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The Effect of COVID-19 on Livelihood and Food Security: A Rapid Study in Nepal

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ABSTRACT

Conducted during the time of business interruptions and lock-down, this research aims to examine the immediate effect of COVID-19 upon household livelihood, food security and coping strategies. This research has capitalized the part of data of 839 households collected through telephone surveys from 13 districts in May 2020 by World Vision International Nepal. The analysis has revealed that the occurrence of this pandemic pushed additional 11.6 per cent households into food insecurity and reduced average household cash income by 68 per cent. To cope with emerging livelihood and food security issues, the households have adopted different coping strategies viz.: emergency (1.0%), crisis (23.1%), stress (24.0%), and coping not required (52.0%). The ordinal logistic regression test demonstrates that household's affiliation to saving groups or cooperatives, economic class, rural-urban setting and caste are significant predictors to influence the quality of the household coping strategy. Based on the findings and contemporary other studies, this paper has urged for attention towards the economic recovery of the vulnerable people.

KEYWORDS: *COVID-19, livelihood, food security, coping strategies, economic recovery*

INTRODUCTION

Corona Virus Disease 2019 (COVID-19) has emerged as a devastating event in human history. Due to the worldwide spread of the novel coronavirus; 894,241 people have been killed out of 27,417,497 confirmed cases of infection in the world (WHO, 2020, September 9, 10:30 am CEST). According to the same source, at the same point of time, 306 people have been killed out of 48,138 confirmed cases in Nepal. The world has seen new cases and an increase in the death toll each day. Beyond the far-reaching consequences on health, the impact of COVID-19 is massively being experienced in economic, social, mental and almost every aspect of the life of almost all people in the world through full or partial lock-down of private and public business and facilities.

As per projection by Mahler, et al. (2020), the share of the world's population living with below \$1.90 per day is likely to rise by 0.7 percentage point, thus placing 49

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million people under extreme poverty, as a consequence of COVID-19. Sumner et al. (2020), who worked for the UN report, estimated that the poverty of the world is likely to rise at the highest magnitude after the decade of 1930s. This projects real challenges for countries to achieve Sustainable Development Goal (SDG) target of ending poverty by 2030. In this connection, the United Nations framework for the immediate socio-economic response to COVID-19, released in April 2020 highly recognizes that occurrence of this pandemic has brought a crisis that undermines lives and livelihoods in the long term on top of challenges on health services (UN, 2020). This framework envisages keeping the SDG 2030 agenda intact. The framework has identified 13 different categories of people, who are vulnerable due to pandemic, and who require immediate development response. The population at risk in this framework includes women, elderly people, children, youth, migrants, minorities, small farmers, people with disability and people in extreme poverty. The five pillars of the United Nations Development System (UNDS) response consists of '1) health first, 2) protecting people, 3) economic response and recovery, 4) macro-economic response and multi-lateral collaboration, and 5) social cohesion and community resilience' (UN, 2020 p. 11).

Under the proposed intervention of economic response and recovery, the framework has postulated that pandemic has a hard hit on jobs, small and medium-sized enterprises, farmworkers, daily wage earners, migrant workers. The most vulnerable workers are in the informal economy, constituting approximately three-fifth of the global workforce (UN, 2020). Concerning impact on children, a press release by the UNICEF warns that a total number of children living below the national poverty line can increase to 0.67 billion by 2020, in low and middle-income countries in the world (UNICEF, 2020). Buheji et al. (2020) examined the socio-economic impact on global poverty on global poverty taking case studies from Asia, Africa, South America, and Europe. The findings, based on the study in India, reveal that the hardest hit population in the Asian context is: migrant workers, slum dwellers, and daily wage earners respectively.

