



The State of Food Security and Nutrition in Myanmar 2022

Findings from four rounds of the Myanmar Household Welfare Survey

Key findings

- The state of food security and nutrition has deteriorated in Myanmar in 2022.
- Four percent of households were in moderate to severe hunger in October/December 2022. Hunger was highest in Chin (10 percent), Mon (6.8 percent), and Kayin (6 percent).
- Households with a low food consumption score increased from 9.4 percent in December 2021/February 2022 to 15.7 percent in October/December 2022. The shares in October/December were highest in Chin (48.3 percent), Kayin (23.1 percent), and Magway (22.7 percent).
- Inadequate diet diversity among adults rose from 20.6 percent to 25.1 percent over the same period with rates higher for women, especially in rural areas.
- Decreases in diet quality among adults is driven by lower consumption of milk and dairy products as well as Vitamin A rich fruits, meat, fish, and eggs.
- More than a third of all children aged 6-23 months and 15.9 percent of all children aged 24-59 months have inadequate diet quality.
- Regression analysis reveals low income and limited assets to be important risk factors for food security and adequate diet quality. Wage workers and low wage communities are found to be particularly vulnerable. Rising food prices, conflict and physical insecurity increase the likelihood of poor diet quality.
- Receiving remittances is a source of resilience; remittance-receiving households are less likely to experience hunger or poor dietary diversity at the household, adult, and child level.

Recommended actions

- Expanded implementation of nutrition-sensitive social protection programs, including maternal and child cash transfers, particularly to vulnerable groups is called for.
- Given the importance of remittances as an effective coping mechanism, supporting migration and the flow of remittances would help to improve the welfare of the Myanmar population.



1. Introduction

In this research note, we provide an overview of the state of food security and nutrition in Myanmar using household dataset collected in four quarters of 2022. We examine food security using the household hunger scale and the food consumption score. To examine the state of nutrition, we examine the diet quality of individuals across Myanmar for three separate but important sections of population: (1) adults (18+ years), (2) women of reproductive age (15-49 years), and (3) children (6-23 and 24-59 months).

We explore these indicators using four rounds of the Myanmar Household Welfare Survey (MHWS) collected over the phone from December 2021 to December 2022 – hereafter Q1, Q2, Q3, and Q4 – among over 12,000 households in 310 townships of Myanmar. Data collection was spread out over 2022 which helps us to understand the dynamic nature of food security and nutrition in Myanmar in a time marred by internal conflict and global price hikes as a result of the Ukraine war. MWHS is a nationally, urban/rural and state/region representative phone survey (MAPSA 2022a). We use standard food security and diet diversity measures for each of the three subpopulations to examine trends over the four rounds as well as explore heterogeneity with respect to gender, location of residence, and asset and income-based welfare indicators. We also look at disaggregated consumption of the different food groups that constitute the diet diversity measures to investigate the change in the consumption pattern of individuals. Finally, we use regression analysis to look at predictors of food insecurity and inadequate diet diversity, including household wealth and income, self-reported shocks, food prices, and household characteristics.

2. Findings from Food Security indicators

The first food insecurity indicator we examine is the household hunger scale (HHS), which measures the experience of hunger in the household based on three questions related to the lack of food at home, going to sleep hungry, and going an entire day without food (Ballard et al. 2011). Based on the frequency of occurrence, i.e. “did not occur”, “rarely” or “sometimes”, and “often”, answers are scored and are used to classify households into three groups: “little to no” (0-1), “moderate” (2-3), or “severe” (4-6) hunger. The second indicator is the WFP Food Consumption Score (FCS), which examines the frequency of consumption of different foods in the past week.

