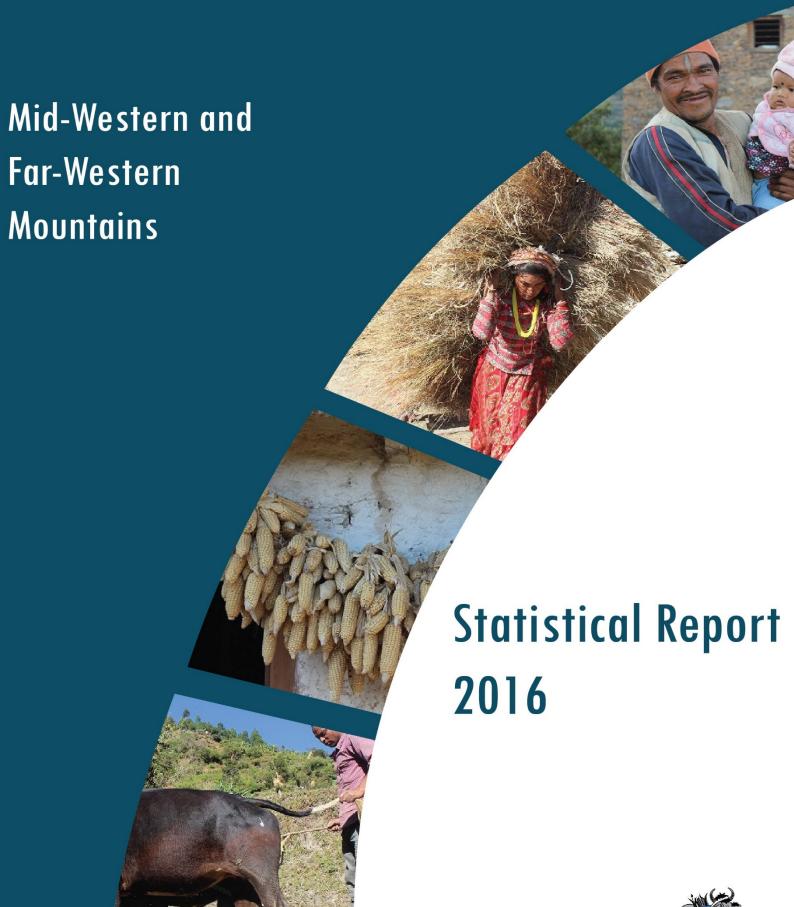
The NeKSAP Food Security Monitoring Survey





ABOUT THE NEKSAP FOOD SECURITY MONITORING SURVEY 2016

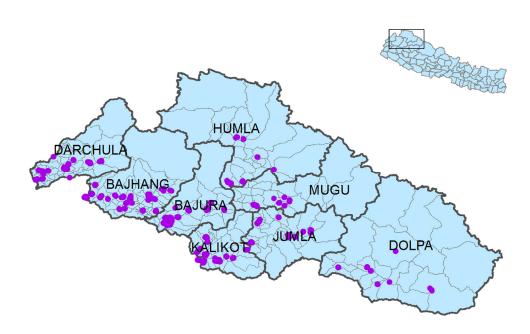
Objective

Since its inception, the Nepal Food Security Monitoring System (NeKSAP) has been regularly conducting household level food security monitoring surveys coupled with the assessment of markets to understand the overall food security situation of the country with special focus on the areas identified as food insecure by the NeKSAP. The findings from the survey are incorporated into the food security bulletins produced by the NeKSAP.

As part of ongoing monitoring of food security situation at the household level, the NeKSAP household survey focusing on midwestern and far-western mountain regions of Nepal was conducted on November 2016 as a joint collaboration between the Ministry of Agriculture Development (MoAD) and the World Food Programme, Nepal. The survey collected information on various topics such as household livelihoods, availability and consumption of food, expenditures, access to markets and other essential services as well as coping strategies.

This report presents the findings from the NeKSAP household food security survey 2016 of the mid-western and far-western mountain regions. The report fulfills following major objectives:

- To produce representative findings related to various aspects of food security in the mid and far-west mountain regions of Nepal as well as to provide an update on the food security situation of the areas affected by the recurrent droughts.
- To serve as a baseline for the upcoming household level food security monitoring system to be set-up in 2017.

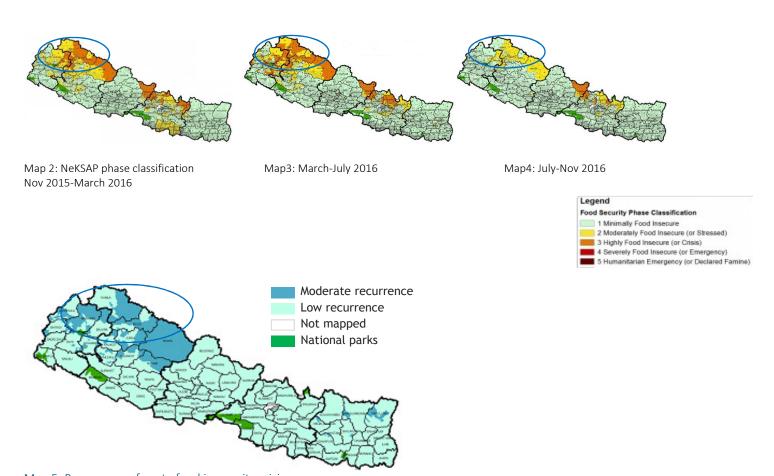


Map 1: Survey sites selected for the NeKSAP Food Security Monitoring Survey 2016

Background:

The mid-western and far-western mountain regions of Nepal comprise a total of 8 districts. The mid-western mountains, also known as the Karnali consists of 5 districts namely, Jumla, Kalikot, Mugu, Humla and Dolpa. The far-western mountains consists of three districts, Darchula, Bajhang and Bajura. These two regions in Nepal are considered the most food insecure owing to lack of productivity, remoteness, low purchasing power of households coupled with regular onslaught of natural disasters.

As a part of nationwide monitoring, the NeKSAP conducts area level food security monitoring of mid and far western mountain regions on a regular basis based on IPC approach whereby each VDC is classified into a range of food security phases from minimally food insecure to severely food insecure. As can be seen from the phase classification maps produced by NeKSAP below, a large number of VDCs in the mid and far-western mountains have been consistently classified as moderately and highly food insecure.



Map 5: Recurrence of acute food insecurity crisis

NeKSAP also produces a composite map that highlights recurrence of acute food insecurity across the country. Map 4 shows that the mid and far-western mountain regions suffer from repeated instances of food insecurity crises compared to other regions of Nepal.

Sample design

The household survey design is based on a cross sectional sample of 1470 households with a two stage stratified cluster sample methodology. As one of the design objectives was to generate representative estimates by two regions (Mid-western mountains and Far-Western Mountains), the sample was stratified by these two strata. Sampling was done in two following stages:

First stage: Ward, the lowest level administrative unit, was chosen to be the Primary Sampling Units (PSUs) selected with Probability Proportional to Size (PPS) with the number of households in the wards as the measure of size. 49 wards from each stratum were selected in this stage resulting in a total of 98 wards. The sample frame for ward selection was obtained from National Population and Housing Census 2011 conducted by the Central Bureau of Statistics (CBS), Nepal. Second Stage: 15 households were selected for interview from each of the 98 wards. The survey interviewed a total of 1470 households. The households were selected randomly from the list of all the households in the selected PSUs which meant that each household in the PSU had equal probability of being selected. A complete household list was prepared upon arrival into the ward prior to selection.