Based on the definition from Chambers and Conway (1992), livelihood is about capability (including skill, experience and commitments), assets (financial, natural and other resources) and activities (producing goods or services). Hence, activities are about leveraging the capability and assets to earn for means of living. On the other hand, livelihood security is a pre-condition for food security. As per Napoli, De Muro, and Mazziotta (2011), the definition of food insecurity, as undertaken by FAO, is "a situation that exists when people lack secure access to sufficient amounts of safe and nutritious food for normal growth and development and active and healthy life" (p. 8). However, the negative effect of COVID-19 on livelihood has systematically undermined the access, availability and usage of food.

Adverse events on livelihood trigger coping strategies for livelihood or food or both. Davies (1993) argued that coping is confronting a challenge whereas adapting is making long term adjustments in livelihood. Likewise, Liwenga (2003) argued that coping strategy is an immediate strategy for risk aversion whereas livelihood strategy is longer-term adjustment strategy. Coping strategies are categorized in different ways, viz.: consumption and livelihood copings (Maxwell et al. 2003, WFP & REACH, 2018); reversible, irreversible and failed copings (UNDP & Partnership for Economic Policy, 2011); stress, crisis and emergency copings (WFP & REACH, 2018).

Nepal is country with human development index ranking at 147th position, having 34 per cent multi-dimensionally poor, having 15 per cent at purchasing power parity (PPP) 1.0 USD a day, having 25.2 per cent under the national poverty line, having 35.4 per cent working poor at PPP 3.2 \$ a day, and where 28 per cent of the gross domestic product is contributed by remittance (UNDP, 2020). Moreover, 48 per cent

people do not have year-round access to food security (MoHP et al., 2017), and 31.5 per cent children under five are stunted (CBS & UNICEF, 2019).

In the backdrop of spreading of the pandemic, the main purpose of this research is to assess the effect of COVID on household livelihood and food security; and to examine the factors influencing the quality of the coping mechanism. In particular, this paper aims to unveil the situation of the vulnerable people who require attention from the government and development partners.

METHODOLOGY

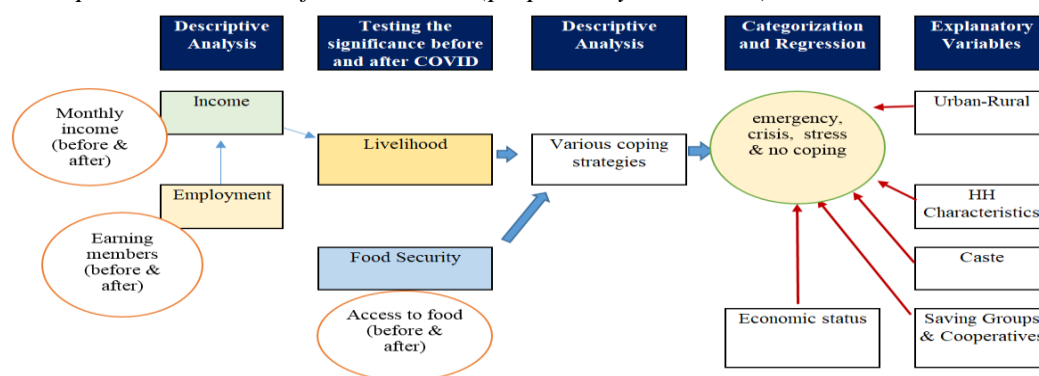
This paper is based on quantitative method. The source of data for this paper is data-sheet of integrated rapid assessment, conducted by World Vision International Nepal (WVIN) under the guidance of this author. Only a part of data from the data-sheet has been used in this paper for this specific research, by obtaining permission from the organisation. Altogether, 839 HH surveys were conducted in 12 districts in 6 provinces: existing (9) and new working districts (3) of WVIN. Due to pandemic, data were collected by calling through mobile phone. It is noteworthy that 96 per cent HHs own at least one mobile phone (Dixit K., 2020). The 839 samples were drawn from the WVIN database of 40,413 HHs in the 12 districts. Samples were selected based on Probability Proportional to Size (PPS). This sampling gives 95 per cent confidence level allowing 5 per cent sampling error at design effect of 2 when it is calculated using the equation from Cochran (1977). The data were collected and recorded in the tool, a web-based technology (Smapp, 2020).