(a) Hunger Household Scale

Table 1 presents the prevalence of hunger at the national level for all four rounds of the survey. **Nearly 4 percent of households reported to be in moderate to severe hunger in Q4.** We do not find a statistically significant fall in prevalence over the year with the rate remaining stagnant at about 4 percent over the last three quarters. Nearly 9.5 percent of households had no food of any kind in the house on at least one day in Q4 which is lower than 11.6 percent reported in Q1. **However, the frequency of occurrence has increased significantly with 11.1 percent of households reporting to have experienced this more than 10 times in the four weeks preceding the survey.** In 4 percent of households, at least one member went to sleep hungry on one or more days, and in 1.7 percent of households one member or more went at least one whole day and night without food in Q3. **At the state level, the rate of hunger continues to be alarmingly high for Chin (10 percent), Mon (6.8 percent), and Rakhine (6 percent) going into**

Q4 (Table A.1). Over the year, the prevalence of hunger almost doubled in Bago from 2.8 percent in Q1 to 5.3 percent in Q4 and increased in Sagaing while it fell in Ayeyarwady and Nay Pyi Taw (see Appendix Table A.1). Such rates of hunger are likely consequences of high levels of conflict and instability in these regions.

Table 1. Composite categories of Household Hunger Score (HHS) and 7-day recall questions, percentage of households

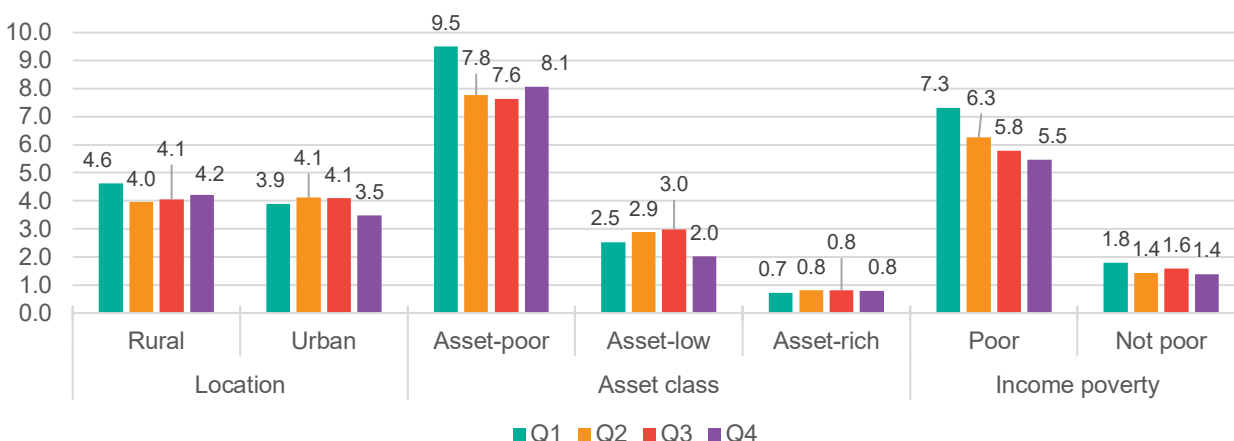
	Q1 (Dec 21- Feb 22)	Q2 (Apr 22- Jun 22)	Q3 (Jul 22- Aug 22)	Q4 (Oct 22- Dec 22)	Change: Q4 – Q1
	Percentages (%)				% points
HHS classifications					
Little to no hunger	95.6	96.0	95.9	96.0	0.4
Moderate hunger	4.2	3.7	3.6	3.7	-0.5*
Severe hunger	0.2	0.3	0.4	0.3	0.1
Moderate to severe hunger	4.4	4.0	4.1	4.0	-0.4
There was no food of any kind the house	11.6	9.7	10.0	9.4	-2.1***
Rarely (1-2 times) ^a	48.4	39.1	38.1	39.4	-9.0***
Sometimes (3-10 times) ^a	48.0	50.0	48.7	49.5	1.5
Often (more than 10 times) ^a	3.6	10.9	13.2	11.1	7.5***
A household member went to sleep hungry	4.9	3.8	3.7	4.0	-1.0**
Rarely (1-2 times) ^a	46.8	38.8	41.8	45.7	-1.1
Sometimes (3-10 times) ^a	50.0	55.1	47.2	49.8	-0.2
Often (more than 10 times) ^a	3.2	6.1	11.1	4.5	1.3
Household member went full day & night without food	2.1	1.6	1.6	1.7	-0.5**
Rarely (1-2 times) ^a	44.9	53.2	50.5	51.2	6.2
Sometimes (3-10 times) ^a	50.0	40.7	43.9	44.4	-5.6
Often (more than 10 times) ^a	5.1	6.1	5.6	4.5	-0.6
No of observations	12100	12142	12128	12924	

