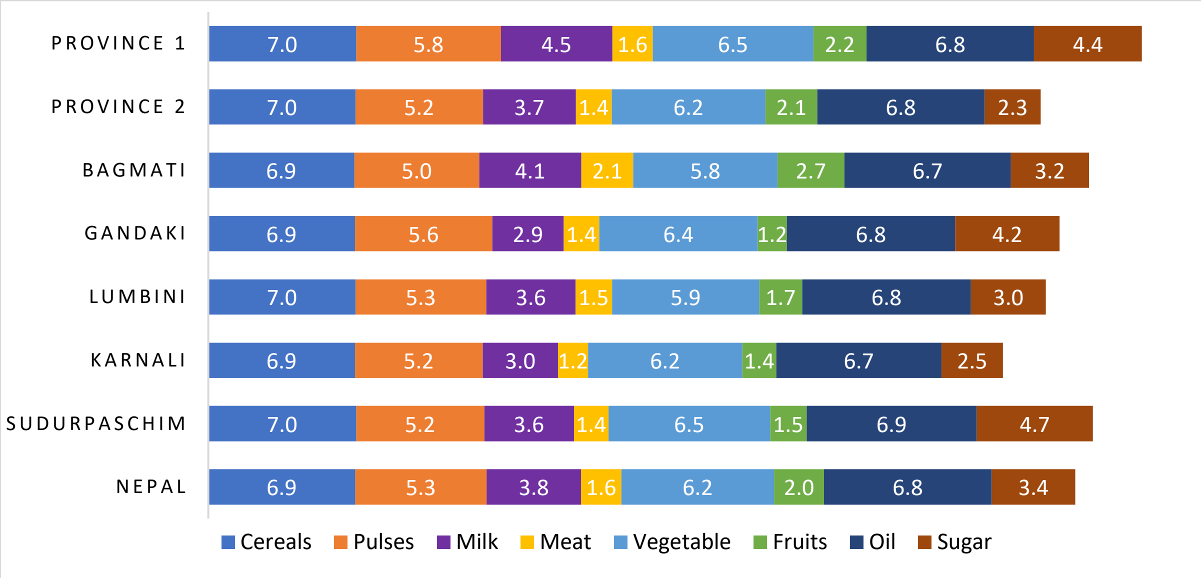
Figure 2: Food consumption group by province



Similar to food consumption, the dietary diversity status showed an improvement in October compared to previous rounds of surveys conducted in 2020 and June 2021. The results demonstrate that out of 8 food groups, the surveyed households consumed on average 6.7 food groups during a 7-day recall period. Households with poor food consumption ate only 3.7 food groups on average, while households with borderline food consumption ate 5.3 food groups. Households that consumed adequate diets consumed 7 food groups on average, while it was 5.2 for those households consuming inadequate diets. Surveyed households consumed cereals, vegetables and oil almost every day, while the consumption of meat, fish and eggs was on average nearly two times a week (Figure 3).

Nearly 0.5 percent of surveyed households had poor dietary diversity—0.5 and 1.3 percent fewer households than in June 2021 and December 2020 respectively and 6.8 percent lower than in April 2020. Similar to the Food Consumption Score, poor dietary diversity was found to be relatively higher in Sudurpaschim province, with 2.0 percent of households consuming a diet that did not meet basic diversity, followed by Karnali Province (1.1 percent).

Figure 3: Average days of consumption of food groups by province



Compared to pre-COVID-19 level, the proportion of households with poor dietary diversity declined in October 2021 from 5.3 percent to 1.5 percent[4], indicating an improvement in overall consumption of diversified foods. However, in terms of the overall diet diversity, household's average food consumption slightly decreased to consuming 6.7 food groups in October 2021 from 6.9 food groups in 2016.

Household-level food availability is often considered as a useful proxy indicator to assess household food security status. This indicator is particularly pertinent to measure food security situation during the COVID-19 pandemic and the subsequent widespread disruptions that adversely affected access to commodity markets—physical and economic. The survey therefore examined food sufficiency at household level, asking whether households had adequate quantity of food to meet their basic needs during the recall period—in one week prior the survey. Given the above-mentioned implications of the COVID-19 crisis, this indicator offers valuable insights on the extent of the current precarious conditions on household vulnerability, particularly when combined with the reported reasons for insufficiency and impact on livelihoods.

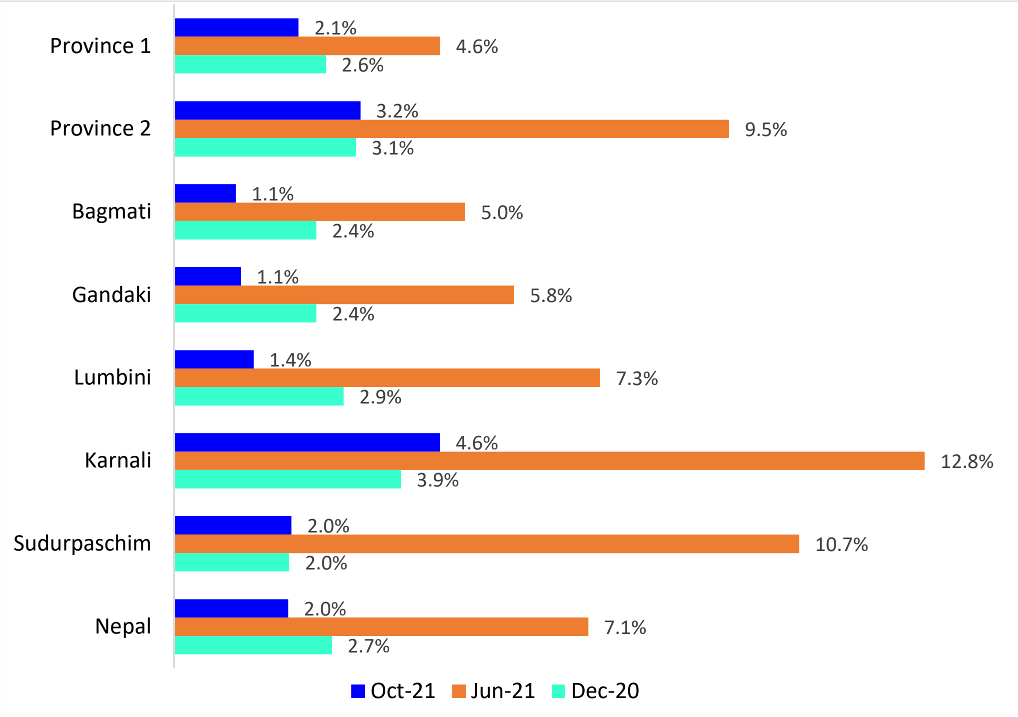
Nearly 2 percent of households reported that they did not have sufficient quantity of food to meet their daily needs in the last 7 days. At provincial level, the relatively higher proportion of households experiencing food insufficiency in the week prior to the

[4] The Annual Household Survey V 2016/2017, Central Bureau of Statistics

interview was found in Karnali (4.6 percent), followed by Province 2 (3.2 percent), Province 1 (2.1 percent) and Sudurpaschim (2.0 percent).

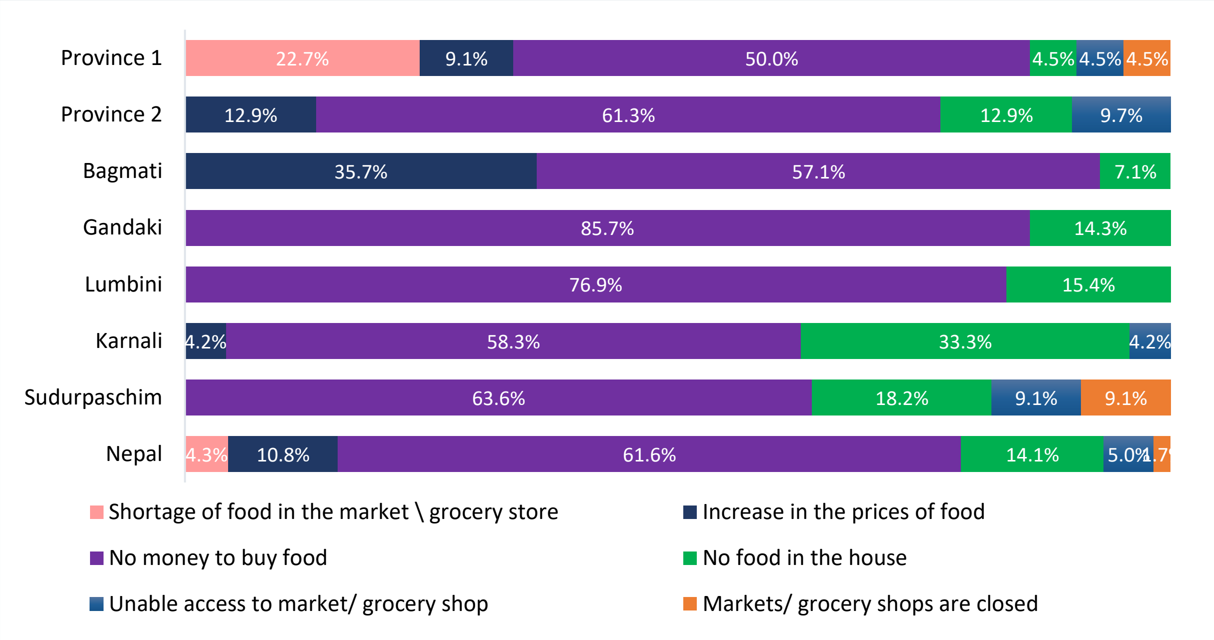
Compared to June 2021, proportion of households reporting food insufficiency declined substantially (by 5.1 percent), while compared to December 2020, it was only 0.7 percent lower than in October 2021 (see in Figure 4). The relatively lower proportion of households reporting food scarcity at home could be partially attributed to peak harvest of the summer crops and the festival season, when majority of households normally have more food stock.

Figure 4: Reported food insufficiency by province by province, December 2020 and June & October 2021



In terms of the reasons for experiencing food scarcity among those who reported food insufficiency, having no money to buy food was the most commonly reported reason (by nearly 62 percent of households), followed by no food at home (14.1 percent) and increase in prices of food commodities (10.8 percent), as shown in Figure 5. The most notable food shortages surfaced in Gandaki province with no money to buy goods as the main cause reported by 85.7 percent, followed by Lumbini province (76.9 percent). In Bagmati, relatively higher proportion of people reported an increase in the prices of foods as main reason of household food scarcity which accounted for 35.7 percent.

Figure 5: Reported reasons for food insufficiency by province (among the 7.1 percent of households that reported food insufficiency) by province



The findings follow a similar trend observed in the last survey in June 2021, however economic access is more prominent in the October 2021 round, rising from 49.8 percent in December 2020 to 61.6 percent in October 2021.The highest reported increase was noted in Gandaki and Lumbini provinces.

Overall, the observed decline in proportion of households consuming inadequate diet in October 2021 compared to the previous surveys earlier in 2021 and in 2020, signals an improvement in food security situation across Nepal. Nevertheless, the food insecurity situation is persistent in areas that are chronically most vulnerable.

Despite the indication of a gradual improvement in food security situation since the first wave in early 2020, the survey findings highlight a persistent adverse effect of the COVID-19 crisis on lives and livelihoods of Nepalese households, leaving a large proportion vulnerable and food insecure. The proportion of food insecure population caused by COVID-19 could be even higher than the findings presented in this survey, due to the under-representation of the most vulnerable people who do not have access to phone. Likewise, seasonal trends, namely the Dashain and Tihar festivals and the summer crop harvest that coincided with the time of the October survey, normally contribute to higher food stocks at household level and in turn lead to temporary decline in food insecurity prevalence.

Household Coping Strategies

Reduced Coping Strategy Index (rCSI)[5] and livelihood coping strategies are often used to assess households' response to food insecurity and shocks, capturing changes in diet and behaviour that households adopted due to reduced access to food. This survey explored both coping approaches during two recall periods—in the week prior to the interview for the rCSI, and 30 days for the livelihood coping to gather more accurate insights about food and livelihood pressure that households have been experiencing.