Table below shows the sample distribution by geographic strata.

Stratum	District	Wards (PSUs)	Households
Mid - Western Mountains	Jumla	12	180
	Kalikot	17	255
	Humla	8	120
	Mugu	5	75
	Dolpa	7	105
Far-western Mountains	Bajhang	23	345
	Bajura	13	195
	Darchula	13	195

Sample distribution by Mid and Far-Western mountain districts

Survey questionnaire

The NeKSAP food security survey used two questionnaires: household survey questionnaire to be administered at the household level and market survey questionnaire with the traders being the respondents. Most of the sections in the questionnaires followed standard formats that were used in previous food security surveys to ensure that the findings were comparable across time. A few new modules related to market access, migration and remittances were also introduced. Annex 1 contains the questionnaires used for the survey.

Summary of the major findings

Demographics and socio-economic status

Households in the mid and far-western mountains on average had 6 family members. The majority of population were Chhetris followed by Dalits and Brahmins. 17% of the households were headed by female.

46.2% of household heads were found to have had no education whereas only 16.6% of household heads had +2 or higher level education.

26% of households in mid-western region belonged to the lowest wealth quintile group compared to only 10% in the far-western mountains which showed that higher proportion of households in the mid-western regions were economically vulnerable than far-western households.

Livelihoods

78.1% of households identified agriculture as the major source of income and livelihoods in the last 12 months preceding the survey. Other most adopted livelihood strategies were various forms of unskilled labor activities (22.3%) closely followed by remittance (21.3%).

Overall, 43% of households reported to have at least 1 migrated member not present at the time of survey. The proportion was much higher in the far-western mountains (55%) compared to mid-western mountains (28%). 60% of households with migrants had at least one of their members to go India and were mostly engaged in low skilled jobs.

Access to markets

Only 26% of households lived within 30 minutes from the most visited market highlighting the difficulties the households face in accessing the markets in these areas. 42% of households in mid-western mountains needed more than 2 hours to reach the market compared to only 15% of households in far-western mountains.

52% of total food groups consumed by the households was purchased from the markets. The food groups included cereals, pulses, vegetables, meat, fruits, milk products, sugar and oil.

Food consumption and food security

Based on the availability of cereal grains at the household level, the households' current cereal food stock was estimated to last for about 4 months.

34.4% of households were found to have inadequate food consumption and 25% of households had poor dietary diversity. Households in mid-western mountains fared worse that far-western mountains on both of the indicators of households' access to food.

Based on CARI, which is a consolidated approached for measuring food insecurity, 20.6% of households were classified as food insecure in the mid-western and farwestern mountains. The prevalence of food insecurity was found to be higher in mid-western mountains (23.6%) than the far-western mountains(18%).

Most of the households classified as moderately and severely food insecure had poor current consumption of food coupled with the economic vulnerability measured as a share of total expenditure on food. In mid and farwestern mountains, households had spent 59% of their total expenditure on food.

Impact of drought

Based on the food consumption, more than half of the households (54.8%) in the drought affected areas were classified as having inadequate food consumption and 40.1% of households had poor dietary diversity.

Based on CARI, 37.7% of households were food insecure in the drought affected areas which is 17% more than the overall food insecurity prevalence of mid and far-western mountains.

Overall, households in the drought affected areas had low cereal stock that was estimated to last only for a couple of months, were consuming an inadequate diet and as a result, the proportion that had been classified as food insecure is significantly higher than the overall prevalence of food insecurity in the mid and far-western mountain regions.

Household demographics and socio-economic status

Household and housing Characteristic

Households in the mid and far-western mountains had on average, 6 family members. 16.8% of the households had women as the heads of households. The population was predominantly Chhetri (64.1%) followed by Dalit (22%) and Brahmin (10.3%). Table 1 below shows the breakdown of the households by caste of the household head.

	FW Mountains	MW Mountains	Total
Brahmin	8.0%	13.0%	10.3%
Chhetri Dalit	69.8% 21.2%	57.5% 23.0%	64.1% 22.0%
Janajati Male headed	1.1% 83.7%	6.5% 82.7%	3.6% 83.2%
Female headed	16.3%	17.3%	16.8%

Table 1: Caste composition of mid and far-western mountains

46.2% of household heads were found to have had no education whereas only 16.6% of household heads had higher secondary or higher level education. The literacy rate for household head was slightly lower in the midwestern mountains region.

	None	Primary	Secondary	Higher
FW Mountains	43.5%	20.0%	19.9%	16.6%
MW Mountains	49.4%	15.8%	18.2%	16.6%
Total	46.2%	18.1%	19.1%	16.6%

Table 2: Education level of head of household

87.9% of households had access to improved drinking water sources. Improved drinking water sources refer to the use of sources such as piped water (into dwelling, compound, yard or plot, to neighbor, public tap/standpipe), tube-well/borehole, protected well, protected spring and rainwater collection.

89.2% of households has access to improved sanitation facilities. These facilities hygienically separate human excreta from human contact.

12.2% of households in mid-western mountains still used open defecation compared to 6.4% of households in the far-west mountains region.

	FW Mountains	MW Mountains	Total
Improved drinking water sources	88.9%	86.7%	87.9%
Unimproved drinking water sources	11.1%	13.3%	12.1%
Improved sanitation	92.4%	85.5%	91.1%
Unimproved sanitation	7.6%	14.5%	8.9%
Open defecation	6.4%	12.2%	9.1%

Table 3: Types of drinking water and sanitation sources

A vast majority of households (98.4%) in the two regions used firewood i.e. solid fuel for cooking. Liquefied petroleum gas (LPG) was used only by 1.6% of the households.

The primary source of lighting for majority of households was electricity as reported by 47.4% of the households. It was also found that electricity was available mostly at night time. This was followed by solar panels (38.4%) mostly used by the households in mid-western mountains region.

	FW Mountains	MW Mountains	Total
Cooking			
Use of firewood	97.7%	99.2%	98.4%
Use of LPG	2.3%	0.8%	1.6%
Lighting			
Electricity	60.4%	32.2%	47.4%
Solar panels	26.6%	52.1%	38.4%
Wood	0.8%	5.7%	3.1%
Battery lamp	5.2%	3.5%	4.4%

Table 4: Use of cooking material and sources of lighting

Ownership of assets

96.8% of households in the mid-western and far-western mountains owned land. Households on average owned 0.25 hectares of land out of which 0.19 hectare was upland (pakha/bari) and 0.06 hectare was lowland (khet).

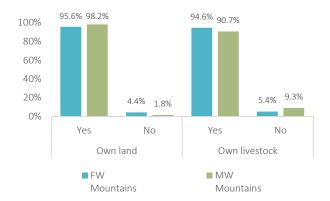


Figure 1: Ownership of land and livestock

92.8% of households owned livestock. The average number of large ruminants (cattle, buffaloes, yak) and small ruminants (goat, sheep) owned by the household were 3.2 and 3.1 respectively.

	Sheep goats	Yak cow buffaloes	Poultry
FW Mountains	2.6	3.6	0.3
MW Mountains	3.6	2.8	1.2
Total	3.1	3.2	0.7

Table 5: Mean number of livestock owned by households

As can be seen from table 5, households in far-western mountains owned more large ruminants whereas households in mid-western mountains owned more small ruminants.