Conducted in May, the questions relating to the pre-COVID situation were on a recall basis. With regards to food security, the data included: perceived food security status, food stock (months of food self-sufficiency), economic access (income); and any coping strategies. The food coping related questions were adapted from Coates et al. (2007). The pre and post-COVID situation of food security and livelihood were asked at the same time, by applying the recall method for the former status. In efforts to mitigate biases on recall-based responses (Lynn, 2009) and virtual means (Shuy, 2002), the enumerators were provided training on how to: 1) obtain accurate information in the telephone survey, 2) use the web-based Application (smapp), and 3) uphold ethical issues, also considering the fact that respondents can be under stress.

Using SPSS version 20 software, the statistical tools include frequency tables, chi-square test, analysis of variance (ANOVA), comparison of means, and correlation tests. They were first tested for the normality, and were to be found normally distributed (Shapiro & Wilk, 1965). The concept of data analysis is given below:

Figure 1

Conceptual Framework of the Research (prepared by the author)



HYPOTHESES

Two sets of tests have been placed for hypothesis test: firstly, significance of changes in livelihood (especially, income and earning members) and the food security (Table 1); and secondly, the factors influencing quality coping strategy (Table 2).

Table 1

Hypothesis of Changes in Earning and Food Security before and after COVID

Elements	Measured by	Null hypothesis (H ₀)	Alternative hypothesis (H _a)
Livelihood	Comparative Monthly income	There is no significant change in monthly income.	Monthly HH income has significantly declined.
	Comparative no. of earning members	There is no change in the number of earning members.	No. of HH earning members has significantly declined.
Food Security	Comparative Proportion of HHs food secure/insecure	There is no change in household food security status.	HH food security status has remarkably declined.

The hypotheses stated in Table 1 are subject to two-tailed t-tests (Table 6) and McNemar test (Table 7). The hypotheses on predictors of quality of coping mechanism are the predictors for access to food (Cordero-Ahiman, et al., 2018) in addition to the behavioural responses to minimize the risk (Young et al., 2001). Hence, the presumed relationship in this hypothesis is choices of coping strategy= *f* (HH size, urban/rural setting, affiliation with saving groups or cooperatives, caste, economic class).

The ordinal logistic regression has been used to estimate the effect of the predictors to the ordinal category of the outcome variable (Winship & Mare, 1984). The model presumes that predictors are any form out of ordinal, category or continuous type. The equation for logistic regression is: $\ln(p/(1-p))=B_0+B_1.X_1+B_2.X_2+..B_i.X_i$

Where, p = probability, B₀: intercept, B₁, B₂, B₃... Co-efficient of predictors X₁, X₂, X₃... respectively. The hypotheses stated in Table 2 are subject to ordinal logistic regression test (Table 8).

Table 2

Hypothesis on Predictors of Quality of HH Coping in the Context of COVID-19

Independent Variables	H ₀	H _a	Reference for Hypothesis*
Household size ^c .	Quality of coping is not determined by HH size.	Quality of coping goes worse with the increase of HH size due to dependency.	Ojogho, 2010.
Urban- Rural setting ^b .	Quality of coping is not determined by Rural-Urban context when there is crisis.	HHs in urban areas tend to adopt better coping when there is crisis.	Dunga and Dunga, 2017.
Affiliation with cooperatives or saving groups ^b .	Quality of coping is not determined by affiliation to cooperatives/ saving groups.	HHs affiliated with saving or cooperatives to adopt better coping when there is crisis.	Nugusse et al., 2013.

Caste: Dalit vs others ^b .	Quality of coping is not determined by caste.	Dalit tend to adopt worse coping.	Ghimire, 2018.
Economic status ^o	Economic status does not affect choice of coping.	Better off families adopt better quality of coping.	FAO, 2015.