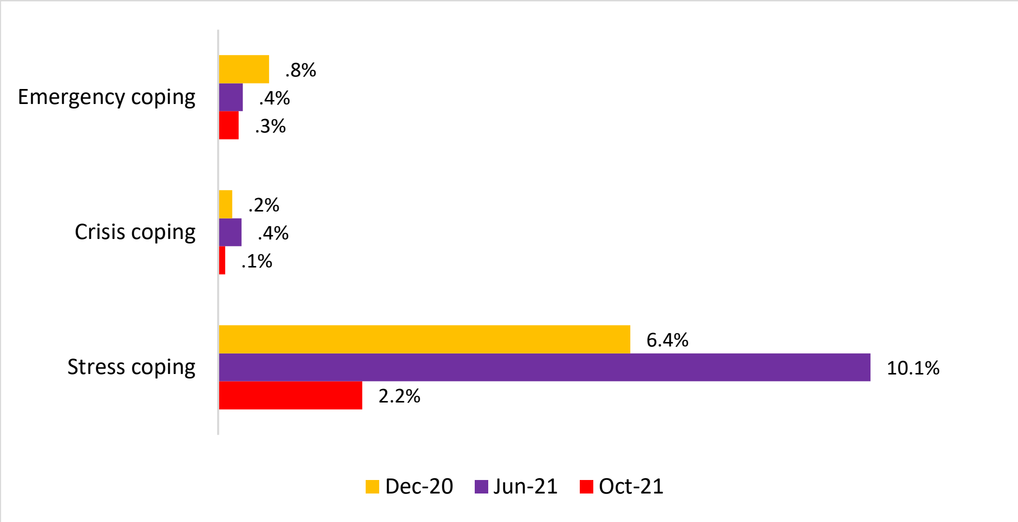
Overall, the findings show that nearly 0.5 percent of households adopted at least one coping strategy to address food shortages one week before the interview. A significant decline in number of households adopting coping strategies could be also attributed to the summer crops harvest and the festival season when household level consumption is normally at higher levels.

In terms of the livelihood coping strategy, nearly 3 percent of respondents adopted at least one coping strategy in the last 30 days since the interview. This is lower than June 2021 and December 2020 where 10.9 and 7.9 percent of households adopted at least one coping strategy, respectively. Stress coping strategies such as borrowing money, selling households' unproductive assets and other household assets was adopted by 2.2 percent of households, followed by emergency coping strategies such as selling last female animal, or selling land and house, and crisis coping strategies, including harvesting immature crops and selling productive assets (each 0.3 percent) (see Figure 6).

At provincial level, relatively higher proportion of households adopted livelihood coping in Karnali (4.6 percent), followed by Province 2 (3.5 percent) and Sudurpaschim (3.1 percent).

[5] rCSI measures the frequency and severity of the behaviour households engage in when faced with shortage of food.

Figure 6: Livelihood coping strategies adopted by the households (among the 2.7 percent that reported livelihood coping strategies)



Diet Quality of Children between 6 to 23 months of age

Minimum dietary diversity (MDD), a proxy indicator to measure the dietary quality of children between 6 to 23 months of age for adequate micronutrient density of foods, measures the consumption of diversified foods. Without adequate diversity and meal frequency, children are likely to be vulnerable to malnutrition. Globally, more than two thirds of malnutrition-related child deaths are associated with inappropriate feeding practices during the first two years of life[6]. The surveyed households were asked questions about the consumption of 7 food groups to children between 6-23 months of age within the 24-hour recall period. A total of 480 children were reported to be aged between 6-23 months.

Overall, the results show that 40.4 percent of children between 6 and 23 months of age did not meet the minimum recommended dietary diversity, slightly higher than the results of Nepal Multiple Indicator Cluster Survey (2019[7]). Prevalence of children who did not meet minimum dietary diversity increased compared to the June 2021 (38.5 percent) but declined in comparison to the 2020 household surveys (45.9 and 42.7 percent in April and December 2020, respectively). At provincial level, Karnali province had the highest prevalence of children whose diet did not meet the minimum diversity by 51.2 percent, followed by Province 2 (46.1 percent) and Gandaki (44.4 percent). Bagmati province had

[6] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5639776/pdf/12939_2017_Article_680.pdf
[7] https://www.unicef.org/nepal/media/9076/file/NMICS_2019_-_Key_findings.pdf

the lowest prevalence of children who did not meet the minimum diversity standard (30.6 percent).

When asked about the change in breastfeeding practices, it was found that more than 88 percent of respondents reported no change in breastfeeding practices, while 7.4 percent were breastfeeding less often than usual, 2.5 percent stopped breastfeeding and 2.1 percent reported feeding children more often.

Access to Food

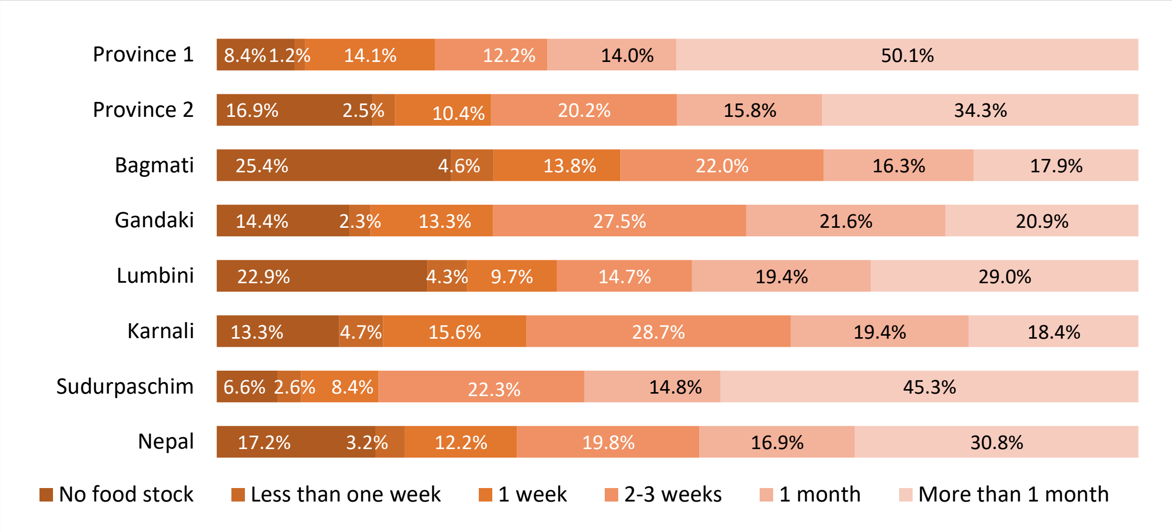
Household's access to food is often considered as a major component in food security analysis as it provides valuable information on household's ability to acquire food, and in turn on food security status. As in previous rounds, the survey asked the questions related to food access—centred around sources of food consumption and household food stocks. Livelihoods and income, another essential element for gauging household's ability to obtain food, was also examined and the results are presented in the following section.

Nearly 83 percent of respondents reported that they had food stock, while 17.2 percent did not have food stock at all (see Figure 7). Out of the total households reporting food stock, nearly 31 percent had food stock for more than 1 month, about 17 percent for one month, 19.8 percent reported having food stock for 2-3 weeks and 12.1 percent reported food stock for one week, as shown in Figure 7.

At provincial level, Bagmati Province has the highest portion of households reporting no food stocks, accounting 25.4 percent of households, followed by Lumbini (22.9 percent) and Province 2 (16.9 percent). Food stocks seem to be more common in provinces where the major source of household food consumption is own production, such as Sudurpashim and Province 1. On the other hand, provinces where majority of population relies on market purchase for their household food consumption had comparatively lower food stocks.

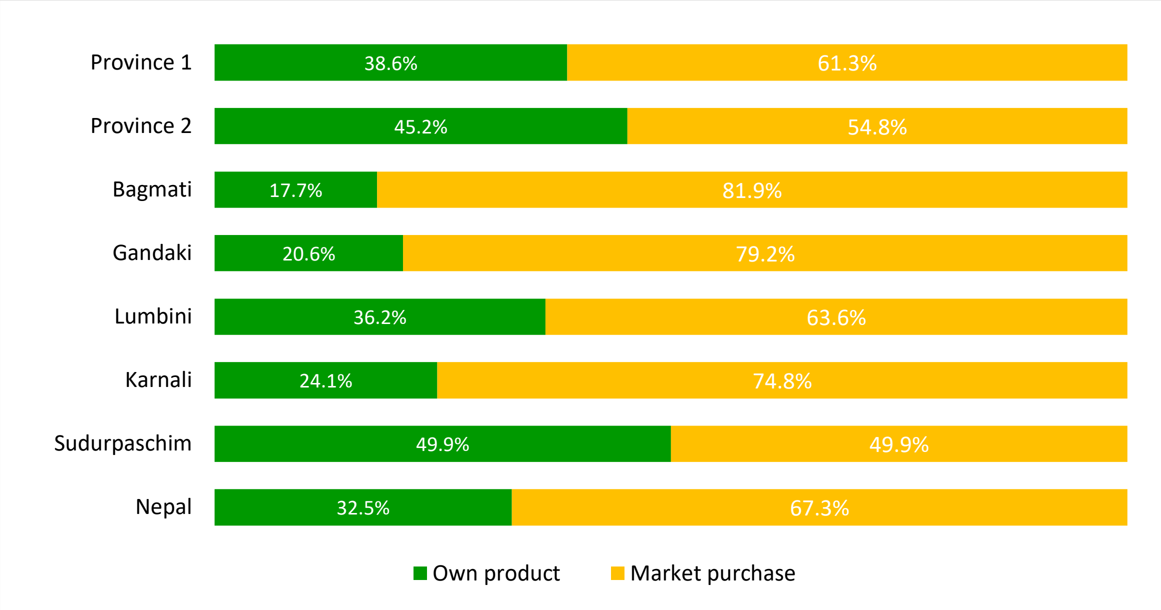
The proportion of households without food stocks marginally increased in October 2021 compared to June 2021, with 14.9 percent to 17.2 percent, however compared to December 2020 the households reporting no food stock decreased substantially.

Figure 7: Food stock duration by province



The source of food for household consumption is often considered as one of the aspects for analyzing food security situation. A question about the major source of food for household consumption was included in the survey. The findings show that the majority of the respondents acquired food through market purchase, accounting more than 67 percent of households, while only 32.5 percent reported consuming food from their own production (see Figure 8). Proportion of households sourcing food through gifts or assistance was nominal (0.2 percent). At the provincial level, relying on market purchase was more prevalent in provinces with relatively higher proportion of urban population except for Karnali Province. For example, nearly 82 percent of households reported to source food through market purchase in Bagmati, followed by Gandaki (79.2 percent) and Karnali (74.8 percent). In contrast, sourcing food through their own production seemed to be more prevalent in households in provinces where agriculture is a more dominant source of livelihood—in Sudurpaschim and Province 2, with 49.9 and 54.8 percent of respondents relying on their own production as source of food consumption, respectively. Lumbini Province had also relatively higher proportion of households relying on their own production for household food consumption, accounting for 63.3 percent of population, followed by Province 1 (61.3 percent).

Figure 6: Food source by province



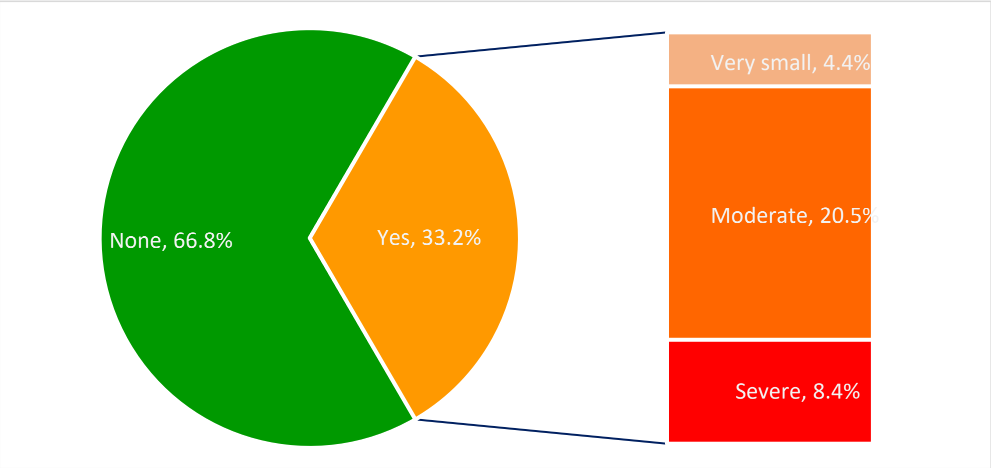
The mVAM household surveys show an increasing trend in reliance on market purchase for household food consumption. Proportion of respondents relying on market for household consumption was about 55 percent in April 2020, while in October 2021, it was about 67 percent. This gradual increase could be also partially attributed to seasonal trends, ease of COVID-19-induced lockdown and particularly the festival season in October, as this often leads to higher demand for diversified food that might not be met even by households normally relying on their own production for household food consumption. Higher reliance on market purchase could lead to an increasing risk of vulnerability, as, on the one hand, markets in Nepal are not functioning optimally and price volatility is common, and on the other hand, income generation for many livelihoods is limited and unstable. As presented in the previous section, increase in food prices and constrained access to markets was reported as the main reason for food insufficiency, reported by more than 10 and 5 percent of households, respectively. Access to food through better functioning and resilient food system and supply chain is critical for safeguarding food security status, particularly during COVID-19 that has had an unremitting impact on economy and in turn livelihoods as presented in the following section.