	FW	MW	
Strata	Mountains	Mountains	Total
Radio/cassette player	44.4%	25.2%	35.6%
TV/VCR/VCD Player	12.0%	9.9%	11.1%
Cable line/Dish TV	11.9%	8.4%	10.3%
Mobile phone	80.0%	71.5%	76.1%
Non mobile phone (landline, CDMA)	4.0%	3.2%	3.6%
Table/chair	24.4%	11.9%	18.6%
Furniture (bed/sofa cupboards)	61.8%	53.2%	57.8%
Motor bike	0.3%	0.9%	0.6%
Bicycle	0.2%	0.4%	0.3%
Wall clock/fan	14.7%	3.6%	9.6%

Table 6: Ownership of household assets

Table 6 shows ownership of different types of assets by the surveyed households. Most households owned mobile phones followed by household furniture and radio. Households on average owned 1.7 SIM cards. The

information of assets owned by the households was then used to construct wealth index using the principal component analysis method. Wealth index is considered a measure of households' economic wellbeing. The index is then used to create wealth quintiles. The highest quintile represents economically well off households while the lowest quintile represents economically vulnerable households.

A distribution of wealth quintile by mid and far-western mountains in figure 2 reveals that more than one-fourth (25.7%) of households in mid-western region belong to the lowest wealth quintile compared to only 10.1% in the farwestern mountains.

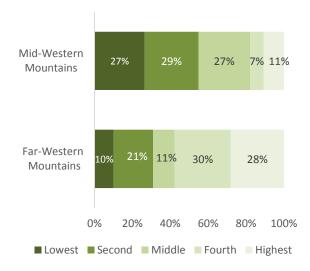


Figure 2: Asset index quintile by MW and FW Mountains

Households in the highest quintile tended to own more land than the households in the lower quintile as well as owned more large ruminants. It is also noted that households in the lower quintiles tended to own more small ruminants than the large ruminants.

Asset index quintile	Land owned (Hectare)	Sheep goats	Yak cow buffaloes
Lowest	0.18	3.7	2.5
Second	0.23	3.1	3.1
Middle	0.24	3.3	3.1
Fourth	0.24	3.3	3.5
Highest	0.33	2.0	3.7
Total	0.25	3.1	3.2

Table 7: Ownership of land and livestock by asset index quintile

Household livelihoods

Employment opportunities

Nepal is predominantly an agricultural country and hence agriculture dominates as the primarily livelihood activity for the households in mid-west and far-western mountains. Households were asked to identify 2 major livelihood

	FW	MW	
	Mountains	Mountains	Total
Agriculture(self involved)	75.0%	81.7%	78.1%
Agriculture wage labour	4.6%	15.1%	9.5%
Other unskilled labour	20.3%	24.6%	22.3%
Skilled labour	10.8%	6.6%	8.9%
Remittance	31.4%	9.6%	21.3%
Salaried Employment	12.5%	11.3%	12.0%
Trade/Shop keeping	7.1%	4.8%	6.0%
Sale of NTFP	4.2%	16.7%	9.9%
Social benefit schemes	5.1%	4.7%	4.9%
Humanitarian/Dev. assistance	.3%	.3%	.3%

Table 8: Sources of household income over the past 12 months

strategies used to generate income for the households. 78.1% of households identified agriculture as the major source of income and livelihoods in the last 12 months preceding the survey. Other most adopted livelihood strategies were various forms of unskilled labor activities (22.3%) closely followed by remittance (21.3%).

It was found that 31.4% of households in the farwestern mountains region depended on remittance received from outside Nepal compared to only 9.6% of households in the mid-western mountains region. There is also a significant difference between mid-western and far-western mountains in the proportion of households that are involved in agriculture daily wage labor as their major means of livelihoods.

Table 9: Sources of income by wealth quintile

	Wealth quintile				
	Lowest	Second	Middle	Fourth	Highest
Agriculture(self owned)	72.6%	71.8%	81.0%	83.3%	85.9%
Agriculture wage labour (unskilled)	14.8%	12.8%	12.4%	4.2%	4.7%
Other unskilled labour (porter, stone quarry worker, etc)	37.1%	30.6%	19.4%	18.1%	8.4%
Skilled labour (masonry, carpentry,etc)	8.0%	6.4%	9.6%	10.1%	9.6%
Remittance	17.1%	19.6%	15.1%	29.0%	21.4%
Salaried Employment(Govt/private companies/NGO/Ingo)	1.9%	7.4%	9.4%	12.0%	30.8%
Trade/Shop keeping	.8%	3.8%	5.3%	7.7%	12.4%
Sale of NTFP	15.3%	10.9%	8.9%	6.2%	7.6%
Social benefit schemes	9.5%	6.0%	2.8%	3.9%	1.5%
Humanitarian/Development assistance	.6%	.3%	.8%	0.0%	0.0%

Table 9 above shows that agriculture permeates through all wealth quintile groups which is a proxy for household economic welfare. Some livelihood strategies, however, seem to have been adopted by households in the lower wealth quintile. Households that depend on agriculture and non-agriculture wage labour as their means of livelihood mostly belong to lowest, second and middle asset index quintile. Households adopting more sustainable livelihood

strategies such as salaried employment and trade mostly belong to the fourth and highest asset index quintile. It was also noted that 9.5% of households in the lowest quintile depend on social benefit schemes compared to only 1.5% of households in the highest quintile.

Migration and Remittance

Over the past decade, Nepal has seen a big surge in the number of Nepalese going abroad to make a living. In the survey of the mid-west and far-western mountains, households were asked if they had any member *currently* absent as a result of migration. 42.7% of households reported to have at least 1 migrated member not present at the time of survey. However, it must be noted that the actual percentage of households that had at least 1 migrated member in these regions is estimated to be higher given the fact that the survey was conducted after harvest season when seasonal migrants normally come back home and were found to be residing at home at the time of survey.

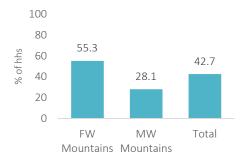


Fig 3: Households with at least 1 migrant member

Figure 3 shows that almost twice the number of households in far-western mountains had at least 1 migrated member compared to mid-western mountains. This also supports the finding that more households in far-western region depended on remittance as a means of livelihoods. (table 8)

Out of the total number of household members that migrated, 81.3% were male members.

	FW	MW	
	Mountains	Mountains	Total
Another ward/settlement of VDC	0%	1.0%	.3%
Other VDC within district	2.2%	2.4%	2.3%
District HQ	1.6%	5.6%	2.8%
Other district	21.6%	38.9%	26.9%
India	66.3%	45.8%	60.0%
Gulf countries	6.7%	7.0%	6.8%
Malaysia	7.1%	7.0%	7.0%
Other Asian countries/Europe/America	1.0%	2.1%	1.4%

Table 10: Destination of the migrated member of households

60% of households with migrants sent at least one of their members to India out of which 66.3% households were from far-western mountains and 45.8% were from the midwestern mountains. 26.9% of households also send members to other districts within the country most likely to be Kathmandu.

When asked about the reason for migration, 64.4% of households cited lack of employment in the area and difficulty maintaining basic necessities as main reasons for migration.