(1) Type of variables: c= Continuous, b=Binary, o= Ordinary
 (2) * References for the hypothesis includes factors affecting food security as well due to inter-connectedness of food security and coping mechanism.
 (3) *Dalit* is the caste considered as lowest caste based on Hindu – stratified caste system.

FINDINGS AND DISCUSSIONS

The findings have been presented in three sections. The section entitled, ‘Descriptive Information’ provides respondents background; and mean values and fractions of the important variables related to the respondents’ households. The values give head off for further discussion. The second section, entitled ‘Effect of COVID upon Livelihood and Food Security’ contains the results of the first set of the hypothesis test and description of the significance of COVID effect on livelihood and food security. Finally, the third section, entitled ‘Coping Strategies’ contains the hypothesis test of factors influencing the quality of coping mechanism followed by descriptive information and interpretation. In the second and third section, interviewees’ experiences have been reflected.

Descriptive Information

Key respondent profiles and initial descriptive information have been provided in Table 3, Table 4 and Table 5 below.

Table 3
Respondent Profile (multiple categories)

Particulars	Categories	n	% (N=839)
Province	Province 1 : (3 Areas)	115	13.7
	Province 2: (6 Areas)	218	26.0
	Province 3 / Bagmati: (3 Areas)	109	13.0
	Province 4 / Gandaki: (1 Area)	35	4.2
	Province 6 / Karnali: (2 Area)	76	9.1
	Province 7 / Sudurpaschim: (8 Areas)	286	34.1
Gender	Male	346	41.2
	Female	493	58.8
Ethnicity	Khas-Arya	243	29.0
	Dalit (Hill/Terai)	235	28.0
	Janajati (Hill/ Terai)	209	24.9
	Muslim	70	8.3
	Madhesi (excl. Madhesi Dalit, Moslem, Terai Janajati)	63	7.5
	Other	19	2.3
Main Source of Family Income ^b	Agriculture/ livestock	272	32.4
	Daily wages	225	26.8
	Remittance from India	127	15.1
	Other service	54	6.4

	Remittance from other countries	51	6.1
	Govt. service	48	5.7
	Business	44	5.2
	Others (Specify)	18	2.1
Economic Status of HH ^c	Stable and secure	473	56.4
	Mostly stable	120	14.3
	Surviving but economic status is not stable	163	19.4
	Barely surviving	83	9.9
Household Head	Male adult below 65	621	74.0
	Female adult below 65	147	17.5
	Child	3	0.4
	Single woman-headed HH	8	1.0
	Elderly person	53	6.3
	Person with disability	7	0.8
Location	Rural & Semi-urban	550	65.6
	Urban	289	34.6

Notes: (b): Before COVID situation, (c): Subjectively perceived by the respondents.

Source: WVIN Field Survey- 2020.

Table 4

Respondent Profile and Important Information (Binary)

Particular (HHs with....)	%	n	CI @95%
HHs with source of income affected by COVID-19	77.8	653	75.0-80.6
HHs with access to any financial institution	60.9	511	57.6-64.2
HHs with access to Saving / Cooperatives	48.9	410	45.5-52.3
Respondents with access to mobile phone	93.9	788	92.3-95.6
Respondents who are mobile literate (read and send sms)	61.3	514	58.0-64.6
HHs with one or more people with disability	8.8	74	6.9-10.7
HHs with one or more social security schemes	29.8	250	26.7-32.9
Food Secure HHs before COVID (Access)	57.8	485	54.4-61.2
Food Secure HHs after COVID (Access)	46.2	388	42.8-49.7

Notes: (1) CI= Confidence Interval. (2) Total sample (N)= 839

Source: WVIN Field Survey- 2020.