III. COVID-19 Impact on Livelihoods and Income

As a multi-dimensional crisis, COVID-19 has had a far-reaching impact on human life, beyond the primary health crisis. The measures aimed at curbing the infection rate have led to subsequent widespread disruption to normal socio-economic activity, including livelihoods and income generation at the household level. Given that livelihoods and income sources are central to assessing households' access to food as well as their vulnerability to shocks, the survey examines the effects of COVID-19 in this area. Despite the potential respondent's bias (self-reporting and attribution of COVID-19 as a causal effect), the question about the impact of COVID-19 on household income and job opportunities could provide valuable insights to understand its effect and severity, particularly when combined with the current food security status described earlier.

Overall, more than 33 percent of households reported a reduction in income in the last three months as presented in Figure 9. Out of these, more than 8 percent reported severe loss in income due to COVID-19 crisis, while 20.5 percent reported moderate reduction and nearly 5 percent noted that the income loss was small.

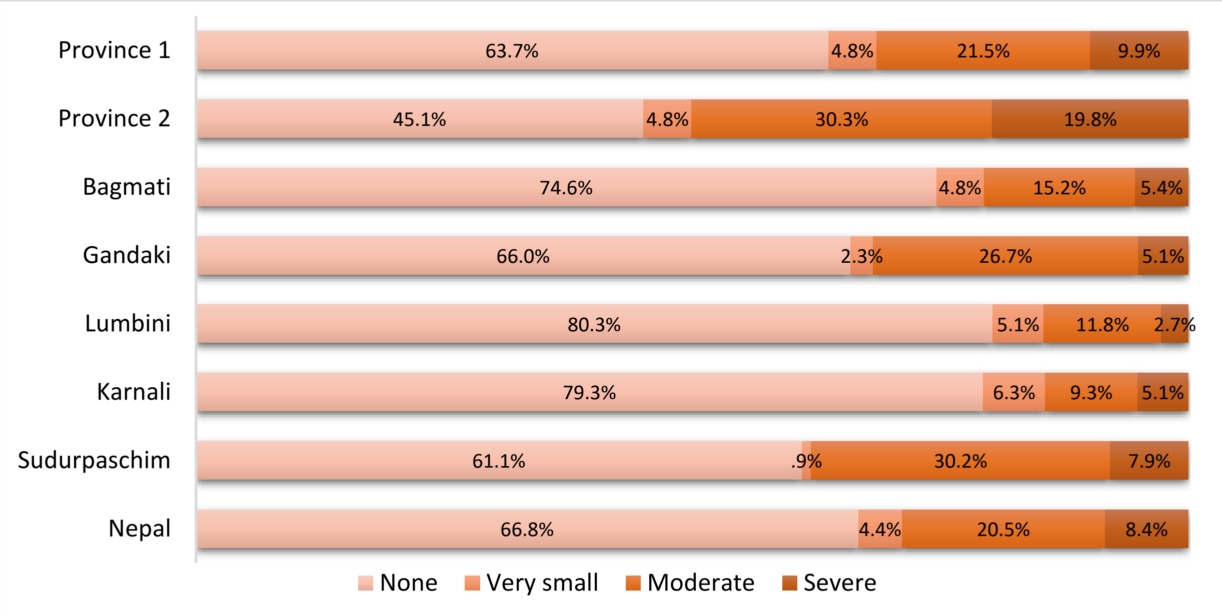
Figure 7: Impact of COVID-19 on income reduction at national level



At provincial level, the highest prevalence of respondents reporting household's income reduction due to COVID-19 was in Province 2 (54.9 percent), followed by Sudurpaschim (38.9 percent), Province 1 (36.3 percent) and Gandaki (34 percent). On the other hand, Lumbini was the least affected province, with 19.7 percent of households reporting a reduction in income, followed by Karnali (20.7 percent) (see Figure 10).

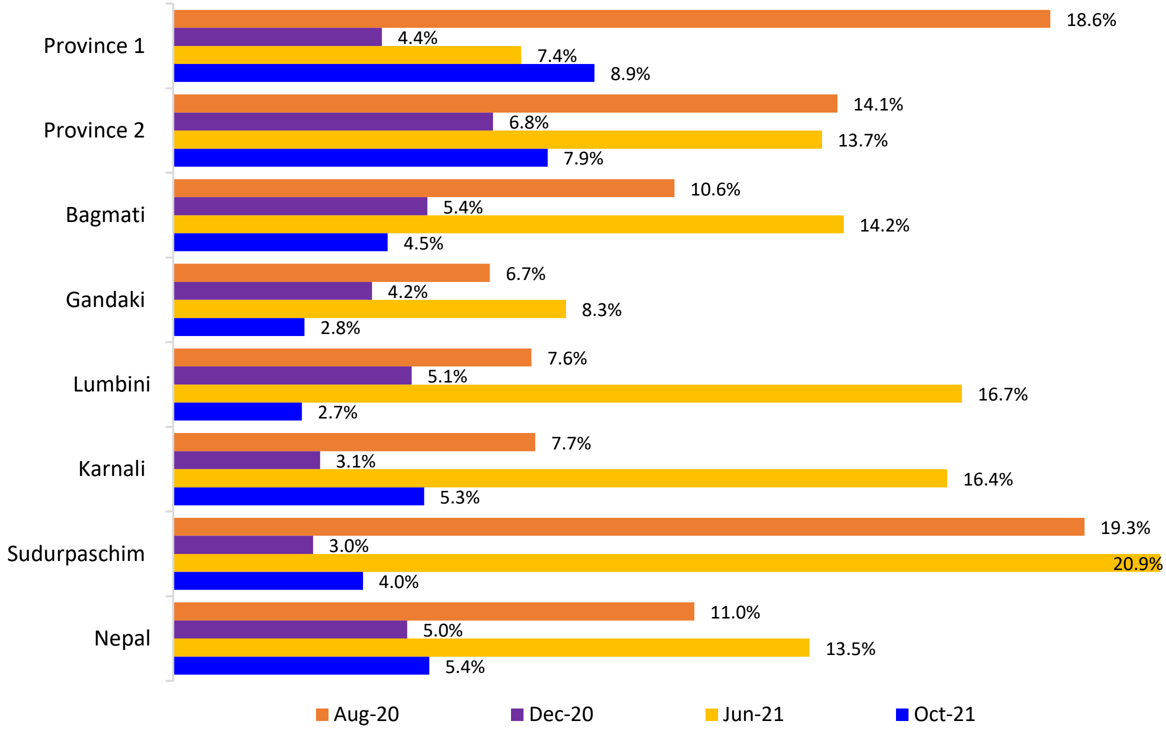
The proportion of households reporting income reduction decreased by more than 11percent in October compared to June 2021. Reduction in income could be due to generation of more employment opportunities during the festival seasons as well as the start of harvesting of summer crops. However, compared to surveys in 2020, the prevalence of income reduction was slightly higher. Similarly, severity of income reduction shows a slight improvement, as the proportion of households reporting severe (8.4 percent) and moderate (20.5 percent) compared to June (severe 11.5 percent; moderate 28.6 percent). However, it was higher than December (severe 5.3 percent; moderate 11.8 percent) 2020. This indicates the persistent negative impact of the second wave of COVID-19, together with first wave of the pandemic on the livelihoods of households. This is in line with the observed decrease in the number of households resorting to stressful livelihood coping strategies such as borrowing money or selling unproductive assets in October compared to June 2021.

Figure 8: Impact of the COVID-19 crisis on income reduction by province

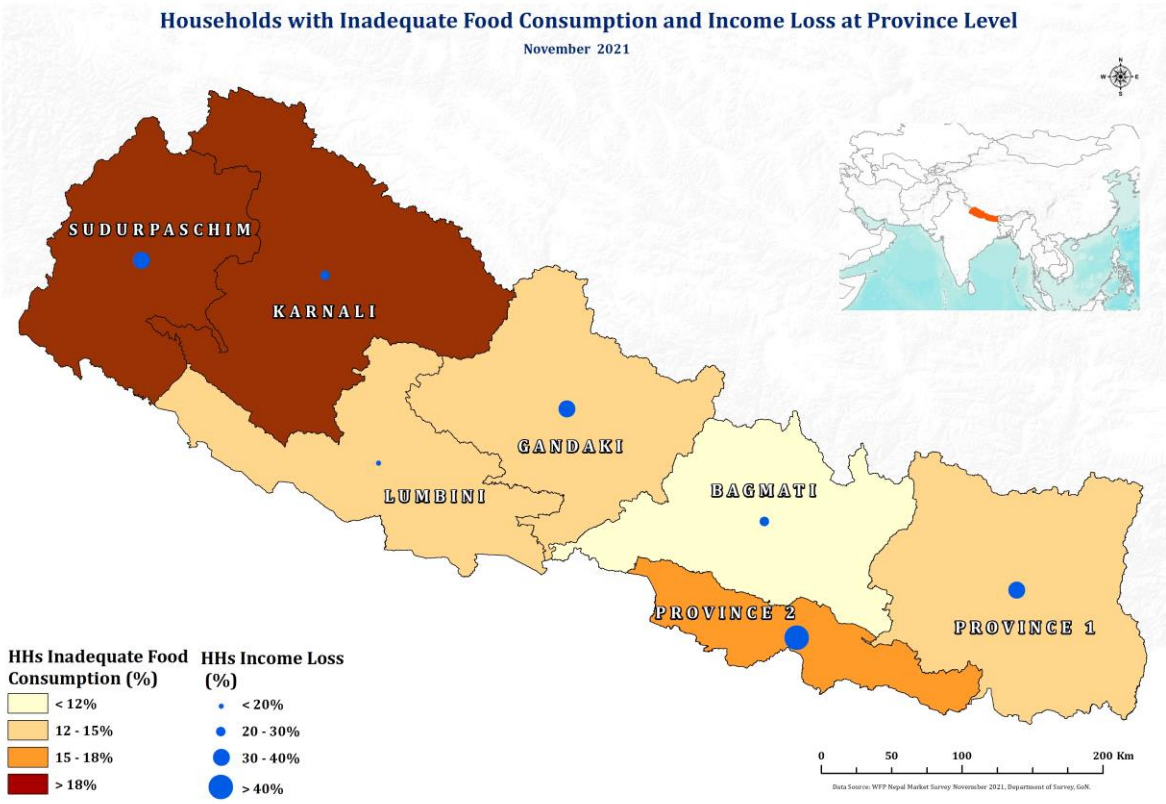


Overall, more than 5 percent of respondents reported losing at least one source of income in the last three months—9.5 and 8.5 percent lower than June 2021 and December 2020, respectively. At provincial level, the proportion of households reporting job loss was found to be high in Province 1 (8.9 percent), followed by Province 2 (7.9 percent) and Karnali (5.3 percent), while loss of livelihood source was the lowest in Lumbini (2.7 percent), followed by Gandaki province (2.8 percent) (See Figure 11).

Figure 11: Impact of the COVID-19 crisis on loss of income source by province in April, August & December 2020, and June and October 2021



The survey findings provide a palpable evidence of the persistent impact of COVID-19 on Nepalese livelihoods. As a result of this, many households have now been exposed to income cuts and job loss, and reductions have gained in severity. With prominent reliance of market purchase for food sourcing and increasing negative coping, chiefly aimed at income generation, there are concerns raised about households' ability to access food, and their overall capacity to withstand further shocks and precarious conditions. Ultimately, this could lead to deepening of pre-existing vulnerabilities, as well as further broadening of exposure to other parts of the population that would be normally less vulnerable. Measures aimed at economic recovery, income generation and smooth access to food will be critical for mitigation of the adverse effects of COVID-19— on overall vulnerability of Nepalese households -deepening of vulnerabilities and creating newly vulnerable groups.



IV. Household Profiles of the Populations Most Affected by COVID-19

As in the previous rounds, the impact of COVID-19 on specific livelihoods and household types was examined, with a view to assess which types of households have been relatively more affected by the pandemic, and to ultimately inform programming and response.