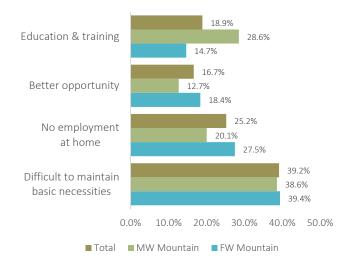


Fig 4: Reasons for migration of household members

61% of households borrowed money to arrange finances for their members to settle into their migration destinations. More households in the far-western mountains arranged own funding to send their members out compared to mid-western mountain regions.

	Far- Western Mountains	Mid- Western Mountains	Total
Own money/cash	41.4%	33.7%	39.0%
Lending from relatives	26.1%	38.9%	30.1%
Lending from local money lenders	26.6%	20.0%	24.6%
Lending from bank/finance/cooperatives	5.9%	7.4%	6.3%

Table 11: Arrangement of funds for migration

50.1% of households reported that the migrated members were engaged in low skilled jobs such as construction workers, waiters, domestic labor etc. 18.2% of households

in mid-western mountains regions had migrants who had not found the job yet or were between jobs.

	FW	MW	
	Mountains	Mountains	Total
High skill jobs	8.9%	12.1%	9.7%
Medium skill jobs	40.5%	18.7%	34.8%
Low skill job	48.9%	57.1%	51.1%
No job found yet	7.6%	18.2%	10.4%

Table 12: Types of jobs undertaken by work migrants

The migrants on average sent or brought back NPR 69,053 over the past 12 months preceding the survey. The amount increased as the type of work the migrants were engaged became more skilled.

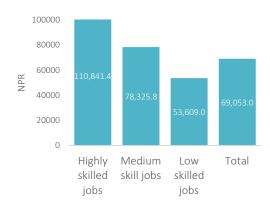


Fig 5: Amount sent back from abroad in the last 12 months

The migration destination was also a key determinant of the amount of money sent back to Nepal by the work migrants. Migrants working in India which represents 60% of migration destination sent the lowest amount while highest amounts were sent by workers from Gulf countries and Malaysia but only 15.8% households had migrants working there.

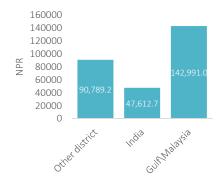


Fig 6: Amount sent back by work destination

Remittance continues to play a key role in contributing to the welfare of the mid and far-western mountain households. 50.4% of households that relied on remittance as one of the main income sources belong to fourth and highest wealth quintile (table 9).

Most of the received amount was used to buy foods as reported by 77.3% of households as shown on table 13. Very few households (5.2%) reported that the money was used for longer term investments such as agriculture, land purchase and savings.

	FW	MW	
	Mountains	Mountains	Total
Buy foods	78.6%	72.5%	77.3%
Buy basic non-foods	9.1%	7.5%	8.8%
Housing, land etc	1.1%	1.3%	1.1%
Education	4.9%	8.8%	5.8%
Invest in agriculture	0.7%	0.0%	0.5%
Medical treatment	3.9%	0.0%	3.0%
Savings	1.8%	10.0%	3.6%

Table 13: Use of money received through remittance

Access to markets

Markets are an important food security components to ensure availability as well as access to food for the households. Markets also provide important agriculture inputs such as seed and fertilizer for increased productivity. Markets that are integrated and well-functioning allow transmission of price signals allowing the changes in demand to be met by supply. Markets are also important in ensuring that households have access to diverse food promoting food security and nutrition.

In the mid-western and far-western mountains, only 25.8% of households lived within 30 minutes from the market mostly used by them. This highlights the difficulties the households face in accessing the markets in these areas. It should be noted that 42.3% of households in mid-western mountains needed more than 2 hours to reach the market. Only 14.9% of households needed to travel for more than 2 hours to reach the market in far-western mountains indicating that markets were more prevalent and accessible in the far-western mountains than the mid-western mountains.

	Less than	30 to 60	1 to 2	More than
	30 minutes	minutes	hours	2 hours
FW Mountains	30.4%	41.2%	13.6%	14.9%
MW Mountains	20.5%	18.7%	18.5%	42.3%
Total	25.8%	30.8%	15.9%	27.6%

Table 14: Time taken to reach the market from home

Households on average went to market 4 times a month. Households in the mid-western mountains went to markets at a lower frequency than the far-western mountains households.

	Mean
Far-Western Mountains	4.0
Mid-Western Mountains	3.7
Total	3.9

Table 15: Mean number of times markets visited per month

Cereals, pulses and edible oils in the mid and far-western mountain regions were found to be sufficiently available in the markets. Foods like vegetables, fruits and pulses as well as agriculture tools and inputs were less available in the mid-western mountains compared to far-west mountains.

	FW	MW	Total
Cereals	99.6%	93.7%	96.9%
Pulses	86.0%	77.6%	82.1%
Vegetables	56.6%	39.0%	48.5%
Fruits	46.5%	32.0%	39.8%
Edible oils	99.2%	98.2%	98.7%
Agriculture tools/Inputs	48.7%	32.5%	41.3%
Other non food items	61.7%	77.6%	69.0%

Table 16: Food and non-food items found in the markets

20.6% of households in the mid and far-western mountains sold their produce in the markets. This highlights the subsistence nature of agriculture in these areas since majority of households are unable to produce enough to sell their produce and make additional income.

	Yes	No
Far-Western Mountains	21.1%	78.9%
Mid-Western Mountains	20.1%	79.9%
Total	20.6%	79.4%

Table 17: Use of market to sell household produce

86.9% of households sold pulses in the markets followed by cereals (23.9%).

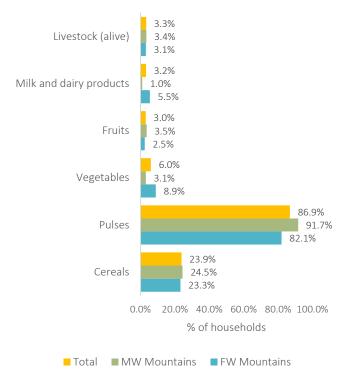


Fig 7: Food and non-food items sold by the households

Overview of current market situation

In addition to the household survey, a survey of markets located at the district headquarters and sampled municipalities/VDCs of mid and far-western mountains was conducted in order to understand the price and market situation in the region. A total of 78 traders were surveyed with information collected on prices of basic food commodities, size of markets, sufficiency of food commodities and market situation such as demand, supply and transportation of goods.

As seen from table 18, type of road connection to the market was found to be a major determinant of commodity prices. Retail prices of most food commodities were lower in the markets with better road connection while retail prices were almost double in the markets without connection to a road network. This is mainly due to high transaction costs associated with delivering commodities to remote areas that lack proper transport infrastructure which is crucial in keeping prices low and stable as well as less volatile.

	Coarse	Wheat	Soybean	Broken	Red
Black topped	rice 42.0	flour 42.9	oil 146.4	lentil 151.4	potato 35.8
Gravel	42.4	42.8	140.5	176.0	35.0
Earthen	46.5	56.6	178.7	183.3	41.4
No road					40.8
	75.7	79.3	202.1	212.6	
Total	56.1	58.4	172.6	180.2	38.8

Table 18: Retail prices of food commodities (NPR/kg or liter)

The information about the number of traders selling different types of commodities was collected to understand tentative market size which can indicate the level of competition among traders in the mid-western and farwestern mountains. The average number of traders in the markets was found to be 39 with large markets hosting about 72 traders on average located in the DHQ markets as expected. The secondary markets on average were found to host about 39 traders. More traders (18) sold both food and non-food items while only about 8.1 traders sold only food.