Note: a. The frequency of occurrence questions is for the subsample of households that answered “yes” to the three hunger related questions. Asterisks refer to the level of statistical significance in the difference in means between Quarter 4 and Quarter 1: * p < 0.10, ** p < 0.05, *** p < 0.01.

Next, we explore possible differences in household hunger with respect to location, asset class and poverty status. We generate three different categories of asset level using a count of 10 items, where a household is classified as asset-poor if it owns between 0 to 3 items, asset-low if it owns between 4 to 6 items and asset-rich if it owns 7 or more items. Income poverty status of poor or not poor is calculated from the self-reported income level relative to national poverty lines from 2017 updated for inflation trends.

We find that poor households are particularly vulnerable to hunger. 8.1 percent of asset-poor households experienced moderate to severe hunger in Q4, although it has fallen from 9.5 percent in Q1, while 5.5 percent of income poor households remain hungry in Q4 falling from 7.3 percent in Q1 (Figure 1). There is no significant difference with respect to urban/rural location.

Figure 1. Proportion of households in moderate to severe hunger by location, asset, and poverty status



(b) Food Consumption Score

The second indicator we look at is the household Food Consumption Score (FCS). The FCS is a measure of dietary diversity and food frequency, considering the nutritional importance of the food consumed. It is calculated as the weighted sum of the frequency of food groups eaten over the seven days prior to survey where weights reflect the relative nutritional value of the food group (Arimond et al., 2010). A higher FCS is considered to be associated with a higher probability that a households' food intake is adequate. Based on the score, households are classified into three groups: poor (0-24.5), borderline (24.6-38.5), or acceptable food consumption status (>38.5). We follow the threshold values as typically agreed upon for Myanmar (Robertson et al. 2018). For some analysis, we further aggregate poor and borderline food consumption (i.e. FCS≤38.5) to generate a dichotomous indicator of low FCS.

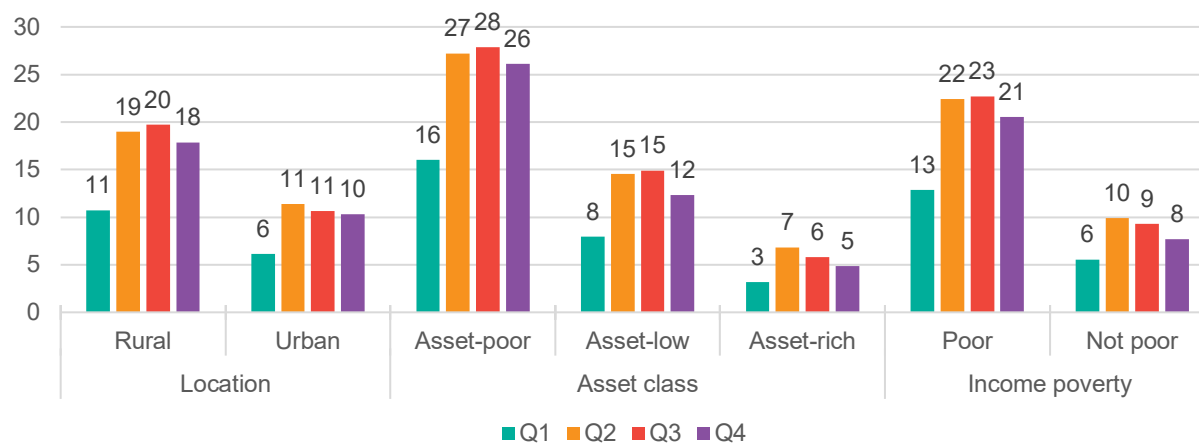
Table 2 shows the frequency of food groups consumed over the past seven days as well as the aggregate measure of FCS. **At the national level, the percentage of households with inadequate food consumption increased from Q1 to Q4 of our survey.** 14.8 percent of households have borderline food consumption, while 0.9 percent of households have poor food consumption in Q4 which is a significant increase from Q1 when 8.9 percent and 0.5 percent of households had borderline and poor food consumption, respectively. **This was mainly driven by a decline in the consumption of milk and dairy products as well as meat, fish, and eggs** which are weighted the highest in the calculation of the FCS because of their nutritional value. Consumption of milk and dairy products is low and has fallen even lower over the survey period from 1.2 days in Q1 to 0.7 days in Q4. Similarly, consumption of meat, fish, and eggs has also fallen from 5 days in Q1 to 4.3 days in Q4. There is significant urban/rural disparity with consumption of milk and dairy products, with consumption much higher in urban areas compared to rural areas (1.2 and 0.5 days, respectively, in Q4). The same is seen in meat, fish, and eggs with urban areas consuming these foods 4.8 days compared to 4.1 days in rural areas in Q4. However, the frequency of consumption of vegetables and fruits has gone up on average in Q4.

