



AMERICAN JOURNAL OF INTERDISCIPLINARY RESEARCH AND INNOVATION (AJIRI)

ISSN: 2833-2237 (ONLINE)

SPECIAL ISSUE (2nd EIC-2024)

PUBLISHED BY
E-PALLI PUBLISHERS, DELAWARE, USA

Impact of Unconditional Support to Reduce Food Insecurity During the Pandemic of Covid 19

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ABSTRACT

Vulnerable populations are always highly affected by any disaster. They have deficient coping capacity as they depend on daily income activities and need a diversified source of income. So, those people are highly impacted by any disease. The result of such a disaster may lead to food insecurity. Methods: For the survey, 1,598 people who got unconditional support were under consideration. Out of the total population, 317 samples were surveyed using proportionate random sampling for the study. The research methodology is a Randomized Controlled Trial (RCT) with a Pretest-Posttest Design. A smart survey through KOBO tools was done using trained local enumerators. Data collected through the survey was downloaded to Excel and analysed using Excel. Results: Cereals (99%) was the most consumed food type, while white tuber and root (2.2%) were the least consumed. Food consumed in four or more types increased from 42% to 87%. Livelihood Coping Strategies indicator (L-CSI) was used as a descriptor of a household's coping capacity alongside the R-CSI. The responses were categorized into stress, crisis, and emergency strategies. The number of HHs under the crisis category reduced from 15.4% to 4.1%. Similarly, the number of households under the Emergency category reduced from 12.3% to 3.8%, and the number of crises reduced from 58.2 % to 6.8% Conclusion: The study showed from the calculation R-CS that conditional support of the vulnerable people increased by nearly one-third (35%) within a month of support and helped them with coping strategies.

Keywords: Livelihood Coping Strategies Index, Reduced Coping Strategy Index, 3.7.5. Household Dietary Diversity Score

INTRODUCTION

Background

The triggered crisis of COVID-19 raised along from the first wave to third wave exponential in the cases. The country was swift to mandate complete lockdown in first and second wave, but scenario of the third wave is a bit different. As there were fewer lockdowns but the cases were high during the third wave.

Large number of laborers/wage earners, migrant workers, farmers, or business entrepreneurs have suffered from the chaos of the crisis. Having an extensive impact on livelihood options, small local market vendors were unable to continue their enterprises, unable to pay the loans and were struggling to find new livelihood opportunities to run their livelihood.

COVID-19 severely affected the lives of families especially to population relying on daily wages and agriculture as income sources. Not only income sources were depleted, but also the produced agri-products could not reach to market and daily wage amount (per day) got reduced significantly. Families were forced to adopt diverse coping strategies (mostly negative among families from the vulnerable state), causing further issues on the nutritional status of children, women, and senior citizens.

Sarlahi district (HDI 0.402), lies in Madhesh province with an income per capita of \$570, around 26% of the population lives below the poverty line in (UNDP rapid assessment report 2020). The report further indicates that 47% of the population are multi-dimensionally poor and the provinces' HDI stands at 0.421. The literacy rate for the age group 15 to 49 years is the lowest of all provinces for both genders: 38% for women and 78% for men. The expansion and re-emerging of new variants of COVID-19 imposed a higher risk of transmission in border districts like Sarlahi, as people became reluctant in following safety measures and protocol. The census data 2014 shows that the HDI seemed to be low in the proposed working areas i.e.

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Haripur Municipality (0.39), Malangwa Municipality (0.44) and Barahattwa Municipality (0.39). These proposed LGs lie near to Nepal-India border and are highly affected by the COVID-19 pandemic and are also at high risk of multi-hazard including flood disaster.

In this context, local Government of sarlahi district provided the cash (through cash for work) and livestock to improve the livelihood status and food security condition of COVID-19 affected families in Sarlahi district of Madhesh province.

Map of Surveyed Palika

Sarlahi is a Terai district situated in the so-called Janakpur Zone mostly with low and plain land located in the Madhesh province of Nepal.