	Food only	Non-food only	Both food and non-food	Total
Primary (DHQ)	13.5	24.1	34.8	72.4
Secondary	6.3	9.6	12.3	28.2
Total	8.1	13.1	18.1	39.3

Table 19: Average number of traders in a market

Table 20 shows that about two-third traders (64.1%) reported sufficient stock of food commodities at the time of survey. Most traders (76.2%) in primary markets had sufficient food stock compared to the traders in the secondary markets (59.6%). This could mainly be due to better connection with road networks, including high demand for food with higher transactions in the primary markets that often leads to improved supply of commodities.

Sufficient	Insufficient
76.2%	23.8%)
59.6%	40.4%)
64.1%	35.9%
	76.2% 59.6%

Table 20: Availability of food by type of market



Fig 8: change in demand, supply and transportation services

Figure 8 displays the situation of markets at the time of survey in terms of changes in demand, supply and transportation services compared to a month before. More than one-third of traders reported that the demand for goods had decreased since last month. This could be a result of the recent harvest in which households have access to food from their own productions. Most traders (91.9%) reported that there were better or stable transportation services compared to last month. Overall, market situation, mainly demand, supply and transportation services in the mid-western and far-western mountains seemed to have improved or remained stable compared to a month before.

Household Stocks, Food Consumption and Food Security

Cereal Food Stocks

Households in the mid-western and far-western mountains were asked about the cereal food stocks present in their households at the time of survey that included paddy, wheat, maize, millet, barley and potato. The edible portion of the cereal stock on average was found to be 326 kg. It should be noted that the survey was conducted after harvest of summer crops.



Fig 9: Mean cereal stock (kg) at the households

An estimated food sufficiency period reported in months was calculated using the standard cereal requirement of 0.5 kg/person/day. It was found that the current cereal stock would last for about 4 months.

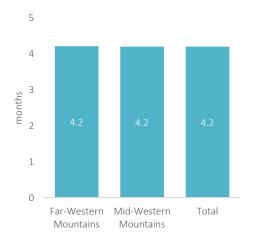


Fig 10: Number of months current stock is expected to last

Sources of food

52% of total food groups consumed by the households was purchased from the markets. The food groups included

cereals, pulses, vegetables, meat, fruits, milk products, sugar and oil.

Strata	Own production	Markets	Hunting/ Gathering	Aid
FW Mountains	49.4%	47.9%	0.6%	1.5%
MW Mountains	40.9%	57.3%	0.4%	1.0%
Total	46.1%	52.2%	0.5%	1.3%

Table 21: Sources of food groups for households

Household Food Consumption

Households were asked about the food groups consumed in the past 7 days preceding the survey. Table 18 shows average number of days different food items were consumed. A typical household diet consisted mostly of cereal, pulses, vegetables, oils and sugar out of which only cereals, pulses and oils were consumed almost on a daily basis. Pulses and Vegetables were consumed 5 and 4 days a week respectively. There was a lack of meat products, fruits and dairy products indicating a lack of dietary diversity in the household diet.

	FW	MW	
Strata	Mountains	Mountains	Total
Cereals, Tubers	7.0	6.9	7.0
Pulses, Beans	5.4	5.6	5.5
Dairy products	3.1	1.9	2.5
Meat fish egg	0.4	0.6	0.5
Vegetables	4.2	3.3	3.8
Fruits	0.7	0.7	0.7
Ghee Oil fats	5.5	6.8	6.1
Sugar, Sweets	4.6	3.5	4.1

Table 22: Number of days food groups consumed in the last 7 days

<u>Food consumption groups and dietary</u> diversity

Food Consumption Score (FCS), an indicator of household level food access is a composite indicator that takes into account the diet diversity, food frequency and nutritional importance of food groups consumed by the households. Each household is assigned a score from 1 to 112 based on their food consumption, which ultimately classifies them into two food consumption groups (inadequate or adequate consumption groups). Households obtaining a

food consumption score of 42 and above are considered as having consumed an acceptable diet.

	Food Consumption	Dietary Diversity
	Score	Score
Far-Western Mountains	53.9	5.6
Mid-Western Mountains	49.9	5.5
Total	52.1	5.5

Table 23: Mean food consumption score and dietary diversity score

The mean FCS was found to be 52.1. The score was lower for mid-western mountains compared to far-western mountains. Similarly, Dietary Diversity Score (DDS) was found to be 5.5. DDS is an indicator that looks at number of food groups consumed by the households out of 8 food groups.

Based on the FCS, 34.4% of households were found to have inadequate food consumption and 25% of households had poor dietary diversitypul. Households in mid-western mountains fared worse that far-western mountains on both of the indicators of households' access to food.

	Inadequate food consumption	Poor diet diversity
FW Mountains	31.6%	23.4%
MW Mountains	37.6%	26.8%
Total	34.4%	25.0%

Table 24: Household food consumption and dietary diversity

57.6% of households with inadequate food consumption belonged to lowest wealth quintile which is in sharp contrast to only 11.3% of poor consumption households that belonged to highest quintile. This demonstrates a strong relationship between access to food and household economic well-being.

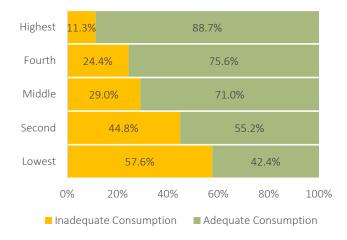


Fig 11: Food consumption groups by wealth quintile

Similar strong relationship was also observed between household welfare and diversity of food consumed (fig 14). 49% of households with poor dietary diversity belonged to the lowest wealth quintile.



Fig 12: Food consumption group by wealth quintile

Consolidated Approach for Reporting Indicators of food security (CARI)

CARI, a Consolidated Approach for Reporting Indicators of Food Security combines a suite of food security indicators into a summary indicator called *Food Security Index (FSI)* which is designed to represent a population's overall food security status. The indicators used are food consumption score, share of total expenditure on food and coping strategy index. The output of CARI is a console that classifies population into 4 categories (food secure, marginally food secure, moderately food insecure and severely food insecure).

	FW	MW	
	Mountains	Mountains	Total
Food secure	35.0%	39.0%	36.8%
Marginally food secure	47.0%	37.4%	42.6%
Moderately food insecure	17.6%	22.4%	19.8%
Severely food insecure	.4%	1.2%	.8%

Table 25: Prevalence of food insecurity based on CARI

Table 25 below shows the output of CARI. Based on this, 20.6% of households were classified as food insecure in the mid-western and far-western mountains. The prevalence of food insecurity was found to be higher in mid-western mountains (23.6%) than the far-western mountains (18%).