Table 2. Frequency of food groups consumed, and Food Consumption Score (FCS) based on 7-day recall, household level

	Q1 (Dec 21- Feb 22)	Q2 (Apr 22- Jun 22)	Q3 (Jul 22- Aug 22)	Q4 (Oct 22- Dec 22)	Change: Q4 – Q1	Change: Q4 – Q3
<i>Number of days consumed in past 7 days</i>				<i>change</i>		
Main staples	7.0	7.0	7.0	7.0	0.0***	0.0*
Pulses/legumes/nuts	3.1	2.5	2.5	2.5	-0.6***	0.0
Milk and other dairy products	1.2	0.9	0.8	0.7	-0.6***	-0.1***
Meat, fish, and eggs	5.0	3.9	4.0	4.3	-0.7***	0.3***
Vegetables	5.2	5.5	5.6	5.5	0.3***	-0.1***
Fruits	2.5	3.5	2.9	2.4	-0.1**	-0.5***
Oil, fats, and butter	6.6	6.7	6.7	6.7	0.1***	0.0
Sugar or sweet	3.3	2.1	2.2	2.1	-1.2***	-0.1**
Food Consumption Score (0-112)	60.9	53.9	53.6	53.8	-7.1***	0.1
<i>Percentages (%)</i>				<i>% points</i>		
Acceptable food consumption	90.6	83.2	82.8	84.3	-6.3***	1.5**
Borderline food consumption	8.9	15.7	16.1	14.8	5.9***	-1.3**
Poor food consumption	0.5	1.2	1.1	0.9	0.4***	-0.1
No. of observations	12100	12142	12128	12924		

Note: Statistics for food groups are number of days household have consumed in 7 days prior to survey. Food Consumption Score is the average score in the population (out of 112). Acceptable, borderline, and poor food consumption is based on cutoff as described in text; statistics presented are percentage of households in each category of food consumption. Asterisks refer to the level of statistical significance in the difference in means between Quarters: * p < 0.10, ** p < 0.05, *** p < 0.01.

Figure 2. Proportion of households with low food consumption score (FCS≤38.5)



With respect to location, asset class, and poverty status, **households in rural areas and those in asset and income poverty are much more likely to have low food consumption scores, with an increase from Q1 to Q4 (Figure 2).** 18 percent of households in rural areas had a low FCS compared to 10.3 percent in urban areas in Q4 with the rate of increase from Q1 also higher for rural compared to urban areas (7.2 vs 4.2 percentage points). 26.1 percent of asset-poor and 12.3 percent of asset-low households have low FCS in Q4 – a statistically significant increase of 10.1 and 4.4 percentage points from Q1. The prevalence of low FCS among income-poor households also saw a large increase from 12.8 percent in Q1 to 20.5 percent in Q4.