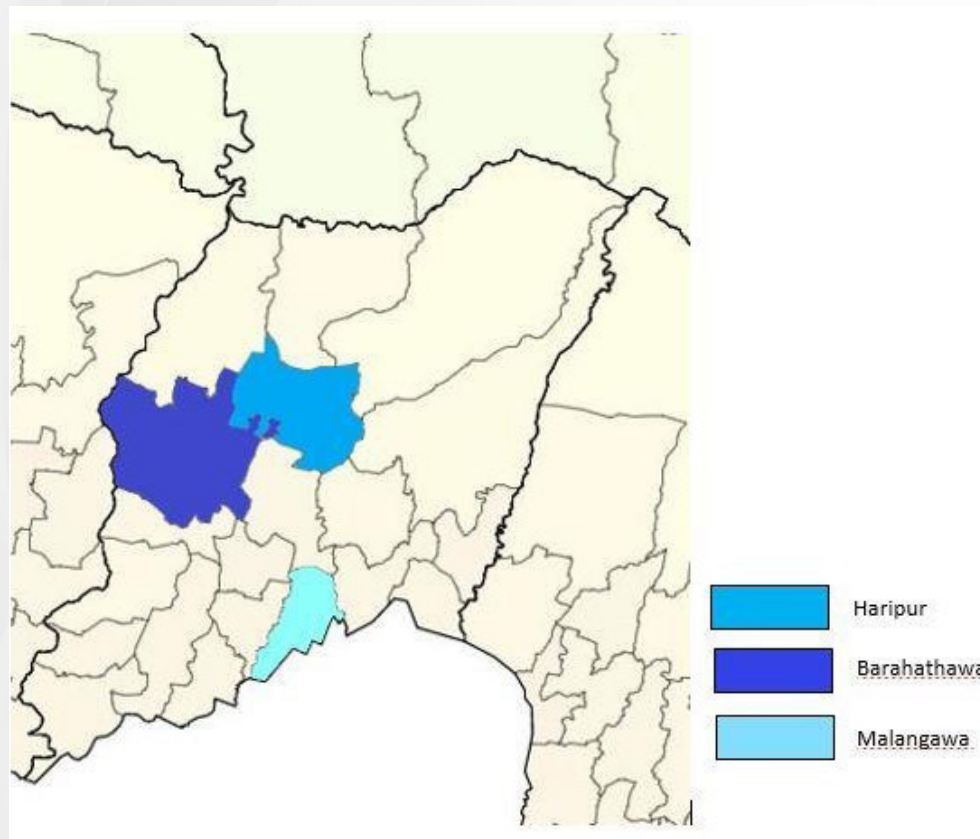


Figure 1: Map of Surveyed Palika

The District Headquarters (DHQ), Malangawa, is 25km south of the East-West National Highway (Nawalpur) and can also be reached by road from Janakpur (88km) and from Simara Airport (95km). Local Governments survey highlighted areas.

Objectives of Study

The pre- and post-surveys were conducted to compare the food security index of the people supported in the Sarlahi district. In more specific terms, the objectives were:

- To identify the change in food sufficiency level.
- Compare the supported people's reduced coping index (R-CSI) and Livelihood Coping strategy (L-CSI).
- And to find the changes in the Household Dietary Diversity Score (HDDS).

METHODOLOGY

This study adopted quantitative and qualitative methods to collect data/information and interpret the results. Primary data was collected from the survey. While qualitative pieces of information were gathered from documents review, key informants' interviews (KII).

Population and sample

For the survey total population was taken 1598 (555-cash supported, 1043-Agri Input support). Out of the total population, 317 samples were surveyed using proportionate random sampling for the study.

Data Quality Assurance

All enumerators were selected from the local community so that they know the local language and culture to get in-depth information and easily communicate. After one day of orientation on interview techniques and KOBO application, enumerators were deployed for the survey. The survey was based on mobile technology. The enumerators were asked to collect data with the members listed in the sample if he/she is available at the time of the survey. If not, ask another adult member of the same household. Prior consent with the interviewee was compulsory before asking questions. The individual respondent was free to answer all or only part of the questionnaire based on his/her choice. In the case of non-response, enumerators were instructed to interview the immediate next member of the same group.

The survey questionnaire and Key Informant Interview (KII) checklist were primarily used in the survey. All the tools are developed in the English language. Once finalized, it is translated into the local language (Nepali). KII tools focused on qualitative information on thematic areas – Food Security, Coping Strategy, COVID-19 impact on daily lives, market scenario, Government’s priorities, needs (short-term and long-term), relevancy, satisfaction, and other cross-cutting areas.