	Food	Marginally food	Moderately food	Severely food
Indicator (%hhs)	secure	secure	insecure	insecure
Food consumption				
score	65.6		27.1	7.3
Food expenditure				
share	22.6	39.4	26.3	11.7
Livelihood coping				
strategy	84.2	11.6	2.7	1.3
Food Security Index	36.8	42.6	19.8	0.8

Table 26: CARI food security console

Table 26 provides a detail breakdown of the CARI outputs that help understand the determinants of food insecurity in the region. It was found that most of the households classified as moderately and severely food insecure had poor current consumption of food shown by the food consumption score indicator coupled with the economic vulnerability measured from food expenditure share. Households that spent a high proportion (more than 50%) of their total expenditure on food are considered economically vulnerable. In mid and far-western mountains, households had spent 59% of their total expenditure on food.

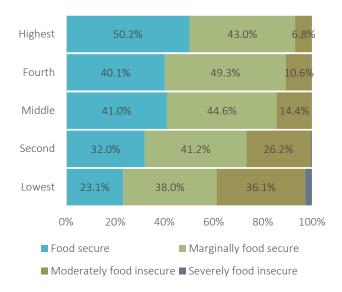


Fig 13: Prevalence of food insecurity by wealth quintile

The underlying relationship between economic vulnerability of households in mid and far-western regions and food insecurity is further highlighted by figure 13. 39% of households in the lowest wealth quintile are moderately and severely food insecure. On the other hand, only 6.8% of households in the highest wealth quintile are food insecure.

There was a positive correlation between amount of land owned and household food security status. 24.5% of households that own less than 0.2 hectares of land are classified food insecure compared to only 15% of households that own more than 0.2 hectares. Food insecure households owned less number of large ruminants.

	% hhs			
	<0.2ha >0.2ha yak/cow			
Food secure	33.7%	40.2%	3.7	
Marginally food secure	41.0%	44.3%	3.7	
Moderately food insecure	24.5%	15.0%	2.7	

Table 27: Food security by ownership of land and livestock

Positive association was also found between household head's education level and food security status of the households as shown on table 28. 58.9% of food insecure households had illiterate household heads whereas only 9.4% of households with higher education (+2 level or more) were found to be moderately food insecure.

	Illiterate	Primary	Secondary	Higher
Food secure	40.3%	16.0%	21.0%	22.6%
Marginally food secure	45.7%	19.3%	19.9%	15.1%
Moderately food insecure	58.9%	18.8%	12.9%	9.4%

Table 28: Food security and head of household's education

Households' water and sanitation situation had an impact on household food security. 18.7% of food insecure households were using unimproved sanitation facilities compared to only 7.6% of food secure households using unimproved sanitation facilities.

		Unimproved
	Unimproved	drinking water
	sanitation	sources
Food secure	7.6%	7.5%
Marginally food secure	9.5%	12.6%
Moderately food insecure	18.7%	18.7%

Table 29: Food security by availability of water and sanitation facilities

Role of Women in Household Food Security

The role of women in ensuring that their households get access to food is becoming increasingly significant in rural Nepal. This has also become necessary as more and more men from migrate leaving women behind with the responsibility to take care of their households.

79% of households in mid and far-western mountains had women involved in income generating activities for their households. A vast majority of households (88.7%) that had economically active women had their female members involved in agriculture activities such as rearing livestock and working in the fields.

Agriculture(self owned)	88.7%
Agriculture wage labour (unskilled)	11.6%
Other unskilled labour	9.1%
Skilled labour (masonry, carpentry etc)	2.8%
Remittance	1.4%
Salaried Employment	4.5%
Trade/Shop keeping	3.2%
Sale of NTFP	7.3%
Social benefit schemes	5.3%
Humanitarian/Development assistance participant	.1%

Table 30: Economic activities undertaken by women

As shown in table 31, 43.9% of households with economically inactive women were found to have inadequate food consumption compared to 31.9% households with economically active women which is an indication that participation of women in the economic activities help improve food security situation of their households.

	Inadequate consumption	Adequate consumption
HHs with economically active women	31.9%	68.1%
HHs without economically inactive women	43.9%	56.1%

Table 31: Women's economically activity and food consumption

A look into the differences between male and female headed households in terms of access to food shows that female headed households are slightly more likely to be food insecure than the male headed households as shown in tables 32 and 33. This indicates the vulnerability

associated with the female headed households in terms of access to food.

	food	marginally food	moderately food	severely food
	secure	secure	insecure	insecure
Male headed	37.6%	42.5%	19.3%	.6%
Female headed	33.0%	43.3%	23.0%	.8%

Table 32: food insecurity prevalence by heads of households

I		Inadequate food	Adequate food
		consumption	consumption
	Male headed	33.60%	66.40%
	Female headed	38.20%	61.80%

Table 33: Prevalence of food consumption by heads of households

As shown in table 28, education of head of household was positively associated with food security status. It was found that 78.8% of household heads in the female headed households had no education compared to 39.7% in the male headed households.

	illiterate	Primary	Secondary	Higher
Male headed	39.7%	20.2%	21.6%	18.4%
Female headed	78.8%	7.3%	6.2%	7.7%

Table 34: Education level by head of household

Female headed household, in general have less access to livelihood assets compared to male headed households. 61.6% of female headed households owned less than 0.2 hectares of land. Female headed household also owned less number of large as well as small ruminants.

	<0.2 ha	>0.2 ha	yak/cow	goat/sheep
Male headed	48.8%	51.2%	3.3	3.1
Female headed	61.6%	38.4%	2.6	2.6

Table 35: Ownership of assets by head of household

Shocks and Coping Strategies

Household Level Shocks

Shocks in the context of food security are defined as events that have negative impact on food security and nutrition status of households. This could range from damaging natural or human induced events to personal household catastrophes such as death of a working household member or business failures.

34% of surveyed households in the mid-western and far-western households reported that they faced shocks in the past 6 months preceding the survey. Fig 14 shows different types of shocks faced by the households during the recall period of 6 months based on which loss of crops and livestock was reported as the major shock faced by 49.6% of households that faced shocks.

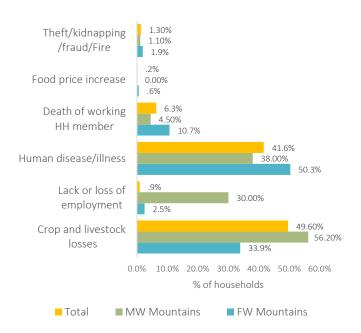


Fig 14: Types of shocks faced by households

	Not recovered	Partially recovered	Completely recovered
FW Mountains MW Mountains	19.7%	51.0%	29.3%
	35.1%	49.3%	15.6%
Total	30.6%	49.8%	19.6%

Table 36: recovery from shocks as % of households

Out of the households that faced shocks, 30.6% reported that they had not recovered from it. (table 36) This figure was higher for mid-western mountains(35.1%) compared to far-western mountains (19.7%)

Coping Strategies

Coping strategies are the range of behaviors households are engaged in the event of a food shortfall or in an anticipation of a food shortage.

During the past 30 days preceding the survey, 15.9% of households did not have enough food or money to buy food to feed their families. This was found to be more severe in mid-western mountains region where 23.9% households did not have enough to feed their families.

	Not enough	Enough
	food/money	food/money
Far-Western Mountains	9.0%	91.0%
Mid-Western Mountains	23.9%	76.1%
Total	15.9%	84.1%

Table 37: shortage of food or money to buy food

92.2% of households that faced food shortages borrowed money to buy food or bought food on credit. 19.2% adopted more severe coping strategy of harvesting immature crops.