There were large differences in the FCS across states/regions (see Appendix Table 2/Figure 3). **The prevalence of low FCS is highest in Chin (48.3 percent), Kayin (23.1 percent), and**

Magway (22.7 percent) in Q4. On the other hand, there was a large increase in the prevalence of low FCS in Kayin (15.5 percentage points), Mon (11.4 percentage points), and Tanintharyi (8.8 percentage points) between Q4 and Q1.

3. Findings from Nutrition indicators

In this section, we present results from two indicators of diet diversity to measure diet quality amongst adults (18+ years), women of reproductive age (15-49 years) and children (6-23 and 6-59 months). The minimum diet diversity (MDD) measure for adults is calculated as whether an adult has consumed at least 5 of 10 food groups (grains/root/ tubers, pulses (beans, peas and lentils), nuts/seeds, dairy, meat/poultry/fish, eggs, dark green leafy vegetables, other vitamin A-rich fruits and vegetables, other vegetables, and other fruits) in the 24 hours prior to the survey (FAO and FHI, 2016). We also explore diet diversity in reproductive age women since diet quality of women has significant impact on her children's birthweight and their probability of being stunted or wasted. The MDD for children, aged 6-23 and 6-59 months, is calculated as whether a child was offered at least 4 of 7 food groups (grains/root/tubers, legumes/nuts, dairy products, eggs, flesh food, vitamin-A rich vegetables/fruits, and other vegetables/fruits) in the 24 hours prior to the survey (WHO, 2007). The population level indicator is then calculated as the proportion of children with low diet diversity amongst all children in the age group.

(a) Minimum diet diversity of adults (18+ years)

Table 3 shows the proportion of adults not consuming a minimum dietary diversity (5 out of 10 food groups) for each quarter. There is a large and statistically significant increase in the prevalence of low diet diversity amongst adults from 20.6 percent in Q1 to 25.1 percent in Q4. Adults in rural areas have a higher prevalence of inadequate diet diversity compared to urban areas (26.4 percent vs 21.9 percent in Q4) along with a larger rate of increase between Q1 and Q4 (5.1 percentage points vs 3 percentage points). Women are the hardest hit, especially in rural areas where almost 27 percent of women are not consuming a diverse diet. This is worrying because poor diet quality can put mothers at risk as well as adversely affect the health and long-term cognitive ability of their children.

We find that irrespective of asset level or poverty status, the proportion of adults with low diet diversity has gone up from Q1 to Q4 (Table 3). For example, the prevalence of low diet diversity amongst adults belonging to asset-rich households has gone up from 12.6 percent in Q1 to 16.2 percent in Q4, a statistically significant increase of about 3.6 percentage points while it increased about 5 percentage points for asset-poor households.

Figure 3. Proportion of households with low food consumption score and adult diet diversity by state/region