Ethical consideration

This study was conducted in compliance with ethical and human rights standards. Survey procedures were designed to protect participants’ privacy, allowing anonymity and voluntary participation. Prior verbal consent from all survey and meeting participants was obtained before the interview and KII. The study team, however, encouraged the selected respondents to participate in interviews. Before initiating the interview, confidentiality of the information was provided, and consent to proceed was sought. The study team has maintained the privacy of the respondents' information, including photographs and opinions.

Theoretical review for the calculation

Average Coping Strategies Index (R-CSI):

Q. In the past seven days, if there have been times when you did not have enough food or money to buy food, how often has your household had to:

S.N.	Coping Strategy	No. of Days (0-7)	Weight	Score (Frequency *Weight)
1	Rely on less preferred and less expensive foods?		1	
2	Borrow food, or rely on help from a friend or relative?		2	
3	Limit portion size at mealtimes?		1	
4	Restrict consumption by adults in order for small children to eat?		3	
5	Reduce number of meals eaten in a day?		1	

Or Alternatively for Context Specific Coping Strategy Index

S.N.	Coping Strategy	No. of Days (0-7)	Weight	Score (Frequency *Weight)
1	Rely on less preferred and less expensive foods?		1	
2	Borrow food, or rely on help from a friend or relative?		2	
3	Purchase food on credit?		2	
4	Gather wild food, hunt or harvest immature crops		4	
5	Consume seed stock held for next season		3	
6	Send household members to eat elsewhere		2	
7	Send household members to beg		4	

8	Limit portion size at mealtimes		1	
9	Restrict consumption by adults in order for small children to eat		2	
10	Feed working members at the expense of non-working members		2	
11	Reduce number of meals eaten in a day		2	
12	Skip entire days without eating		4	

Livelihood Coping Strategies Index (L-CSI)

During the past 30 days, did anyone in your household have to engage in any following behaviours due to lack of food or a lack of money to buy food.

List of behaviours	Response
1.1 Sold household assets/goods (radio, furniture, refrigerator, television, jewelry etc..)	<input type="checkbox"/>
1.2 Reduced non-food expenses on health (including drugs) and education	<input type="checkbox"/>
1.3 Sold productive assets or means of transport (sewing machine, wheelbarrow, bicycle, car, etc..)	<input type="checkbox"/>
1.4 Spent savings	<input type="checkbox"/>
1.5 Borrowed money / food from a formal lender / bank	<input type="checkbox"/>
1.6 Sold house or land	<input type="checkbox"/>
1.7 Withdrew children from school	<input type="checkbox"/>
1.8 Sold last female animals	<input type="checkbox"/>
1.9 Begging	<input type="checkbox"/>
1.10 Sold more animals (non-productive) than usual	<input type="checkbox"/>
Responses are categorized on: 1 = No, because I did not face a shortage of food; 2 = No, because I already sold those assets or have engaged in this activity within the last 12 months and cannot continue to do it; 3= Yes; 4=Not applicable	

Food Consumption Score (FCS)

Q How many days over the last 7 days, did members of your household eat the following food items, prepared and/or consumed at home?

Main components/steps:

- Frequency of consumption (in days) is asked over a recall period of seven days.
- Food items are grouped into nine standard groups with a maximum value of seven days/week.
- Those values are then multiplied by a weighting factor and summed to obtain the FCS.

The main food groups and their weights are as follows: Standard threshold for FCS

Food Group	Food Items (examples)	Weight
1. Main staples	Maize, maize porridge, rice, sorghum, millet, bread, cassava, plantains, potatoes, sweet potatoes, other tubers	2
2. Pulses	Beans, peas, groundnuts, cashew nuts	3
3. Vegetables	Vegetables, leafy greens	1
4. Fruit	Fresh and dried fruits	1
5. Meat and fish	Beef, goat, pork, chicken, duck, fish, eggs	4
6. Milk and dairy	Milk, yogurt, kefir, and other dairy	4
7. Sugar	Sugar, honey, candy, other products with sugar	0.5

8. Oil	Oil, butter, ghee, other fats	0.5
9. Condiments	Spices, coffee, tea, salt, small amounts of milk or fish powder	0

Standard Threshold For FCS

Standard thresholds	Thresholds with oil and sugar eaten on a daily basis (~7 days a week)	Food consumption profile
0 - 21	0 - 28	Poor
21.5 - 35	28.5 - 42	Borderline
> 35	> 42	Acceptable

ANALYSIS

Demographic

In total 317 samples were surveyed through the household survey, where 104 were from Barahtwa and Haripur equally and 109 were from Malangwa municipality, where 63% were female respondents and 37% were male respondents.