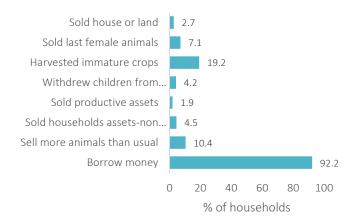


Fig 15: Coping strategies adopted by households

The strategies adopted by household to cope with the shortage of food were classified into stress, crisis and emergency coping strategies each one more severe than preceding one.

HH not adopting coping strategies	84.2%
Stress coping strategies	11.6%
Crisis coping strategies	2.7%
Emergency coping strategies	1.3%

Table 38: Types of coping strategies adopted by households

Impact of recurrent droughts in the Mid and Far-Western Mountains

Background

Several areas of mid and far-western mountains were hit by severe drought throughout 2015 and early 2016 resulting in substantial reduction in the production of 2015 summer crops as well 2016 winter crops in these areas. The NeKSAP food security bulletin issue 48¹ classified 77 VDCs in the mid and far-western mountains as highly food insecure with a loss of winter crops estimated to be as high as 50% in several districts. The detail report is available on the NeKSAP website (www.neksap.org.np).

In order to assess the current food security situation of the households living in these areas, the assessment interviewed 212 households that lived in the 14 VDCs affected by drought.

Livelihood Profile

73.9% of the households relied on agriculture as one of their major sources of income. This was followed by 39.3% households that were engaged in various unskilled wage labor activities such as working as porter, stone quarry worker etc.

Agriculture(self owned)	73.9%
Agriculture wage labor (unskilled)	5.7%
Other unskilled labor	39.3%
Skilled labor	9.0%
Remittance	14.7%
Salaried Employment	7.6%
Trade/Shop keeping	5.2%
Sale of NTFP	14.2%
Social benefit schemes	4.3%
Humanitarian/Development assistance	.5%

Table 39: Sources of household income

Table 40 shows that the households on average owned 0.22 hectares of land which is slightly lower than the overall average in the region. In addition, the average number of large ruminants and small ruminants owned were 3.1 and 3 respectively.

	mean
Land owned(ha)	0.2
Sheep goats(no.)	3.0
Yak cow buffaloes(no.)	3.1

Table 40: Ownership of land and livestock

32.5% of households in the drought affected areas had at least 1 migrant not present at the time of survey. 40.4% of households had migrants gone to India while 42.1% went to other district most likely to Kathmandu.

44.2% of the households had migrants engaged in low skilled jobs whereas 18.6% had not found the job yet or were between jobs.

A majority of households belonged to the lowest and second lowest wealth quintile (table 41) highlighting the economic vulnerability associated with the drought affected areas of the mid and far-western mountains.

Lowest	33.7%
Second	31.1%
Middle	17.1%
Fourth	9.8%
Highest	8.3%

Table 41: Household wealth quintile distribution

Food Security

As shown in table 36, the drought affected areas of mid and far-western mountains fare poorly on several indicators of household food access underlining the impact of recurring shocks like droughts to these areas.

The household level cereal stock in drought affected areas is lower compared to rest of the region and will last only for 2.6 months which is lower than the mean stock level of 4.2 in the overall mid and far-western mountains.

The mean food consumption score is 43.5 which is almost 10 points lower than the overall score of 52.1 and household dietary diversity score is also lower at 4.9.

¹ www.neksap.org.np

	Drought areas	All areas
Edible Food Stock (kg)	227.9	326.0
Calculated Food Sufficiency(Months)	2.6	4.2
Food Consumption Score	43.5	52.1
Dietary Diversity Score	4.9	5.5

Table 42: Food stock, consumption and dietary diversity

Based on the food consumption score, more than half of the households (54.8%) in the drought affected areas are classified as having inadequate food consumption and 40.1% of households have poor dietary diversity.

	drought	All
	areas	areas
Inadequate food		
consumption	54.8%	34.4%
Poor dietary diversity	40.1%	25%

Table 43: % of households with food consumption and dietary diversity

Based on CARI, WFP's tool for measuring the prevalence of household level food insecurity, 37.7% of households are food insecure which is 17% more than the overall food insecurity prevalence of mid and far-western mountains.

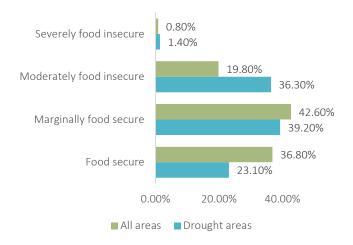


Fig 16: Food insecurity prevalence based on CARI

Shocks and Coping strategies

As shown on fig 17, the main shock faced by the households was the loss of crops and livestock followed by the illnesses to household members.

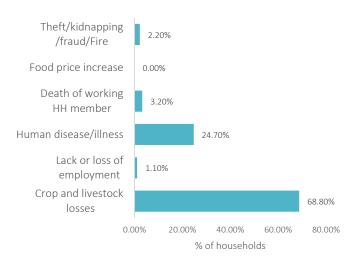


Fig 17: Types of shocks experienced by the households

88% of the households in the drought affected areas had not recovered from the shocks they experienced.

Not recovered at all	47.8%
Partially recovered	40.2%
Completely recovered	12.0%

Table 44: Recovery from shock

34.4% of households in the drought affected areas did not have enough food or money to buy food compared to 15.9% in the overall mid and far-western mountains.

	Drought areas	All areas
HH not adopting coping strategies	65.1%	84.0%
Stress coping strategies	29.7%	11.6%
Crisis coping strategies	1.4%	2.3%
Emergencies coping strategies	2.8%	2.0%

Table 45: Types of coping strategies adopted

29.7% of households in the drought affected areas have adopted stress level coping strategies compared to only 11.6% in the mid and far-western mountains.

In conclusion, the households in the drought affected areas have low cereal stock that is estimated to last them only for a couple of months, almost 55% are consuming an inadequate diet, 40% do not have acceptable level of dietary diversity as a result of which 37.7% have been classified as food insecure, a significantly higher estimate than the overall prevalence of food insecurity of mid and far-western mountain regions.