Table 5

Important Mean Values from Respondents' Profile

Particular	Mean	Range	CI @95%
Household (HH) size	6.62	2-30	6.43-6.85
Monthly Income before COVID (NPR)	22,609	0.0-349,900	21,181-24,253
Monthly Income after COVID (NPR)	7,193	0-70,100	6,412-7,918
No. of earning members before COVID	1.62	0-6	1.56-1.67
No. of earning members after COVID	0.79	0-5	0.74-0.84

Notes: (1) 'before' covers the time-frame of one month (Feb 15-March 15, 2020, the time just before the lock down); (2) 'after' covers after COVID time-frame of past one month on the date of data collection; (3) data collection was completed 3rd-4th week of May 2020; and (4) NPR stands for Nepalese Rupees (1 USD = NPR 120.38 as on 10th July 2020).

Source: WVIN Field Survey- 2020.

Effect of COVID upon Livelihood and Food Security

The initial analysis shows that average household income has decreased, as evidenced by mean value of NPR 22,609 and 7,193 before and after COVID-19 respectively (Table 5). With further analysis on it, 68.4 percentage of the HHs experienced a decline of the income an owing to loss of employment, lockdown and disruption of economic activities. From the descriptive analysis, the biggest source of earning is agriculture, followed by daily wage and by remittances (Table 3). The remittance from India has been separated from the from rest of the foreign countries given the fact that a great number of people from poor families work in India as seasonal migrant workers too due to open border and liberal foreign policies of Nepal and India for each other.

As a contributing cause for a decrease in income, the mean number of earning members of the household has observably declined from 1.62 to 0.79, which is 52.8 percentage decline. Based on the ILO (2020), an approximate of between 1.6 and 2.0 million people may lose their jobs in Nepal, aftermaths of the pandemic amidst the scenario that most of the employment (80.8 %) are of an informal type.

On the other side, due to the effect on the livelihood, the prevalence of HH food security (access) declined from 57.8 to 46.2 percentage in the same period (Table 4). Tables 6 and Table 7 present the hypotheses test with regards to the significance of the changes in the livelihoods and food security respectively. The bottom 30.1 per cent in the economic status is at the danger zone of further poverty and hunger. Importantly, 37% of under-two children were not fed well after COVID-19 due to food insecurity.

In this regards, the mobile vulnerability analysis and mapping (mVAM) survey by World Food Programme (2020) found that 1/10th people lost their jobs; 3/4th HH had food stock for a month or more but only 42 per cent had only for one month, and one fourth of the HHs had insufficient consumption of food.

Table 6

Changes in Incomes and Earning Members due to COVID (Paired T-Test)

Variables	Paired Diff. (Differences)					T, DF, P (2 tailed)	Decision on H ₀ @ 0.05
	Mean diff.	SD	SE	95% CI Lower Upper			
Diff. in monthly income (before- after)	15418	22739	785	13877	16959	T=19.6,DF=838 P=0.00	Rejected (p <0.05)
Diff. in number of earning members (before- after)	0.82	0.92	0.032	0.76	0.89	T=25.9, DF=837 P=0.00	Rejected (p <0.05)

Notes: SD= Standard Deviation, SE=Standard Error, T= T-test value, DF= Degree of Freedom, P= Significance, H₀= Null Hypothesis, Diff.= Difference

Source: SPSS analysis of WVIN Field Survey- 2020.

Table 7

Change in HH Food Security due to COVID (Paired Chi-square Test)

Food insecure/ Secure	Insecure after	Secure after	Total	McNemar Test	Decision on H ₀
Insecure before	99.7% (353)	0.3% (1)	42.1% (354)	Chi-square value 93.01, p=0.00	Rejected (p <0.05)
Secure before	20.2% (98)	79.8% (387)	57.8% (485)		
% (n)	53.7% (451)	46.2% (388)	100% (849)		

Source: SPSS analysis of WVIN Field Survey- 2020.