LG	Female	Male	Grand Total
Barahtwa	57	47	104
Haripur	69	35	104
Malangwa	75	34	109
Total	201 (63%)	116 (37%)	317

Ethnicity

Among the respondents surveyed from the livelihood-supported respondents highest nearly 42% were from the Dalit community, Madhesi 27%, Janajati 25%, Muslim 6%, and the remaining were from BCT.

Labels	Brahmin/Chhetri/Thakuri (BCT)	Dalit Hill	Dalit Tarai	Janajati Hill	Janajati Tarai	Madhesi	Muslim
Barahtwa (n=104)	0.96%	0.00%	21.15%	4.81%	53.85%	18.27%	0.96%
Haripur (n=104)	0.00%	0.00%	49.04%	0.00%	19.23%	17.31%	14.42%
Malangwa (n=109)	0.00%	0.92%	54.13%	0.00%	0.00%	43.12%	1.83%
Total (N=317)	0.32%	0.32%	41.64%	1.58%	23.97%	26.50%	5.68%

Educational Status

Based on the educational status, as in the baseline survey, this also showed that the illiterate population was highest in the program implemented areas. More than three-fourths (76%) were found illiterate population, similarly, 8% found attended primary school, 7% were literate from non-formal education, 6% were attended secondary school, 2% attended high school and very less than 1% were bachelor's degree holders.

Labels	Bachelor's and above	High School	Secondary	Primary	Literate only	Illiterate
Barahtwa	0.00%	2.88%	8.65%	6.73%	8.65%	73.08%
Haripur	0.00%	0.96%	4.81%	9.62%	3.85%	80.77%
Malangwa	0.92%	2.75%	4.59%	7.34%	9.17%	75.23%
Total	0.32%	2.21%	5.99%	7.89%	7.26%	76.34%

Family Members Contributing to HH Income

More than 60% of households depend upon the income of the single or no (nobody for reliable income) member of the family, which is not a good system based on food security. For food security, multiple members and multiple sources of income are counted as good for food security.

No. of family members contributing to HH income	0	1	2	3	4	5	6
Barahtwa	0.00%	16.72%	13.25%	2.21%	0.63%	0.00%	0.00%
Haripur	2.84%	21.45%	7.26%	1.26%	0.00%	0.00%	0.00%
Malangwa	1.89%	17.67%	11.67%	1.89%	0.63%	0.32%	0.32%
Total	4.73%	55.84%	32.18%	5.36%	1.26%	0.32%	0.32%

Major Source of Income

From the survey, it is observed that daily wage is the main source of income for the 84% HHs remaining 7% SME, Remittance 6%, Other agri 5%, Salary and pension 4%, Vegetable 3% respectively. This showed that even though the intervention area has a lot of potential for vegetable farming, people are not farming vegetables for business purposes. This intervention activity will play an essential role in motivating the farmer, and such results are expected in the future.

Source of income	Number of HH	% (Multiple Choice)
Daily Wage	266	83.9%
Small and Medium Scale Business	22	6.9%
Remittance	19	6.0%
Agri-Other Sources	15	4.7%
Job/Salary	9	2.8%
Vegetable Sales	9	2.8%
Pension/Government Allowance	3	0.9%
Livestock Sales	0	0.0%

Average Income

Intervention was focused on economic recovery activities, basically agriculture/livestock and short-term income-generating activities like CfW. The income is comparable only to these activities. In comparison to the baseline average annual income from vegetables, sales increased by 12.5%, average annual income increased in Small and Medium Scale businesses by 79%, and income from daily wages increased by 9 % which might be the daily wages opportunity created by the infrastructure renovation through CfW modality.