Livelihoods and Income

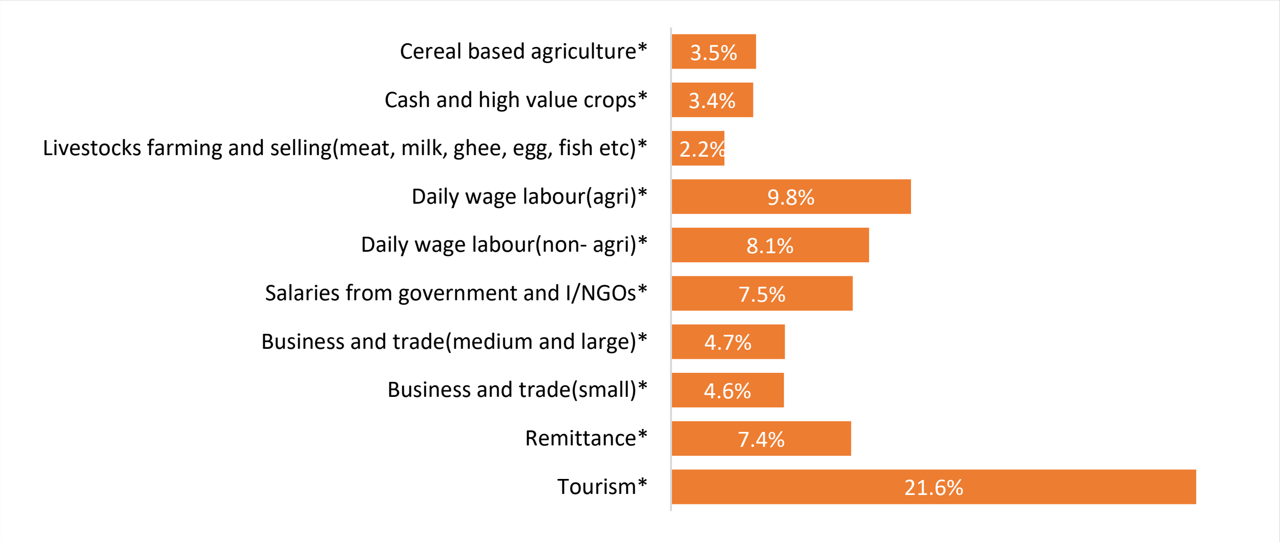
Since the first round of mVAM household survey conducted in April 2020, results are consistently showing persistent adverse impact of the COVID-19 crisis on certain types of livelihoods and households.

The results show that tourism was the most affected sector, with 21.6 percent of respondent reporting a loss of livelihood due to the pandemics, followed by daily wage labourers in farm sector (9.8 percent), daily wage labourers in off-farms (8.1 percent) salaries from government and non-government sectors (7.5 percent) and households reliant on remittances (7.4 percent) as shown in Figure 12.

The loss of livelihood was relatively more prevalent among households with persons with disability (10.4 percent), compared to households without person with disability (5.1 percent). Similarly, households with chronically ill member experienced higher job loss (7.6 percent) compared to households without

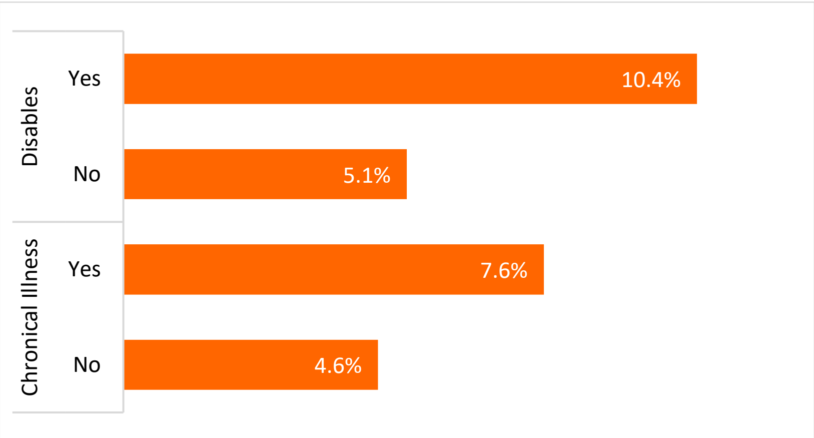
it (4.6 percent) as presented in Figure 13.

Figure 9: Loss of income source by livelihood type



* Livelihood types that showed a statistically significant association with job loss

Figure 10: Loss of income source by household categories



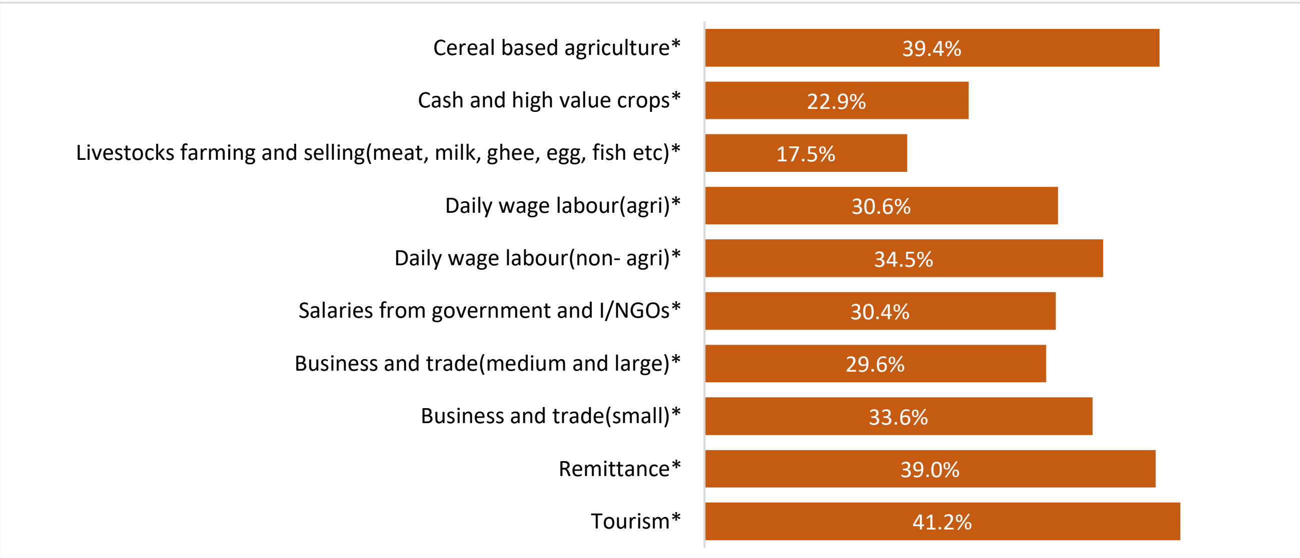
The COVID-19 crisis has had a relatively larger adverse effect on certain sectors and livelihoods. The findings show higher prevalence of income reduction and job loss for tourism, labour market, together with agriculture, remittance and business sectors. For example, the largest reduction in income was observed among those engaged in tourism sector, with 41.5 percent reporting a reduction in income, followed by cereal- based agriculture (39.4 percent), households dependent on remittances (39.0 percent) and daily wage labours in off-farm sector (34.5 percent) and farm sector (30.6 percent).

Overall, the reduction in income was found to be more severe for households with relatively more volatile livelihood activities as well as sectors highly affected by the COVID-19-related disruptions. Out of those who reported reduction in income, adverse impact was found to be more prevalent among households whose primary source of income was livestock farming and selling (48.1 percent), followed by tourism sector (46 percent) and daily wage labourers in farm sectors (40.9 percent), medium business and trade (36.4 percent) and small business and trade (30.5 percent), as shown in Figure 14.

In line with the job loss, vulnerable households were more likely to experience reduction in income. Income reduction was also more prevalent among households with persons with disability (39.5 percent) and chronically ill member (37.1 percent) than for households without a person with disability (32.9 percent) and chronically ill member (31.8 percent), respectively, as presented in Figure 16.

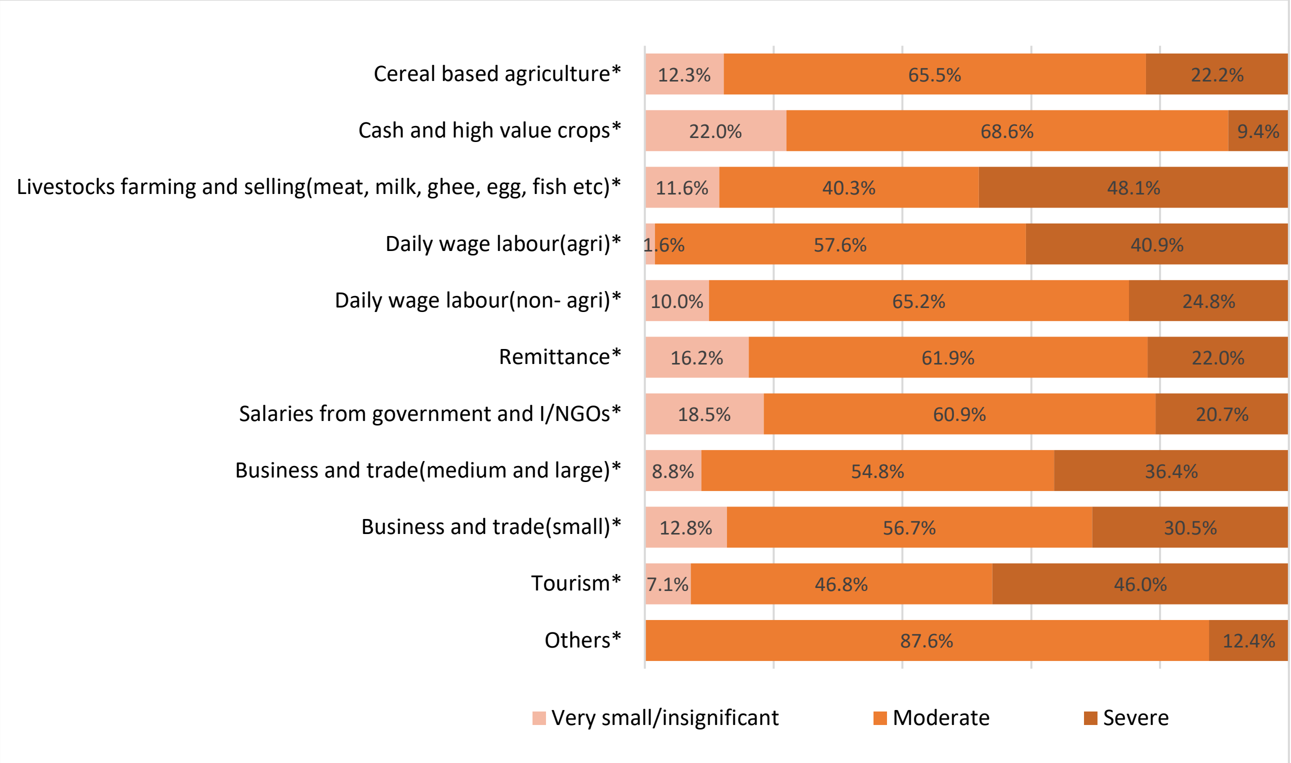
The reduction and loss of income was widespread, affecting all wealth groups. Figure 16 shows a relatively even distribution of reported job loss and reduction in income, signalling the presumed wide-ranging pressure the crisis has generated. Households in second (39.3 percent) and middle (35.6 percent) quintile reportedly presented higher prevalence of income and job cuts, compared to other wealth groups, However, this was slightly higher in fourth quintile group in June 2021.