After COVID, additional 11.6 per cent HHs are pushed into food insecurity (i.e. from 42.1% to 53.7%) (Table 4). The changes in income, earning members and food security have been found statistically significant (Table 6 & 7). When mean income is compared between food secure and insecure (access), the F-test demonstrated the p-value of 0.00 (i.e. <0.05), which means food insecure had significantly lower income than food-secure households before the pandemic. Furthermore, 88.3 per cent have encountered an increase in price after the pandemic, thus leading towards food insecurity, based on the primary data.

The value chain of agro-production is one of the impacted sectors. More than two-third of the households reported that agriculture is one of the negatively affected sector based on the primary survey. Limited vehicles were allowed for the marketing of staple foods, vegetable and fruits. However, due to limited network, the farmers were not able to carry their products to market. On the other hand, Indian vegetables were imported in Nepal in a quite high amount. Vegetable of Nepalese market has been rotting while Nepal has imported vegetable from India worth billion rupees during the lock-down (Yadav & Prasain, 2020, April 20).

Coping Strategies

By classification of coping strategies, an ordinal category of: (1) coping not required (52.0%), (2) stress coping (23.9%), (3) crisis coping (23.1%), and (4) emergency coping (1.0%) have been observed. An emergency coping strategy is the worst since it compromises the quality of life in the long term. Selling/ pledging of the house has been included in this category in this paper. However, starvation or begging was not reported by any households. A crisis coping strategy jeopardizes the long-term livelihood and its nature is irreversible. Under crisis coping, borrowing money from the local money lenders has been placed because a local moneylender often charges a higher interest rate, and the loan contract is exploitative. Coping strategies like eating up seeds for next season, selling productive assets have been placed under this category, as these worsen the livelihood in long-term. Likewise, stress coping strategies are short-term adjustments on food or livelihoods that can recover after the stage of the adversaries is over. Under stress coping category, short term food consumption adjustments, selling or non-productive assets have been included. This assumes that food consumption adjustments are transitory. The stress coping is reversible, and this coping is best among the past three.

As pre-requisite of the logistic regression model, the presence of any multi-collinearity was ruled out by checking the correlation between the predictors, and correlation coefficients were found significant (<0.3). Besides, change in the value of -2 Log-Likelihood (-2LL) (from 1537.6 to 841.6) during model fitting, with a p-value of 0.00 (i.e. < 0.05), Pearson’s Chi-square goodness of fit with a p-value of 0.00 (i.e. < 0.05); and Nagelkerke R² (0.63) confirm that the model fits well and variables in the model can estimate the outcome variable adequately. Table 8 presents the output of ordinal logistic regression process.

Table 8
Ordinal Logistic Regression Test on Predictors of Quality of Coping

Variables	B	standard error	P	95% CI		Decision on H ₀ (@ 0.05)
				Lower	Upper	
Outcome variable:						
~ Emergency coping	-7.78	0.41	0.00	-8.58	-6.94	-
~ Crisis coping	-4.67	0.34	0.00	-5.33	-4.01	-
~ Stress coping	-2.25	0.29	0.40	-2.82	-1.69	-

Household size	0.03	0.02	0.12	-0.01	0.07	Accepted
Community:						
~ Rural (0)	-0.53	0.14	0.00	-0.81	-0.25	Rejected
~ Urban (1)	0 ^a	-	-	-	-	
Cooperatives/ Saving:						
~ No (0)	-0.44	0.15	0.00	-0.73	-0.14	Rejected
~ Yes (1)	0 ^a	-	-	-	-	
Caste:						
~ Dalit (0)	-0.78	0.15	0.00	-1.07	-0.48	Rejected
~ Non-dalit (1)	0 ^a	-	-	-	-	
Economic class						
~ barely surviving	-4.50	0.31	0.00	-5.10	-3.91	Rejected
~ surviving but not stable	-4.79	0.27	0.00	-5.32	-4.27	
~ mostly stable	-4.73	0.28	0.00	-5.27	-4.18	
~ stable & secure	0 ^a	-	-	-	-	
Gender of HH head:						
~ Female (0)	0.08	0.15	0.60	-0.21	0.37	Accepted
~ Male (1)	0 ^a	-	-	-	-	

Notes: 0^a =Parameter set zero because it is redundant. B= Regression Co-efficient

Source: SPSS analysis of WVIN Field Survey- 2020.