Average income	After intervention				Before
	Barahtwa	Haripur	Malangwa	Overall	Overall
Vegetable Sales	22857	25000	50000	26,111	23,200
Agri-Other Sources/crops. Cereals	51001	26667	0	46,134	25,182
Small and Medium Scale Business	7075	50200	108909	67,793	37,778
Job/Salary	15000	600	170000	99,511	74753
Daily Wage	19177	42206	93197	53,318	48,991
Pension/Government Allowance	23000	0	0	23,000	38,167
Remittance	23333	170000	143751	135,790	118,964
Livestock Sales	0	0	0	0	

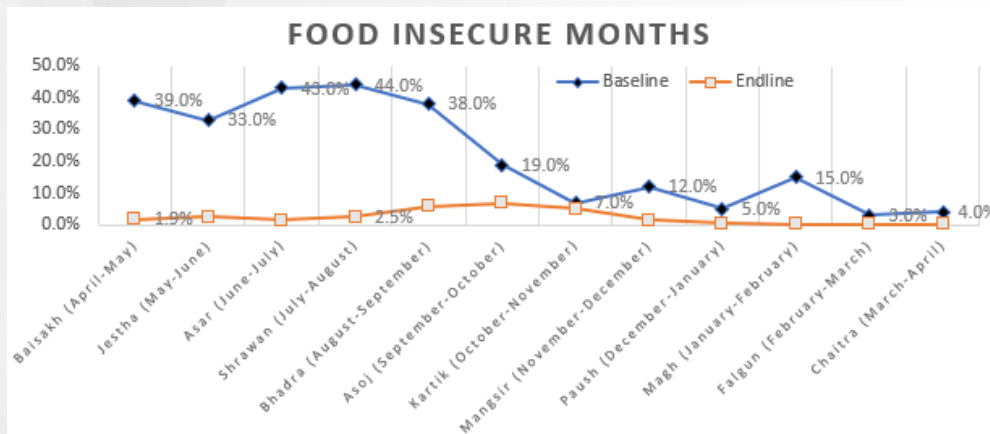
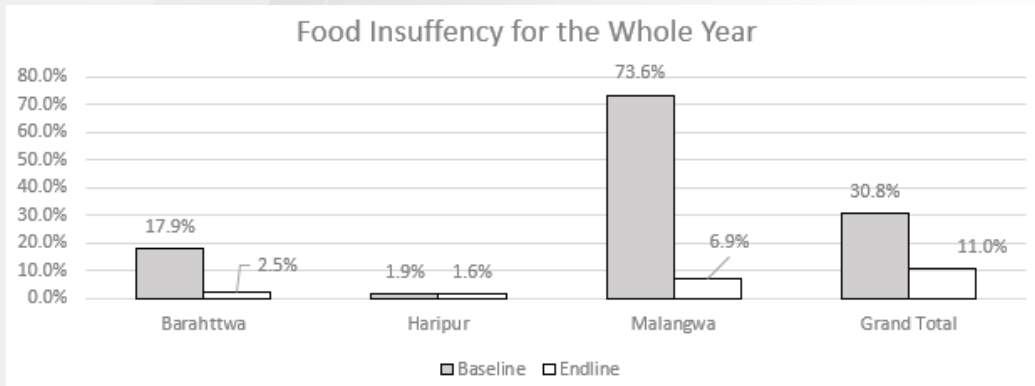
Food Security

Food security is the state of having reliable access to enough, affordable, nutritious food. Food security has declined dramatically in many developing countries especially during and after the COVID-19. This survey is trying to compare the status of food security before and after the support received.

Food Insufficiency for the Last Twelve Months

Respondents were asked about their food insufficiency for the whole year and the same question was asked during the baseline