Figure 11: Reduction in income by livelihood type



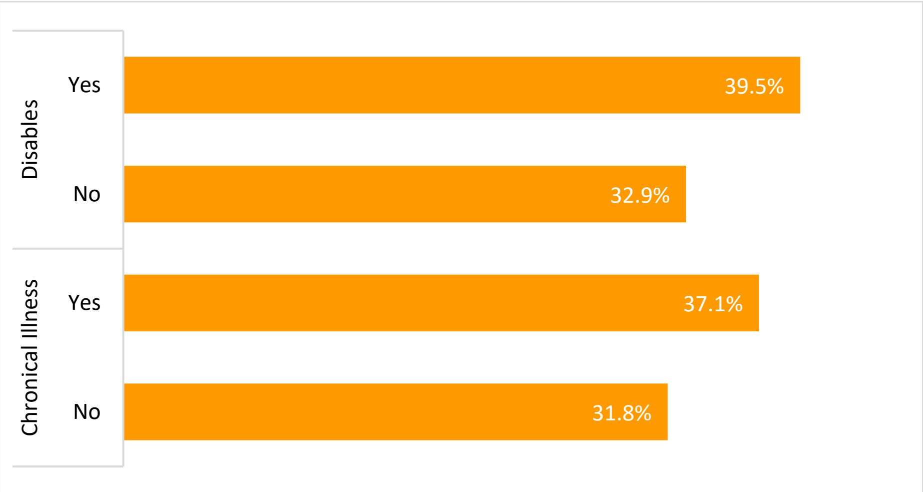
* Livelihood types that showed a statistically significant association with income reduction

Figure 12: Severity of income loss by livelihood type (among those who reported income loss)



* Livelihood types that showed a statistically significant association with income reduction

Figure 13: Reduction in income by household type (among those that reported a reduction in income)



The overall findings from the 2021 October survey on the impact of COVID-19 crisis on food security and livelihoods clearly show that despite some improvement in food security situation, there is still a continued pressure on income and jobs caused by COVID-19 pandemic, exposing more Nepalese households to livelihood stress. The results of the fifth rounds of the household survey clearly indicate concerns about the adverse effect of the COVID-19-related disruptions on certain livelihoods, such as: tourism, daily wage labour both in farm and off-farm sectors, remittance recipient households foreign labour migration, business and trade. Since the start of the first nationwide lockdown in March 2020, and the subsequent widespread disruptions to normal economic activity, these households have faced unrelenting pressure on their income, a major source of food for most in Nepal. The prolonged COVID-19 crisis has further exacerbated the already precarious situation in 2021 and led to far-reaching reductions in income at household level, affecting households across all wealth-quintiles ranging from 25.3 percent in highest to 39.3 percent of the second wealth quintile. This can lead to a detrimental impact on these households' ability to access food, and on their underlying vulnerability to shocks. Likewise, households that remain resilient and in higher wealth groups can be pushed into lower quintiles and in turn into vulnerable position.

Food Security Status

Despite an improvement in overall food security in October 2021, a large proportion of households remained food insecure over an extended period of time, which raises the concern about their capacity to cope and recover from the crisis. As highlighted in the previous rounds of the survey, those with pre-existing vulnerability have been more severely affected in terms of their food security status. Identifying these households is therefore critical for an adequate and well targeted response, to ultimately minimize the risk of further deterioration of their food security status.

The analysis of the food security status by wealth quintile[8], used as a measure for households' economic access and a major factor contributing to food insecurity, particularly during the COVID-19 pandemic, shows that the prevalence of food insecurity was higher among households in the lower wealth categories and lower for the households in the higher quintiles. For instance, nearly 34 percent of households who were in the bottom wealth quintile had inadequate food consumption, while it was only 2.9 percent for the wealthiest households, as shown in Figure 17. At provincial level, Bagmati province had the relatively higher proportion of households with inadequate food consumption in the lowest wealth quintile (43.6 percent), followed by Gandaki (38.0 percent) and Sudurpaschim (37.9 percent) as presented in Figure 18.

[8] Wealth index is calculated using an alternative method to use data on asset ownership and housing characteristics and combine this into a proxy indicator like wealth index, which is created using a Principal Component Analysis api/documents/WFP-0000022418/download/

Figure 14: Inadequate food consumption by wealth quintile groups

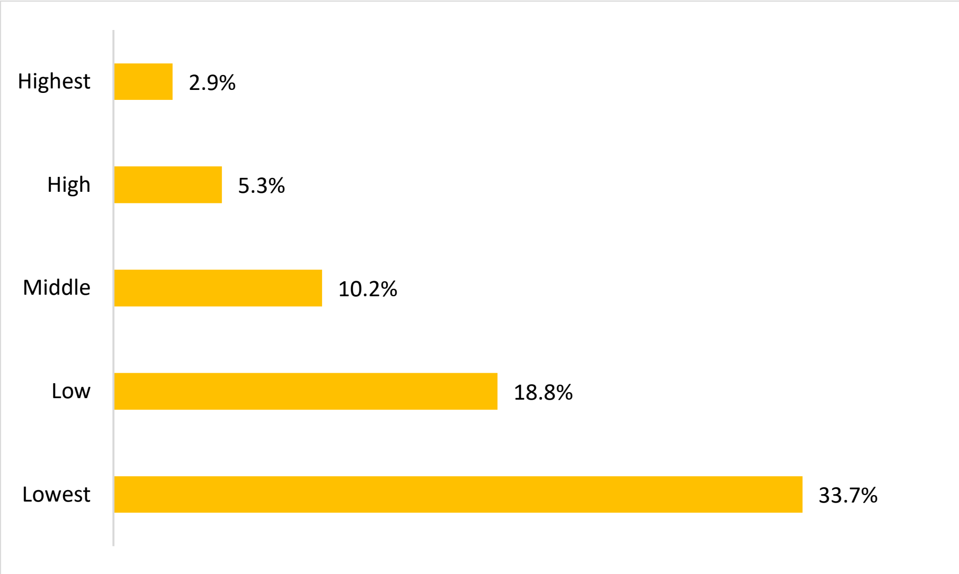
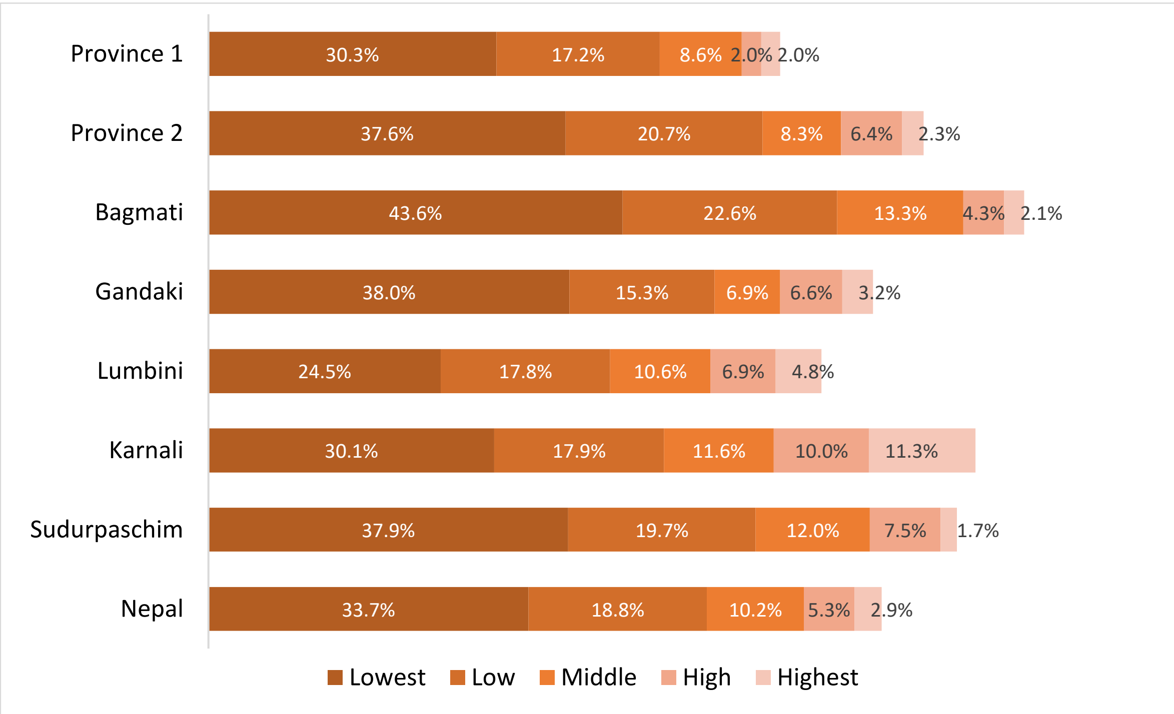


Figure 15: Inadequate food consumption by wealth quintile groups



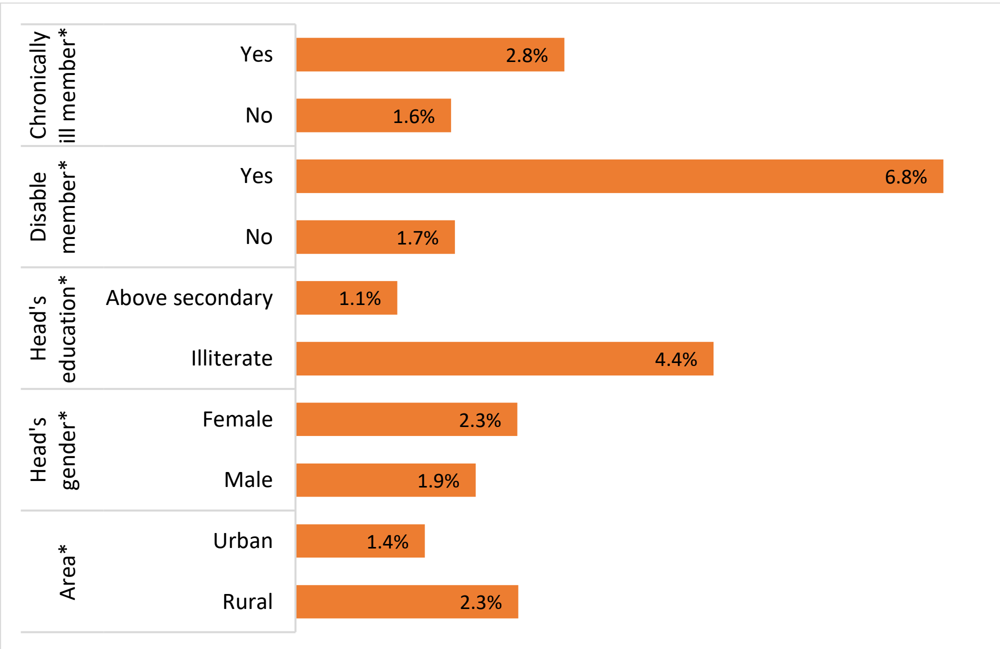
The survey results show that food insecurity was found to be more associated with certain types of income sources and the level of livelihood diversification. Food security was found to be more prevalent among household that depend on vulnerable livelihoods such as daily wage labour in farm and off-farm sectors.

Moreover, household's socio-economic characteristics and experience of income reduction and job loss were found to be critical factors associated with household-level food security

Education level of the household head showed a strong association with household food security status. Nearly 22 percent of households with illiterate household head had inadequate food consumption, while it was only 11.1 percent for those with secondary and higher education level as shown in Figure 20. Dietary diversity shows a similar pattern - poor dietary diversity was marginally higher among households with an illiterate household head (0.5 percent) compared to households with at least secondary education level (0.4 percent). Similarly, more households with illiterate head of household reported insufficient food to meet their households needs (4.4 percent) than households with higher education levels (1.1 percent), as presented in Figure 20.

However, there is a marginal difference on the food security situation by gender of household head. The result shows that 14.3 percent of male-headed households had inadequate food consumption compared to 13.0 percent of female-headed households. Additionally, prevalence of food insufficiency was comparable between a female- and male headed households (2.3 and 1.9 percent respectively) as shown in Figure 19.