Annex One

Sampling errors for overall sample

Variable	Value	Standard	95% Confide	ence limits	Design
		Error SE	Lower	Upper	Effect
Size of the household	6.03	0.10	5.83	6.23	1.91
Proportion of female headed household	0.17	0.01	0.15	0.19	1.33
Proportion of Illiterate household heads	0.46	0.02	0.42	0.50	2.21
Proportion of households with improved sources of water	0.88	0.02	0.83	0.92	7.12
Proportion of households with improved sanitation	0.89	0.02	0.86	0.92	3.88
Proportion of households that openly defecate	0.09	0.01	0.07	0.13	3.94
Proportion of households using electricity for lighting	0.47	0.04	0.39	0.56	11.51
Proportion of households that owned land	0.97	0.01	0.95	0.98	2.37
Proportion of households that owned livestock	0.93	0.01	0.90	0.95	2.42
Mean amount of land owned (hectare)	0.25	0.01	0.23	0.27	3.54
Mean number of large ruminants(yak, cow, buffalo)	3.23	0.11	3.02	3.44	2.97
Mean number of small ruminants(sheep, goat)	3.07	0.33	2.43	3.72	2.85
Mean number of poultry	0.74	0.08	0.57	0.91	1.17
Proportion of households with at least 1 mobile phone	0.76	0.02	0.72	0.80	3.32
Proportion of households with at least 1 migrant member	0.43	0.02	0.39	0.47	2.67
Mean amount sent back in the last 12 months (NPR)	69053	6256	56593	81514	2.07
Mean food sufficiency period (months)	4.22	0.24	3.75	4.70	2.34
Proportion of households with less than 30 minutes to market	0.26	0.03	0.20	0.32	7.24
Proportion of food groups purchased from the markets	52.29	1.22	49.86	54.73	3.78
Proportion of food groups obtained from own production	45.55	1.23	43.11	47.99	3.82
Mean household food consumption score (FCS)	52.06	1.16	49.76	54.36	6.40
Proportion of households with inadequate food consumption	0.34	0.03	0.29	0.40	4.90
Household dietary diversity score (DDS)	5.52	0.08	5.36	5.68	4.93
Proportion of households with poor dietary diversity	0.25	0.02	0.21	0.29	3.20
Proportion of moderately food insecure households(CARI)	0.20	0.02	0.16	0.24	2.80
Share of food on the total expenditure (proportion)	0.59	0.01	0.58	0.60	2.90
Proportion of households that faced shocks	0.34	0.02	0.30	0.38	2.77
Proportion of households not recovered from shocks	0.31	0.03	0.25	0.37	2.54
Proportion of households with lack of food or money in last	0.16	0.02	0.12	0.21	5.23
30 days	0.16	0.02	0.12	0.21	5.23
Proportion of households not adopting coping strategies	0.84	0.02	0.79	0.88	5.25
Proportion of households adopting stress coping strategies	0.12	0.02	0.09	0.16	4.50

Sampling errors for far-western mountain region

Variable	Value	Standard	95% Confidence limits		Design
		Error SE	Lower	Upper	Effect
Size of the household	5.99	0.12	5.76	6.23	1.49
Proportion of female headed household	0.16	0.02	0.14	0.20	1.14
Proportion of Illiterate household heads	0.44	0.03	0.38	0.49	1.66
Proportion of households with improved sources of water	0.89	0.03	0.83	0.93	2.35
Proportion of households with improved sanitation	0.92	0.02	0.88	0.95	3.24
Proportion of households that openly defecate	0.06	0.02	0.04	0.10	3.30
Proportion of households using electricity for lighting	0.60	0.06	0.47	0.72	13.10
Proportion of households that owned land	0.96	0.01	0.93	0.97	2.33
Proportion of households that owned livestock	0.95	0.01	0.92	0.97	2.32
Mean amount of land owned (hectare)	0.24	0.02	0.21	0.28	2.49

Mean number of large ruminants(yak, cow, buffalo)	3.62	0.15	3.33	3.91	3.24
Mean number of small ruminants(sheep, goat)	2.61	0.31	1.99	3.23	1.80
Mean number of poultry	0.31	0.06	0.20	0.43	1.33
Proportion of households with at least 1 mobile phone	0.80	0.02	0.75	0.84	2.30
Proportion of households with at least 1 migrant member	0.55	0.03	0.49	0.61	2.93
Mean amount sent back in the last 12 months (NPR)	66515	7238	52098	80932	2.23
Mean food sufficiency period (months)	4.22	0.28	3.67	4.77	2.36
Proportion of households with less than 30 minutes to market	0.30	0.05	0.22	0.40	7.76
Proportion of food groups purchased from the markets	47.94	1.76	44.45	51.43	3.90
Proportion of food groups obtained from own production	49.47	1.70	46.10	52.84	3.78
Mean household food consumption score (FCS)	53.90	1.77	50.39	57.42	7.60
Proportion of households with inadequate food consumption	0.32	0.04	0.25	0.40	5.37
Household dietary diversity score (DDS)	5.55	0.11	5.32	5.78	4.99
Proportion of households with poor dietary diversity	0.23	0.03	0.18	0.29	3.48
Proportion of moderately food insecure households(CARI)	0.18	0.02	0.13	0.23	3.23
Share of food on the total expenditure (proportion)	0.61	0.01	0.59	0.62	3.22
Proportion of households that faced shocks	0.19	0.02	0.15	0.23	2.35
Proportion of households not recovered from shocks	0.20	0.05	0.12	0.32	2.50
Proportion of households with lack of food or money in last 30 days	0.09	0.02	0.06	0.14	4.30
Proportion of households not adopting coping strategies	0.91	0.02	0.86	0.95	4.40
Proportion of households adopting stress coping strategies	0.07	0.02	0.04	0.11	4.00

Sampling errors for mid-western mountain region

Variable	Value	Standard	95% Confidence limits		Design
		Error SE	Lower	Upper	Effect
Size of the household	6.08	0.17	5.75	6.41	2.36
Proportion of female headed household	0.17	0.02	0.14	0.21	1.17
Proportion of Illiterate household heads	0.49	0.02	0.45	0.54	1.27
Proportion of households with improved sources of water	0.87	0.04	0.77	0.93	2.94
Proportion of households with improved sanitation	0.85	0.03	0.79	0.90	3.24
Proportion of households that openly defecate	0.12	0.03	0.08	0.19	4.45
Proportion of households using electricity for lighting	0.32	0.06	0.22	0.45	11.20
Proportion of households that owned land	0.98	0.01	0.96	0.98	2.58
Proportion of households that owned livestock	0.91	0.02	0.87	0.94	2.49
Mean amount of land owned (hectare)	0.26	0.02	0.22	0.29	3.64
Mean number of large ruminants(yak, cow, buffalo)	2.77	0.15	2.47	3.07	2.89
Mean number of small ruminants(sheep, goat)	3.61	0.60	2.42	4.81	3.54
Mean number of poultry	1.24	0.17	0.91	1.57	1.14
Proportion of households with at least 1 mobile phone	0.72	0.04	0.64	0.78	4.30
Proportion of households with at least 1 migrant member	0.28	0.03	0.23	0.34	2.30
Mean amount sent back in the last 12 months (NPR)	77413	11661	54187	100639	1.48
Mean food sufficiency period (months)	4.23	0.41	3.42	5.04	2.33
Proportion of households with less than 30 minutes to market	0.20	0.04	0.14	0.30	6.67
Proportion of food groups purchased from the markets	57.37	1.65	54.09	60.64	3.70
Proportion of food groups obtained from own production	40.99	1.75	37.50	44.47	4.07
Mean household food consumption score (FCS)	49.91	1.45	47.04	52.79	5.11
Proportion of households with inadequate food consumption	0.38	0.04	0.30	0.46	4.57
Household dietary diversity score (DDS)	5.48	0.12	5.25	5.71	4.90
Proportion of households with poor dietary diversity	0.27	0.03	0.21	0.27	3.48
Proportion of moderately food insecure households(CARI)	0.23	0.03	0.17	0.29	3.65
Share of food on the total expenditure (proportion)	0.58	0.01	0.56	0.59	2.57
Proportion of households that faced shocks	0.52	0.04	0.45	0.59	3.68

Proportion of households not recovered from shocks	0.35	0.04	0.28	0.43	2.50
Proportion of households with lack of food or money in last 30 days	0.24	0.04	0.17	0.33	6.03
Proportion of households not adopting coping strategies	0.76	0.04	0.67	0.83	6.00
Proportion of households adopting stress coping strategies	0.17	0.03	0.12	0.25	4.90