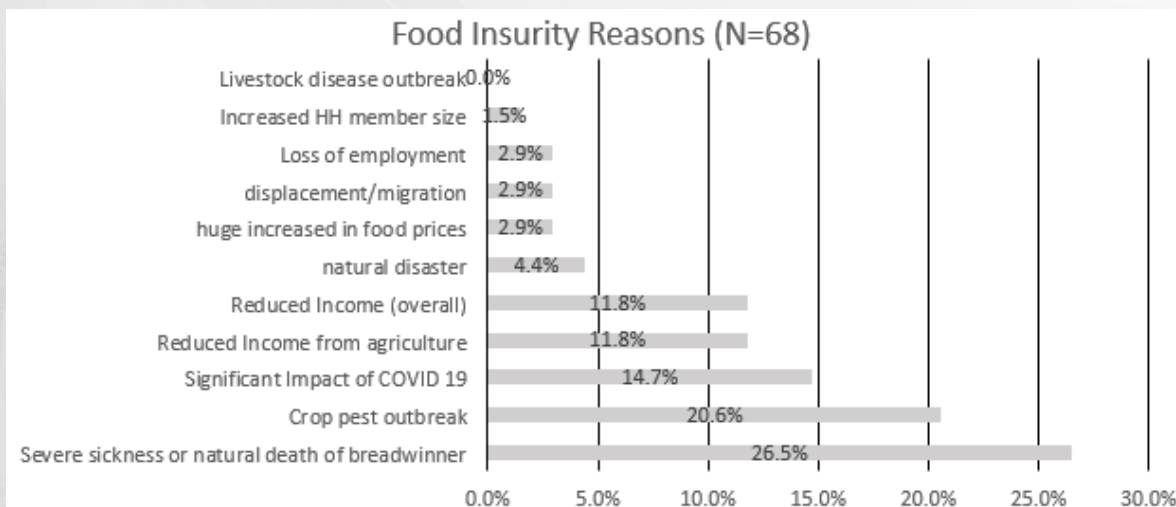
as well. While comparing baseline value with the endline, it is noted that overall food insufficiency was dramatically reduced by 64%. While comparing all LGs food insufficient reduced maximum in Malangwa.



The period of June to September is among the periods where families usually face the scenario of food insecurity. Food insecurity was found to drastically down even in the major food insecure months. The highest % of food insecure households were Shrawan Month with 44% HHs during the baseline, but in the same month food insecure households reduced to 2.5%. From the chart below, we can say that the food insecure households reduced in all months of the whole year.

Reasons for Food Insecurity

Major reasons for food insecurity were found to be severe sickness and natural diseases (27%). The second highest was cropping pest outbreak (21%), and the third highest was COVID impact (15%). The survey found that 50% of households' food insecurity was created by COVID (loss of job, sickness, and COVID itself).



Reduced Coping Strategy Index (R-CSI)

Reduced Coping Strategy Index (R-CSI) helps to understand the scenario of HHs in terms of adopting diverse coping strategies to manage the food over 7 days prior to the surveyed date. R-CSI is the lowered version of generally used coping strategy index, which has been contextualized and lowered down to five coping strategies as per the local context.

Based on the weighted score, the R-CSI has been categorised into high (≥ 19), moderate (9-18), Mild (4-8), and No/Low Insecure (0-3).

Based on R-CSI calculation, 51.9% were food secured during the baseline which significantly increased to 87%, and the percentage of food-insecure households reduced to 13% from 48.1% food-insecure households.

Local Government	No/Low Food Insecure	Mild Food Insecure	Moderately food insecure	High/Severely food insecure
Barahtwa (n=12)	91.67%	8.33%	0.00%	0.00%
Haripur (n=5)	80.00%	20.00%	0.00%	0.00%
Malangwa(n= 6)	83.33%	16.67%	0.00%	0.00%
Post test, Total (N=23)	86.96%	13.04%	0.00%	0.00%
Pretest, Total (N=106)	51.9%	34.9%	10.4%	2.8%

Livelihood Coping Strategy Index (L-CSI)

Livelihood Coping Strategies related indicator was used as a descriptor of a household's coping capacity alongside the R-CSI. The response received during baseline survey helped to understand the stress and insecurity faced by HHs and described their capacity to cope with future food shortages. The responses were categorized into stress, crisis, and emergency strategies.

The number of HHs under the crisis category reduced from 15.4% to 4.1%. Similarly, the number of households under the Emergency category reduced from 12.3% to 3.8%, and the number of crises reduced from 58.2 % to 6.8%