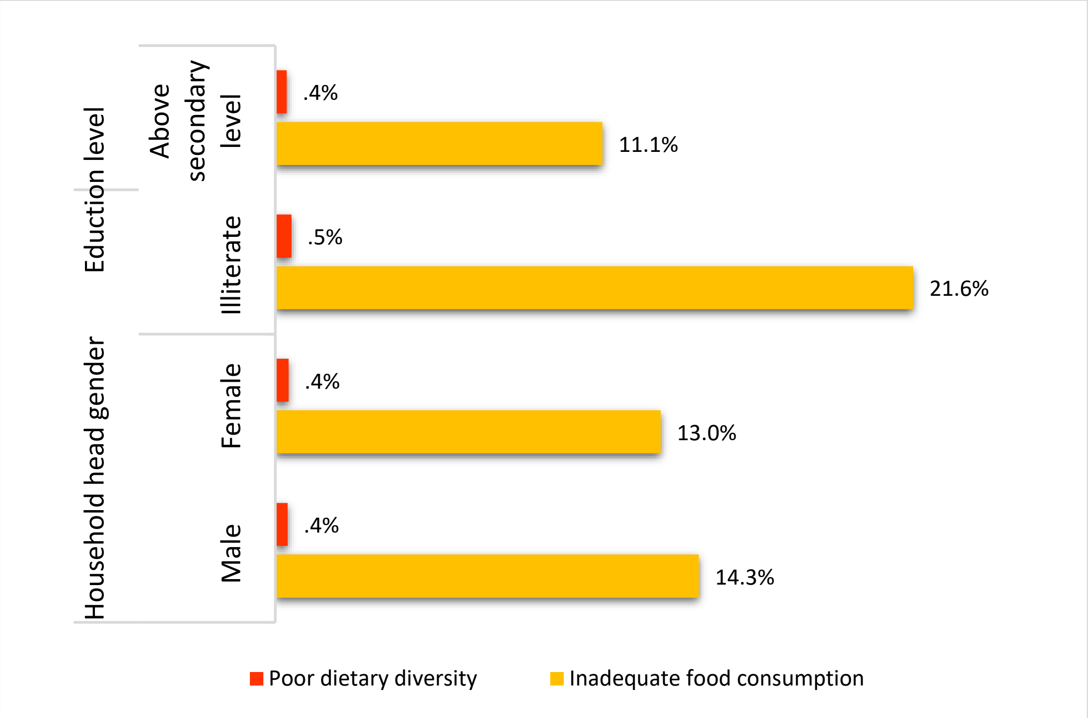
Figure 16.: Household food insufficiency by gender, area, education level of the household head and vulnerability



*These household characteristics showed a statistically significant association with household food insufficiency

The prevalence of food insecurity was found to be higher among vulnerable households. For example, 19.4 percent of households with a person with disability were food insecure, as measured by inadequate food consumption, compared to 13.8 percent of households without a person with disability. However, prevalence of food insecurity was relatively similar for households with a chronically ill member (12.4 percent), compared households to without chronically ill member (14.8 percent). Reported food insufficiency shows a similar trend, with more households with a person with disability and chronically ill member facing food scarcity than those without a member with pre-existing vulnerability, as presented in Figure 21.

Figure 17: Inadequate food consumption and poor dietary diversity, by gender and education level of the household head

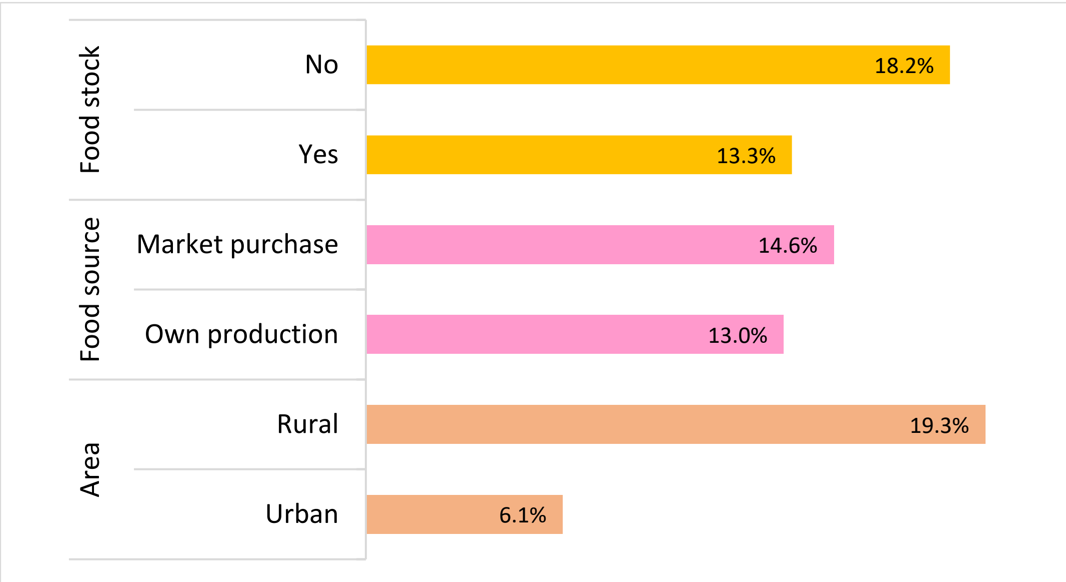


Similarly, the prevalence of food insecurity was found to be much higher in rural areas (19.3 percent) compared to households residing in urban areas (6.1 percent), both in terms of inadequate food consumption and lack of food stock to meet household needs as presented in Figure 19 and 21.

In line with the findings from the previous rounds, type of food source had no impact on household food security status. The prevalence of food insecurity, as measured by inadequate food consumption, was comparable for households that source food through their own production (13.0 percent) and households that rely on market purchase (14.6 percent).

However, a notable difference was found for households who reported to have food stock (13.3 percent), compared to those without any food stocks (18.2 percent). The difference was higher in April, but it was a small difference in December 2020. It was relatively high in June 2021. The higher difference in the prevalence of food insecurity in relation to household food stock seems to be common during the relatively more stringent COVID-19 lockdown and lower during the ease of lockdown. This is likely a result of a better capacity of wealthier households to stockpile food prior to lockdown compared to poorer people who might not be able to obtain food in larger volumes.

Figure 18: Households with inadequate food consumption by type of food source, food stock and area

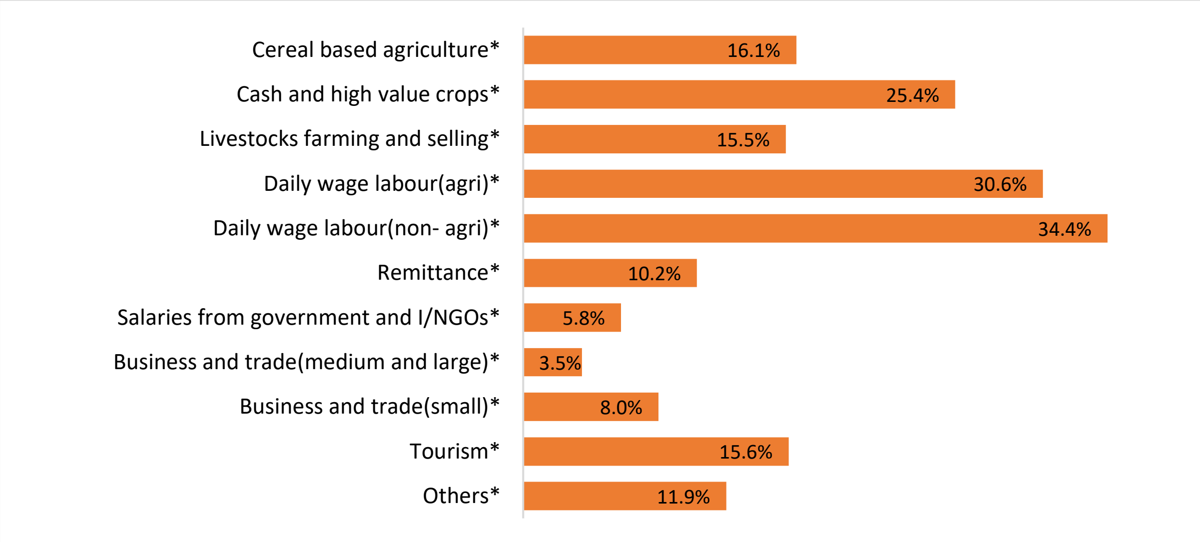


Similar to the socio-economic characteristics, there is a strong association between livelihood type and food security status, with relatively higher prevalence of food insecurity among households reliant on volatile livelihoods. For example, the proportion of households consuming inadequate diet was 16.5 percent for households with volatile livelihoods[9] than for households with sustainable livelihoods (11.0 percent) which includes salaried staff from government and non-government sectors, trade and business.

[9] Daily wage labours both in farm and off-farm sectors, and small business which are often affected by small shocks are considered as volatile livelihoods, while sustainable livelihoods are those with regular income and less volatile with shocks which are jobs in government and non-government sectors with monthly salaries.

In terms of specific sectors, the survey conducted in October 2021 shows that the COVID-19 crisis has had severe impact on daily wage labourers in farm and non-farm sectors, in particular. Households with volatile income sources show a strong association with higher prevalence of inadequate food consumption. The highest proportion of households with inadequate food consumption was found among daily wage labourers (in non-farm 34.4 percent and farm 30.6 percent), followed by cash and high value crops (25.4 percent), cereal based agriculture (16.1 percent) and tourism sector (15.6 percent).

Figure 19: Inadequate food consumption by livelihood type



*These livelihood types showed a statistically significant association with food consumption

The survey shows a consistent adverse impact of income and job loss on households' food security status. Households that reported job loss and reduction in income were found to be more food insecure, compared to households that did not, as presented in Figure 23. Food insecurity among those households that reported job loss was relatively higher (16.3 percent) thanthose who did not (14.0 percent). However, prevalence of inadequate food consumption was marginally comparable for households that reported a reduction in income caused by the COVID-19 crisis and for those who did not: 14.3 percent of households who experienced some reduction in income had inadequate food consumption and 14.1 percent of households that did not experience reduction in income consumed inadequate diet.

A clear association with job and income loss was observed in those experiencing food insufficiency. The findings show that more than 16 percent of households that experienced job loss due to the second wave of COVID-19 did not have enough food to meet their household's needs, compared to 1.1 percent of households that did not report job loss (see Figure 26). The same trend was found for reduction in income, with 4.5 percent of households whose income decreased reported not having enough food to meet their household's need, compared to only 0.7 percent of households who did not report reduction in income. These findings highlight the discernible effect of the COVID-19 crisis on household ability to obtain sufficient food stocks to meet their households needs; particularly through the prolonged pressure the crisis has been putting on households' livelihoods and income.

Figure 20: Inadequate food consumption by COVID-19 impact on livelihoods

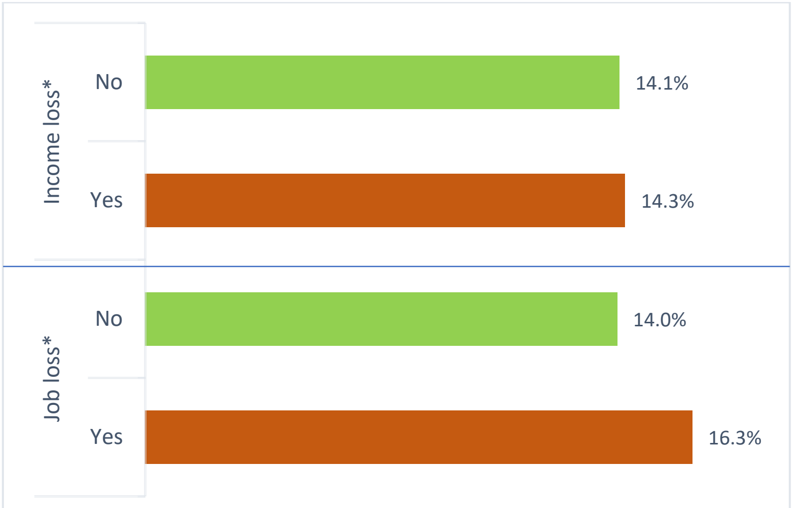
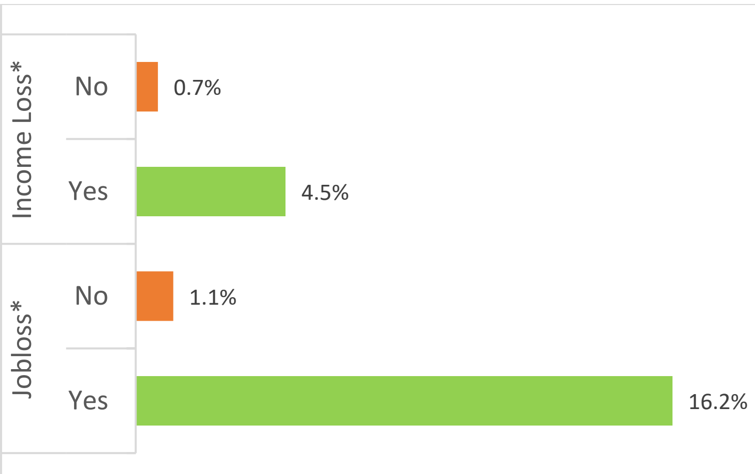


Figure 21: Household food insufficiency by the loss of job and income (among those that reported an insufficient food stock)