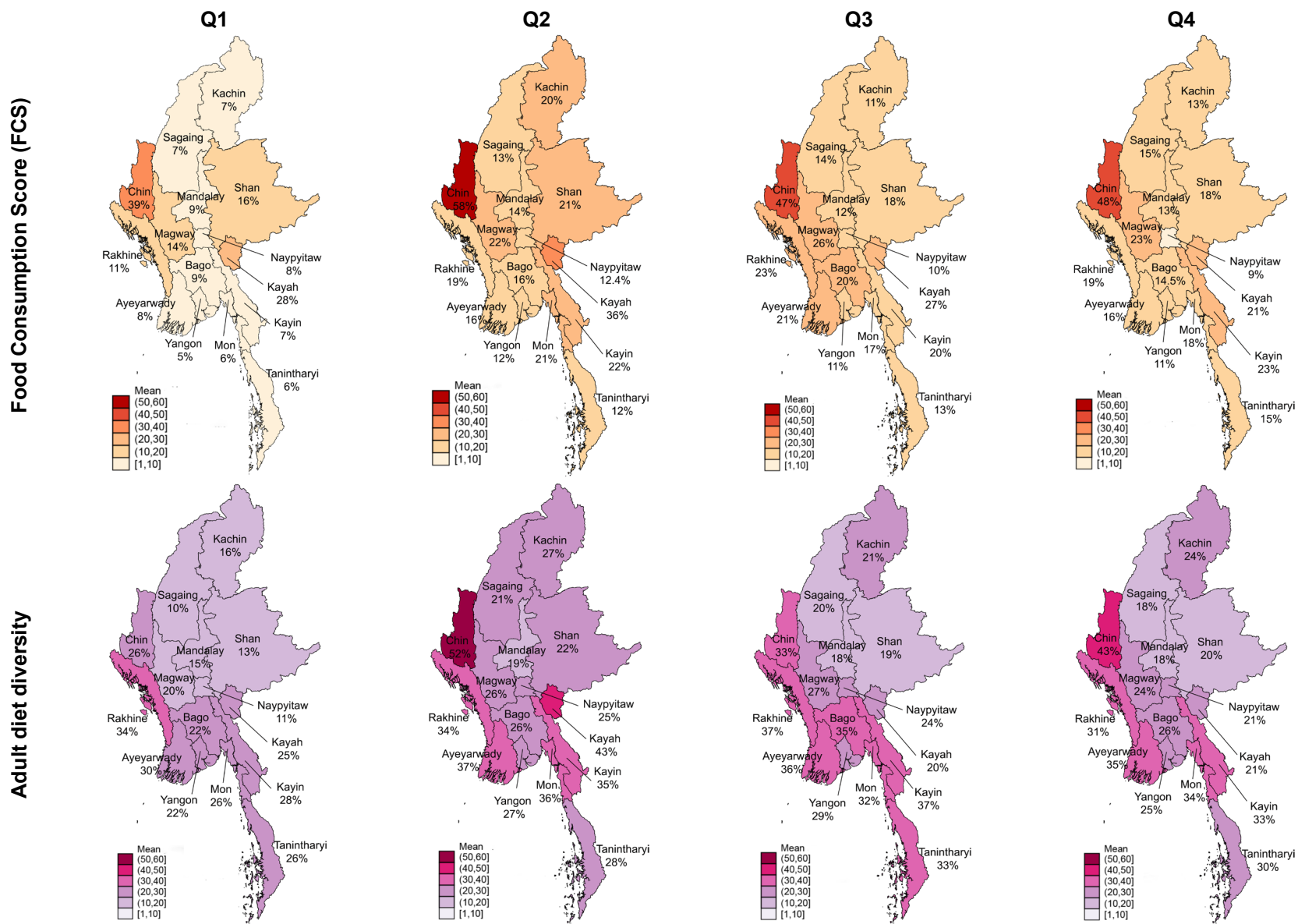


Table 3. Percentage of adults with inadequate diet diversity

		Q1 (Dec 21- Feb 22)	Q2 (Apr 22- Jun 22)	Q3 (Jul 22- Aug 22)	Q4 (Oct 22- Dec 22)	Change: Q4 – Q1	Change: Q4 – Q3
<i>Means (%)</i>							<i>% points</i>
	Overall	20.6	27.1	27.6	25.1	4.5***	-2.5***
National	Male	21.0	25.3	26.7	24.6	3.6***	-2.1**
	Female	20.2	28.6	28.3	25.5	5.3***	-2.8***
	Overall	21.2	28.3	28.8	26.4	5.1***	-2.4***
Rural	Male	21.3	25.9	28.0	26.0	4.7***	-1.9
	Female	21.2	30.3	29.5	26.7	5.5***	-2.8**
	Overall	18.9	24.1	24.5	21.9	3.0**	-2.7**
Urban	Male	20.2	23.8	23.6	21.3	1.1	-2.3
	Female	17.7	24.4	25.4	22.4	4.7**	-3.0*
	Asset-poor (0-3 asset)	30.5	39.7	37.1	35.4	4.9***	-1.8
National	Asset-low (4-6 assets)	18.4	24.3	25.3	21.6	3.2***	-3.7***
	Asset-rich (7-10 asset)	12.6	16.9	19.5	16.2	3.6***	-3.3**
National	Income poor	23.7	32.5	31.0	28.8	5.1***	-2.2**
	Income not poor	16.6	19.9	22.1	18.2	1.6*	-3.9***
No. of observations		12,100	12,142	12,128			

Note: Asterisks refer to the level of statistical significance in the difference in means across Quarters: * p < 0.10, ** p < 0.05, *** p < 0.01.