Household Characteristics: The test demonstrated that HH size does not affect the quality of coping mechanism; and the gender of HH head does not affect (Table 8).

Urban vs Rural Setting: The test proved that urban HHs tend to adopt better quality of coping. The co-efficient (-0.53) tells one unit change in the setting (urban to rural) will result in 0.53 decline in the ordered log-odds of quality of coping and vice versa (Table 8). Based on findings of primary data, urban HHs were able to make more monthly income (mean of NPR 8858) than rural (mean of 6235), which is significantly different as evidenced by the p-value of 0.01 in the F-test. The higher income possibly led to a better quality of coping strategy in the urban areas as compared to rural areas.

Cooperatives and Saving Groups: The test proved that affiliation of a household with either saving groups or cooperative lead a household to choose or adopt a better quality of coping. The co-efficient (-0.44) tells one unit change in the status (yes to no) will result into 0.44 decline in the ordered log odds of the quality of coping and vice versa (Table 8).

The importance of cooperatives is increasing in Nepal. There are slightly more than 34,000 cooperatives and about 20,000 of them are working in the financial sector; and about 6 million people are affiliated with cooperatives (NEFSCUN, 2017). Similarly, there are several many local saving groups formed by different government and non-governmental organizations. Many of the saving groups have been already transformed as Cooperatives (NEFSCUN, 2017) and many of them have been operating by the members. A member of the saving group or cooperative gets a privilege to get a loan from there since he or she deposited the saving regularly. The low middle or poor households to save some money according to their capacity and use the saved money for any urgent needs that help understand cooperative for better coping strategy.

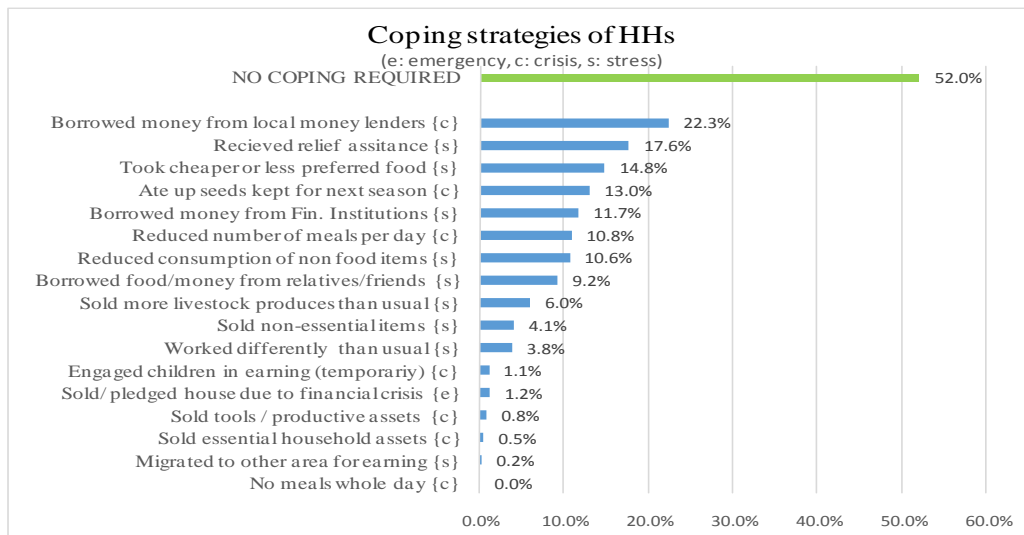
Caste: The test demonstrated that caste is the predictor of quality of coping; in other words as Dalits tend to adopt worse quality of coping compared to the other caste. The co-efficient (-0.78) tells one unit change in the caste (others to Dalits) will result into 0.78 declines in the ordered log odds of the quality of coping and vice versa (Table 8). In this regards, according to the legal provisions, all forms of caste-based discrimination and untouchability is punishable. But in practice, caste-based practices and taboos are deeply rooted in society. The widespread caste-based discrimination indicate a serious