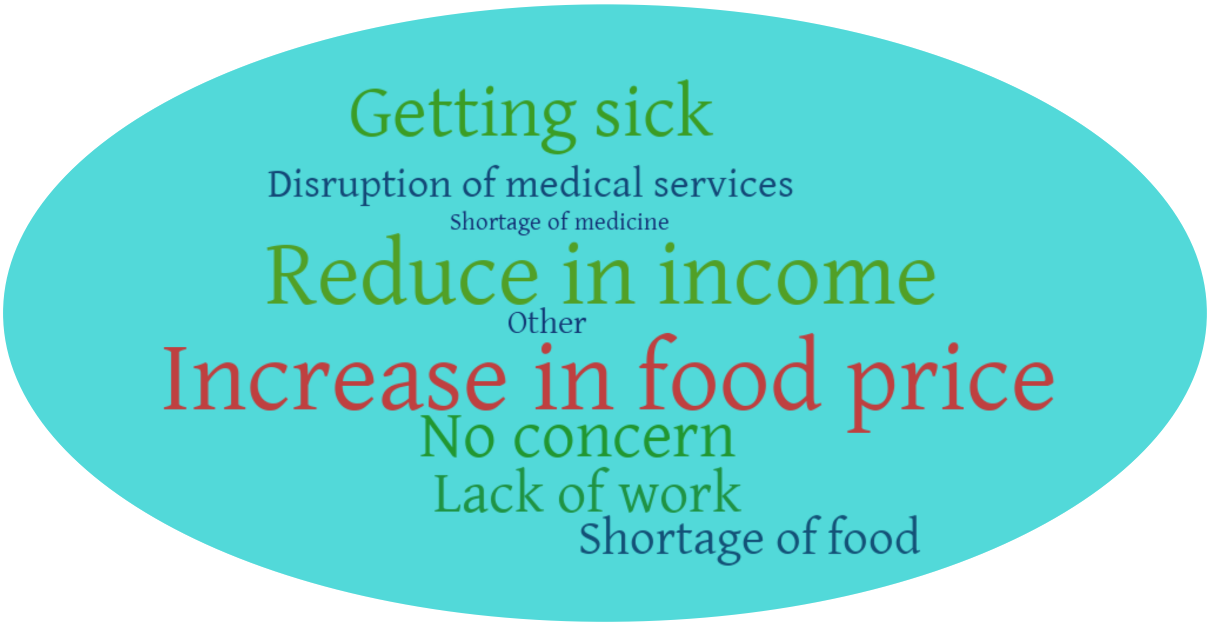


* Household food insufficiency showed a statistically significant association with job loss and income reduction

The overall findings from the October 2021 survey clearly illustrate the widespread and continued adverse impact of COVID-19 crisis on many spheres of lives and livelihoods of the Nepalese households. The consistent pressure on income generation, affecting broad range of livelihoods, and the resulting food insecurity is again observed for large part of the population. This is particularly notable for households with pre-existing vulnerabilities: poor households in the lowest wealth quintiles, illiterate households, households with a member with disability, rural households and those reliant of volatile livelihoods. The food security of these households, already exposed to precarious conditions prior to the crisis, has worsened. Further pressure and shocks can be detrimental for them, as the multi-faceted vulnerability is deepening, and their resilience is at risk. Likewise, the sustained economic slowdown will likely continue to pressure livelihoods and income generation beyond the most vulnerable groups. As the findings point to higher prevalence of income cuts among the second (39.3 percent) and middle (35.6 percent) wealth quintiles, these households can be pushed into lower quintiles that lead them to the risk of vulnerability. With the prolonged exposure to these adverse conditions, dominant market reliance for food sourcing, coping capacity of these households is therefore also at risk and can lead to an amplified vulnerability and higher food insecurity.

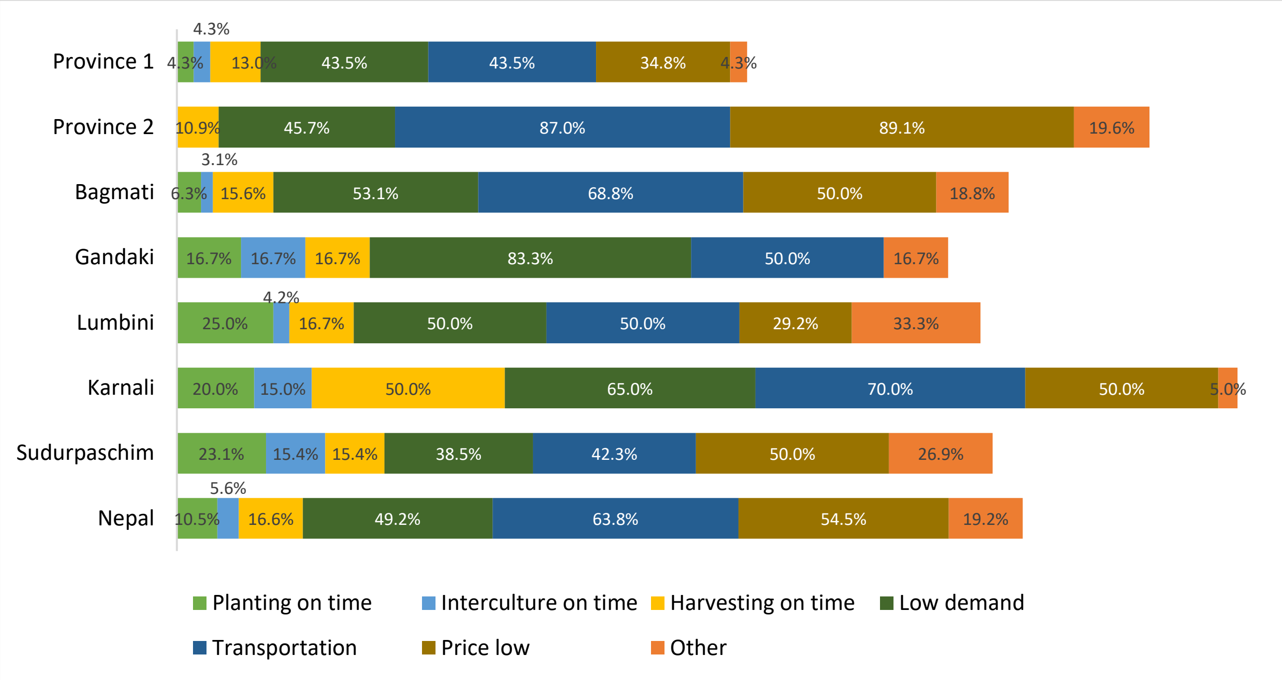
Major Concerns During the COVID-19 Crisis

In order to understand the respondent's perception or experience on the COVID-19 pandemic, the survey asked the question about households' major concerns related to the COVID-19 pandemic. The results show that the major concern reported by the respondents was increase in food prices (25.8 percent), followed by reduction in income (14.5 percent), disruption of education institutions (14.2 percent) and getting sick (13.5 percent). This indicates that the secondary impacts of crisis and the far-reaching disruptions are more concerning than the primary medical crisis.



The impact of the COVID-19 crisis on agriculture sector, a major source of livelihoods for majority of people in Nepal, is of distinct interest to the researchers, planners, and the development community. As such, the survey explored the key problems encountered by farm households during the COVID-19 crisis. These results show that a large proportion of households (38.2 percent) engaged in agriculture and associated sectors as their primary livelihood. Nearly 8 percent of these encountered problems related to transportation and marketing of their products (See Figure 27). Among those who reported these problems, 63.8 percent considered transportation of goods, mainly vegetables and cash crops as a key problem, followed by low price for their products (54.5 percent) and low demand in the markets (49.2 percent). At provincial level, the problem of transporting goods from farm to market was found to be high in Province 2 (87 percent), followed by Bagmati (68.8 percent) and Sudurpaschim province (70 percent), while most farmers (89.1 percent) in Province 2 reported a price decline for their products as the key concern. Likewise, most farmers reported low demand in Gandaki province (83.3 percent), followed by Karnali Province (65 percent). Nearly 17 percent of households noted that ability to harvest on time was the major problem encountered during the crisis.

Figure 22: Problems faced by households relying on agricultural production as a primary income source during the COVID-19 crisis

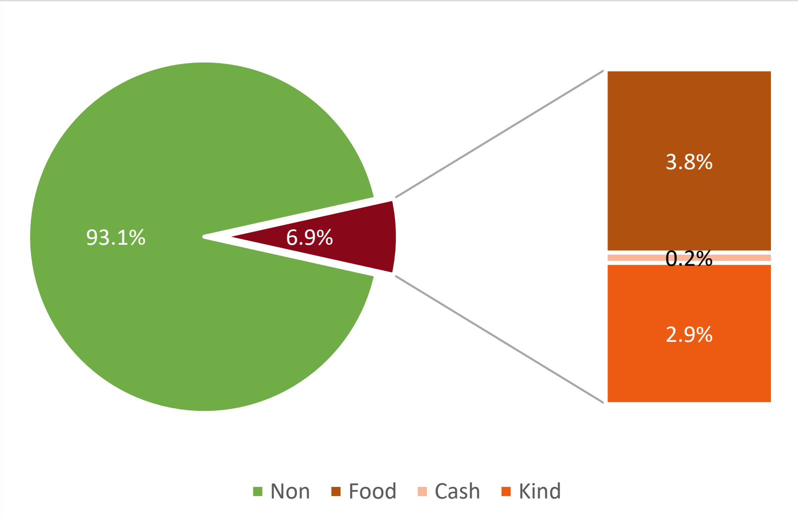


Support for the COVID-19 Crisis

Appropriate and well targeted response aimed at the primary health and secondary socio-economic crisis is vital for minimizing risks posed by the COVID-19 pandemic on lives and livelihoods of the Nepalese households. The Government of Nepal as well as other non-governmental organizations and individuals have provided assistance to the most-affected households since March 2020, after the first nation-wide lockdown.

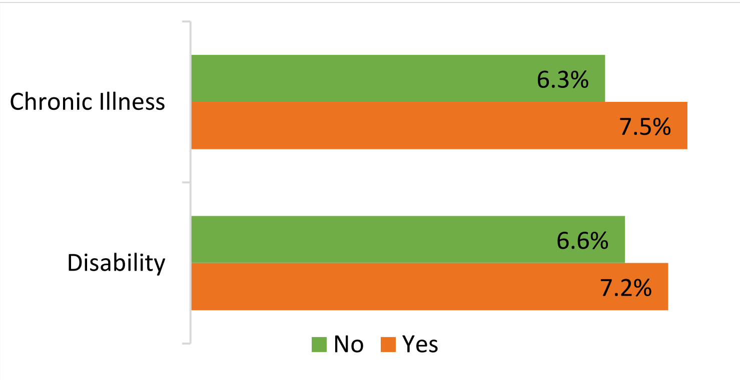
The survey asked the question whether the respondent received any assistance from both government and other non-government organizations. The result shows that nearly 7 percent of the interviewed households reported to receive some form of COVID-19 assistance either from the government or from non-governmental organizations during past three months since the survey was taken (See Figure 26). Food assistance was the most common form of assistance as reported by the 3.8 percent of respondents, followed by in-kind assistance (2.9 percent), such as sanitation, masks or other health related materials, while cash assistance was nominal.

Figure 23: The reported COVID-19 assistance



Compared to the first wave of COVID-19 crisis, proportion of households receiving some form of COVID-19 assistance was 2 percent lower in October 2021 and 4 percent lower compared to June 2021. Households that received some forms of COVID-19 assistance were relatively more vulnerable—such as households with pre-exiting conditions, chronic illness and household having a person with disability, as shown in Figure 27.

Figure 24: COVID-19 assistance household characteristics



V. Household Characteristics

The mVAM household survey is the nationally representative sampled survey conducted using telephone interview after COVID-19 induced lockdown with the aim to assess the impact of COVID-19 crisis on the food security and livelihoods in April 2020. This is the fifth round of survey conducted since the beginning of COVID-19 pandemic and the second in 2021; a total of 5,961 random respondents were interviewed. The average household size of the sampled household is 5.44, ranging from the lowest in Bagmati Province (4.91) to the highest in Province 2 (6.22). The average age of respondents is 35 years old, with the youngest being 18 years old to the oldest, at 88 years of age. Out of the total 5,961 interviewed, 41.1 percent of respondents are female, while female-headed households account for 14.1 percent of total sampled households.

Nearly 61 percent of the respondents are from rural areas and the remaining from urban areas. More than 24 percent of the household heads in the survey had a secondary education, followed by those with illiterate (22.1 percent), primary (16.7 percent) and higher secondary plus 2 (14.6 percent) level of education. A higher proportion of female-headed households (41.9 percent) were illiterate, compared to male-headed households (19.4 percent), likewise relatively higher proportion of female headed households were literate (21.1 percent) with non-formal education as compared to male headed households (13.3 percent). Households with illiteracy of head were relatively higher in Sudurpaschim Province (41.1 percent), followed by Karnali (29.1 percent) and Lumbini (25.6 percent).