Category	Strategy	Barahtwa (n=104)	Haripur (n=104)	Malangwa (n=109)	Grand Total (N=317)	Pretest
Crisis	Withdrew children from school	1.9%	1.0%	0.0%	0.9%	2.80%
	Reduced non-food expenses	3.8%	1.0%	0.0%	1.6%	8.00%
	Sold productive assets	3.8%	1.0%	0.0%	1.6%	4.60%
	Total	9.6%	2.9%	0.0%	4.1%	15.40%
Emergency	Sold house or land	1.9%	0.0%	0.0%	0.6%	2.50%
	Sold last female animals	2.9%	1.0%	0.0%	1.3%	4.90%
	Begging	2.9%	1.9%	0.9%	1.9%	4.90%
	Total	7.7%	2.9%	0.9%	3.8%	12.30%
Stress	Spent savings	3.8%	1.9%	0.0%	1.9%	14.20%
	Borrowed money/food	3.8%	1.9%	0.0%	1.9%	33.20%
	Sold more animals (non-productive) than usual	2.9%	1.0%	0.0%	1.3%	4.00%
	Sold household assets/goods	3.8%	1.0%	0.0%	1.6%	6.80%
	Total	14.4%	5.8%	0.0%	6.6%	58.20%

Household Dietary Diversity Score (HDDS)

Household dietary diversity score (HDDS) is a qualitative measure of food consumption that reflects household access to a variety of foods. The Household Diversity Score provides help to understand the food consumption pattern among intervention HHs during the 24 hours prior to surveyed period. Cereal (99%) was the most consumed food type, while white tuber and root (2.2%) was the least consumed food type.

This survey helped categorize the intervention targeted HHs based on their dietary consumption pattern. HHs were categorized into low (0-4 diet type), average (5-8 diet type), and good (9-12 diet type).

The low dietary percentage was reduced to 13% from 58%, and the average dietary percentage increased to 87% from 38%. Overall, food consumed by four or more types increased from 42% to 87%, which is a significantly good result.

Label	Barahtwa	Haripur	Malangwa	Grand Total
Cereals	32.8%	32.5%	33.8%	99.1%
White tubers and roots	0.6%	0.9%	0.6%	2.2%
Vegetables	30.6%	27.8%	18.9%	77.3%
Fruits	3.8%	2.2%	1.9%	7.9%
Meat	11.0%	8.5%	1.3%	20.8%
Eggs	0.9%	7.3%	0.3%	8.5%
Fish	1.6%	5.0%	0.9%	7.6%
Legumes, nuts, and seeds	6.3%	1.9%	1.3%	9.5%
Milk and milk products	7.9%	11.7%	11.4%	30.9%
Oils and fats	0.6%	1.9%	0.0%	2.5%
Sweets	0.3%	3.8%	0.0%	4.1%
Spices, condiments, and beverages	9.1%	11.4%	5.0%	25.6%

Labels	Barahtwa	Haripur	Malangwa	Total	Pretest
Low	5.36%	6.62%	0.63%	12.62%	57.8%
Average	27.44%	26.18%	33.75%	87.38%	37.5%
Good	0.00%	0.00%	0.00%	0.00%	4.6%
Total	32.81%	32.81%	34.38%	100.00%	100.0%
Average No. of food items consumed	3.2	3.5	2.2	3.0	4.3.0

FINDING/RESULT

Cereals (99%) was the most consumed food type, while white tuber and root (2.2%) were the least consumed. Food consumed in four or more types increased from 42% to 87%. Livelihood Coping Strategies indicator (L-CSI) was used as a descriptor of a household's coping capacity alongside the R-CSI. The responses were categorized into stress, crisis, and emergency strategies. The number of HHs under the crisis category reduced from 15.4% to 4.1%. Similarly, the number of households under the Emergency category reduced from 12.3% to 3.8%, and the number of crises reduced from 58.2 % to 6.8%.

CONCLUSION

The study showed from the calculation R-CS that conditional support of the vulnerable people increased by nearly one-third (35%) within a month of support and helped them with coping strategies.

Acknowledgments

The authors are thankful to the ADRA Nepal for their contributions to data collection for this study. The views expressed here are those of the authors and do not necessarily reflect the views of the authors' institutions.

Acronym

ADRA	Adventist Development and Relief Agency
C-CSI	Context-Specific Coping Strategy Index
CFW	Cash for Work
CFRM	Complaint Feedback and Response Management
CHS	Core Humanitarian Standard
DQA	Data Quality Assurance
FCS	Food Consumption Score
FGD	Focus Group Discussion
GESI	Gender Equality and Social Inclusion
HDDS	Household Dietary Diversity Score
HH	Household

KII	Key Informant Interview
L-CSI	Livelihood Coping Strategies Index
LG	Local Government
NGO	Non-Government Organization
PwD	Person with Disability
R-CSI	Reduced Coping Strategy Index
RM	Rural Municipality

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