violation of human rights in the society (International Dalit Solidarity Network, n.d). Being socially and economically disadvantaged, Dalits have limited choices to achieve their full potentials. This has reflected in the hypothesis test.

Economic Class: The test indicated that the economic class of the household strongly affects the quality of coping. The coefficients tell one unit decline in the respective classes resulting into corresponding (4.73, 4.79, 4.5) decline against the reference category in the ordered log odds of the quality of coping (Table 8).

Figure 2

HH Coping Strategies Based on the Analysis of WVIN Field Survey - 2020



As illustrated in Figure 2, the biggest coping is borrowing money from local money lenders. But in the context of Nepal, this practice is not helpful for the borrowers because local money lender often charges higher interest rates, like double than financial institutions. But in getting this loan, there is less hassle like from banks. People who are less educated or are poor, tend to go for this. Regarding external support, 17.6 per cent received some relief item from governmental or non-governmental organizations. Furthermore, 1.2 per cent sold or pledged their houses, which may cause migration. Despite the business disruption, 3.8 per cent HHs engaged someone work to longer, or take different challenges for earning. On the other hand, some households (1.1%) engaged children in earning activities. Regarding the adjustment of food consumption, 14.8 per cent took less preferred or lower quality and 10.6 per cent reduced number or size of meals (Figure 2). As Devereux (2001) has observed, households are more concerned to protect livelihood assets from depleting rather than maintaining the consumption level of food, at the initial stage of an adversary.

CONCLUSION AND RECOMMENDATIONS

COVID-19 has significantly and unprecedentedly deteriorated household food security, sources of income and amount of income throughout the country. In the primary survey area, coping adopted by one-fourth of the households is irreversible due to various factors including financial, social and geographic. Affiliation to cooperatives or saving groups, economic status (self-perceived), rural-urban setting and caste (Dalit vs others) are predictors of the quality of the household coping strategies. The downturn of business, immediate loss of employment, social distancing and lockdown; COVID-19

has brought negative economic impact on micro-level by affecting the means of living of the people in every part of the country. This scenario most likely can weaken the resilience; turn the food insecurity into chronic food insecurity; and push more people to hunger and more children to malnutrition. Therefore, economic recovery programmes require to be prioritized for food-insecure households for children's malnutrition and family well-being.

UN (2020) stresses the need for economic recovery, by protecting jobs, assets, productive units and networks; and ensuring decent works during the crisis. However, the economic recovery of Nepal is hindered by lack of political commitment, dependency with neighbouring countries and competitive markets. This challenge is further exacerbated by the potential continued downturn of remittance, which also is the second largest contributor to GDP. On the other hand, the agriculture sector, which provides part-time or full-time employment to more than two-third of people, is mainly subsistence-based and commercialization is at infancy stage. At this juncture, the country can recover by strengthening agriculture sector and enlarging micro-small-medium enterprises, which can also lead towards greater self-reliance in the long term. Relevant researches in these areas are advisable.

Poverty is an 'inability to achieve a minimum standard of living' (World Bank, 2018). In the face of a pandemic, which is engendering poverty level, the SDG slogan 'leave no one behind' (Klasen & Fleurbaey, 2019) has to be given attention. To promote the national goals towards prosperity and happiness (NPC, 2019), the bottom segment of individuals and groups are to be provided with opportunities to achieve the minimum standard of living. Strengthening and enlarging social protection can provide a cushion for such group (Devereux, 2016).

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