More than 5 percent of the sampled households had at least one person with disability in the household, with the highest rate in Province 1 (7.8 percent), followed by Karnali (6.8 percent) and Gandaki (6.1 percent), while Bagmati province had the lowest rate of disabled household members (3.3 percent). Out of total of these, more than 26 percent of them had old disable card, followed by blue card (10.8 percent), red card (9.5 percent) and yellow card (5.6 percent). However, nearly 44 percent of them did not have any disability cards, indicating that the large number of persons with disability are not registered and receiving social benefits. Nearly 27 percent of the surveyed households have at least one member with chronic illness, with a relatively highest prevalence in Gandaki (31.8 percent), followed by Province 2 (31.0 percent) and Bagmati (29.7 percent). More than 18 percent of surveyed households have at least one migrant member. Out of which, nearly 78 percent of them migrated for work, followed by study abroad (14.2 percent) and high paid skilled job (7.9 percent). The proportion of premature returnees was only 1.4 percent, while 14.5 percent of households received remittance from a migrant member during the last 90 days since the date these households were interviewed.

Nearly 24 percent of surveyed households reported at least one member in the household being sick, of which 25.8 percent sought a COVID-19 test. Out of total COVID-19 tests, 39.2 percent were COVID-19 positive cases.

The results show that almost all sampled household had toilet facilities. Out of which, more than 32 percent had flushed toilet facilities, while nearly 47 percent had improved ventilated toilet, and more than 20 percent had open pit latrine. More than 96 percent of surveyed households observed good hand washing practices using soap. This could be due to increased awareness of these practices caused by the COVID-19 pandemic.

Nearly 75 percent of respondents had television with more than 84 percent respondents owning smart phone, while nearly 77 percent of respondents used gas or stove for cooking. Nearly 2 percent of respondents reported safety risks related to access to markets, hospitals, clinics, and healthcare centres for women and girls, marginally lower than 2021 June survey and much lower than previous surveys such as 27 percent lower than the last survey conducted in December 2020 and April 2020. Out of them, verbal abuse was found to be highest (80.3 percent) followed by physical violence (39.4 percent) and sexual violence (12.2 percent). Relatively higher proportion of the reported safety risks was found in Karnali (6.8 percent), followed by Province 2 (3.9 percent) and Lumbini (2.2 percent). More than 22 percent of respondents reported some kinds of psychological stress to COVID-19 crisis, in which the highest proportion of the reported psychological stress was observed in Province 1 (33.9 percent), followed by Gandaki (27.0 percent), Karnali (23.9 percent) and Sudurpaschim (23.6 percent).

Table 1: Household socio-economic characteristics

Province	Ave. Age	Average HHs Size	Gender		Vulnerable households		Absentee HHs	Remittance recipient HHs	COVID support recipient HHs
			Male	Female	Disable	Chronically ill			
Province 1	35.43	5.20	57.2%	42.8%	7.8%	27.3%	19.9%	16.3%	8.0%
Province 2	34.27	6.22	71.8%	28.2%	5.8%	31.0%	21.9%	19.1%	6.3%
Bagmati	33.87	4.91	56.4%	43.6%	3.3%	29.7%	16.8%	10.3%	6.0%
Gandaki	37.66	5.21	52.2%	47.8%	6.1%	31.8%	19.5%	17.7%	2.9%
Lumbini	36.55	5.44	55.5%	44.5%	5.3%	17.9%	20.8%	15.3%	5.3%
Karnali	35.10	5.60	54.6%	45.4%	6.8%	29.2%	12.7%	13.7%	18.6%
Sudurpaschim	32.32	6.00	60.1%	39.9%	5.1%	19.2%	13.2%	9.5%	5.1%
Nepal	34.94	5.44	58.9%	41.1%	5.4%	26.9%	18.6%	14.5%	6.6%

VI. Methodology

The information and data presented in this report were gathered from a nationally representative household survey conducted in the second half of October and the first half of November 2021 through live telephone interviews. Call interviews covered two national service providers (Nepal Telecom and Ncell) in all 7 provinces and the numbers were generated by using the random digit dialling method.

A total of 5,961 households were interviewed, with an average success rate of 10 percent (the ratio of successfully completed surveys to total dialled numbers, with 58,401 total dialled numbers). The success rate of telephone interviews ranges from the lowest at 5.4 percent in Narayani to the highest at 22.8 percent in Gandaki zone, followed by Koshi (21.1 percent) and Bheri (18 percent) zones. The non-response and deadline phone numbers were replaced by the same location code. The survey method followed a standard operating guideline as described in Computer Assisted Telephone Interview (CATI) survey developed by WFP. The survey allowed participation by telephone interview for those of at least 18 years of age.

A note on bias: Two main sources of bias exist in the design of this survey, both of which may result in under-estimating food insecurity. The first as already noted stems from using phones to reach people. The survey is able to do inference for the phone-owning population of Nepal, but research shows that phone ownership is correlated with higher levels of food security [10]. It is therefore reasonable to conclude that the results presented here may understate the extent of food insecurity in the country. The second main source of bias is from call failure. Calls can fail to result in a completed survey for several reasons. Some of these, like the number not existing, or belonging to a business, do not result in bias but others, which could themselves be related to food security or other outcomes (for example bad network connections which can occur in underserved areas of the country) may result in bias. This survey resulted in call failure due to both reasons. In this case as well, the results would be biased upwards, meaning that our results might be underestimating food insecurity in the country. However, the magnitude of these biases cannot bet readily estimated.

[10] Harman, P. 2020. "Sources of Bias in Mobile Phone Surveys in Developing Countries". Massey University.

Annex

Annex 1: Sampling design

A nationally representative sample was constructed, with the survey domain of 7 provinces.

Table 2: Sample size by province in October-November 2021

Province	Number of interviewed households	Target sample
Province 1	1,031	1,031
Province 2	971	968
Bagmati	1,320	1,321
Gandaki	611	601
Lumbini	954	920
Karnali	527	516
Sudurpaschim	547	543
Nepal	5,961	5,900

Table 3: Sample size by province in April and December 2020, and June 2021

Province Name	Number of interviewed households in April 2020	Number of interviewed households in December 2020	Number of interviewed households in June 2021
Province 1	769	769	1,031
Province 2	673	738	968
Bagmati	1,022	985	1,324
Gandaki	500	451	601
Province 5	812	792	946
Karnali	251	386	537
Sudurpaschim	360	405	598
Total	4,416	**4,526**	6,005

Annex 2: Food Security Indices

Food Consumption Score (FCS), a proxy indicator for food security, measures food diversity (the types of food consumed), food frequency (the number of days each food group is consumed over a reference period of 7 days), and the relative nutritional importance of different food groups by assigning weights to each food group[1]. The higher the FCS, the better is the food consumption status of the household. FCS is calculated based on the past 7-day reference period and classifies households into three categories: poor consumption (FCS=1.0 to 28); borderline (FCS=28.1 to 42); and acceptable consumption (FCS=>42.0). Due to high consumption of oil and fat, raised threshold for food consumption groups was used.

Table 3: Thresholds for food consumption groups

Food Consumption Groups	Standard Thresholds	Raised Threshold
Poor	0-21	0-28
Borderline	21.5-35	28.5-42
Acceptable	>35	>42

Dietary Diversity Score (DDS) is a measure of the number of food groups (out of a total of eight) that are consumed by the households in the past seven days preceding the survey. A diverse diet will help measure the consumption of diversified foods with adequate macronutrients and micronutrients[2]. Households that consume fewer than or equal to four food groups, out of 8, in the past 7-day reference period, are classified as low or poor dietary diversity.

Coping Strategy Index[3] (CSI) is a tool to measure the frequency and severity of the behaviour of the households when faced with a shortage of food or financial resources to buy food. The CSI is based on the many possible answers to one single question: "what do you do when you don't have adequate food, and don't have the money to buy food?" Reduced CSI is a sub-set of context specific CSI that uses a standard set of five individual coping behaviours which can be employed by households anywhere. The coping behaviours are as follows:

1. Eating less preferred food/ eating less expensive food
2. Reduced quantities consumed by adults/ mother in favour of young children
3. Reduced portion of meals
4. Reduced number of meals
5. Food borrowed from friends and relative

Livelihood Coping Strategies (LCS[11]) is a WFP's standard indicators for understanding behaviour households engage to meet their immediate food security needs at the time of crisis or shock. LCS captures types of coping strategies households adopted during the crisis of shock during the 30-days recall period. The behaviours are classified based on the type of coping strategies they adopted and the impact of a particular coping strategy on the longer-term productive ability. The specific coping strategies utilized in this survey were adapted to suit the country context. As such, the following three categories and corresponding coping actions were examined:

1. ***Stress livelihood strategies*** such as borrowing money or food from a formal/informal lender (e.g., banks and financial institutions, relatives, neighbours and local money lenders), sale of animals mainly non-productive, and sale of household assets or goods such as radio, furniture, refrigerator, television, jewellery etc.)
2. ***Crisis livelihood strategies*** such as harvesting immature crops and sale of productive assets such as agriculture tools, wheelbarrow, power tiller, sewing machine etc., and
3. ***Emergency livelihood strategies*** such as sale of productive animals such as milking cow or buffalo, sale of house or land, etc.

Annex 3: Household wealth index

Wealth is the value of physical, natural and financial assets owned by a household, and reduced by its liabilities. Wealth index is a composite index calculated from the key household ownership variables. It is used as a proxy indicator for household level wealth. Wealth index is often used in food security assessment, and it provides an idea of household's ability to access food, the severity of food insecurity and provides information about the economic situation of the food insecure. Wealth is commonly used in Demographic and Health Surveys (DHS) and Multiple Indicator Cluster Surveys (MICS) and ranks households into quintiles.

The method of constructing wealth index[12] is first to select variables that helps understand the level of wealth of the households. Variables can be selected from the wider areas such as productive and non-productive assets, household amenities and others. Variables are often selected in local context which can help measure the level of wealth of households (see variables used to create wealth index in Annex 4: questionnaire). To create a wealth, Principal Component Analysis (PCA) was used and

[11] https://documents.wfp.org/stellent/groups/public/documents/manual_guide_proced/wfp271449.pdf?_ga=2.32997694.1468088556.1601188637-1476716381.1565168719

[12] For more details https://www.wfp.org/publications/creation-wealth-index-june-2017 and https://dhsprogram.com/pubs/pdf/CR6/CR6.pdf

ranked into quintiles using sampling weights. The Wealth Index generated from this survey is presented in Table 4.

Table 4: Wealth quintiles by province

Province	Wealth Index Quintile				
	Lowest	Low	Middle	High	Highest
Province 1	21.4 percent	23.7 percent	21.3 percent	19.0 percent	14.5 percent
Province 2	20.8 percent	19.9 percent	24.9 percent	20.8 percent	13.6 percent
Bagmati	10.1 percent	11.1 percent	16.5 percent	26.6 percent	35.8 percent
Gandaki	19.8 percent	25.7 percent	14.2 percent	20.0 percent	20.3 percent
Lumbini	24.4 percent	22.3 percent	18.9 percent	21.3 percent	13.1 percent
Karnali	37.2 percent	21.3 percent	13.1 percent	13.3 percent	15.2 percent
Sudurpaschim	24.1 percent	28.7 percent	24.3 percent	12.2 percent	10.6 percent
Nepal	19.9 percent	20.1 percent	19.4 percent	20.8 percent	19.8 percent

Annex 4: Test of statistical significance

To assess statistical significance of association between variables of interest in this study, Chi-Square test was conducted[13]. As the key variable of interest are categorical, Chi-Square test is suitable. The statistical significance of association between following variables was tested:

- household food consumption (adequate or inadequate) and household socio-economic characteristics (education level, gender of household's head, disability or chronic illness, education, gender characteristics, type of food sourcing and presence of food stocks
- household's food consumption (adequate or inadequate) and livelihood type
- consumption (adequate or inadequate) and COVID-19 impact on livelihood (income reduction and job loss)
- Job loss and household socio-economic characteristics (education level, gender of household's head, disability or chronic illness, education of household head, gender characteristics, type of food sourcing and presence of food stocks)
- Job loss and household livelihood type
- Income loss and household socio-economic characteristics (education level, gender of household's head, disability or chronic illness, education of household head, gender characteristics, type of food sourcing and presence of food stocks)
- Income loss and household livelihood type

[13] https://stats.idre.ucla.edu/other/mult-pkg/whatstat/

For additional information, please contact:

Evidence, Policy and Innovation Unit

WFP Nepal

Cover page photo credits: Srawan Shrestha/WFP Nepal

This page has been intentionally left blank

World Food Programme
Patandhoka Road, Chakupat-10,
Lalitpur 44600, Nepal