Table 4. Percentage of adults consuming different food groups in the past 24 hours

	Q1 (Dec 21- Feb 22)	Q2 (Apr 22- Jun 22)	Q3 (Jul 22- Aug 22)	Q4 (Oct 22- Dec 22)	Change: Q4 – Q1	Change: Q4 – Q3
<i>Means (%)</i>						
Cereals/grains/roots/tubers	99.3	98.9	99.6	99.6	0.3**	0.0
Beans	53.7	52.7	52.7	49.8	-3.9***	-2.9***
Nuts or seeds	43.9	37.9	36.1	38.0	-5.9***	1.9**
Milk and dairy products	16.4	16.6	13.7	12.9	-3.5***	-0.8
Egg	52.7	47.1	48.4	47.4	-5.3***	-1.0
Meat and Fish	88.9	80.7	81.8	84.9	-4.0***	3.1***
Other fruits	40.7	52.0	50.2	50.6	9.9***	0.5
Vitamin A rich fruits/vegetables	49.3	25.9	27.0	31.0	-18.3***	4.0***
Dark green vegetables	84.3	84.1	80.8	84.5	0.2	3.7***
Other vegetables	82.0	72.6	77.3	78.1	-3.9***	0.7

Note: Asterisks refer to the level of statistical significance in the difference in means across Quarters: * p < 0.10, ** p < 0.05, *** p < 0.01.

In Table 4, we look at the proportion of adults consuming 10 different food groups for each round of our survey to explore which food groups are driving the decrease in diet quality. **We find that consumption of nearly all food groups fell for adults from Q1 to Q4, with a large decrease in the consumption of Vitamin-A rich fruits and vegetables, meat and fish, and eggs.** Large declines in nutrient-dense foods are a potential risk factor for elevated malnutrition and declining health in the population. **Compared to men, decreases in the consumption of Vitamin-A rich fruits and vegetables, meat and fish, and eggs are higher for women** (see Appendix Table A.3 and A.4). The percentage of women consuming milk/dairy products and Vitamin-A rich fruits and vegetables in Q4 is statistically significantly lower than men.

Appendix Table 5 explores the spatial trend in the prevalence of low diet diversity amongst adults. **Chin (16.7 percentage points), Nay Pyi Taw (9.7 pp), and Sagaing (7.9 pp) saw the biggest increase in the prevalence of low adult diet diversity from Q1 to Q4 while the highest rates are found in Chin, Kayin, Ayeyarwady, and Mon where more than a third of all adults have inadequate diet quality in Q4** (see Figure 3). These are also states most affected by conflicts, restrictions on mobility due to curfews and checkpoints, and increasing transport costs as well as increasing feelings of insecurity and reports of crime (MAPSA 2022b; MAPSA 2022c).

(b) Minimum diet diversity of women of reproductive age (14-59 years)

We find similar trends for women of reproductive age (14-59 years) to that of adults. 26 percent of reproductive age women in Q4 did not consume minimum diet diversity (5 out of 10 food groups), a statistically significant increase of 4.4 percentage points from Q1 (Appendix Table A.6). The prevalence of low diet diversity is higher in rural areas (27 percent) than urban areas (23.1 percent) in Q4. More than a third of all women in asset poor (35 percent) and income poor (30 percent) categories have inadequate diet quality with a statistically significant increase in asset-rich (4.9 percentage points), asset-poor (4.9 percentage points) and income poor (5.2 percentage points) categories as well (see Appendix Tables A.6).

Looking at individual food groups (see Appendix Table A.7), **we find a decrease in consumption of nearly all food groups for reproductive age women from Q1 to Q4**, particularly nutrient dense food groups such as Vitamin-A rich fruits and vegetables, milk/dairy products, meat and fish, and eggs which is worrying given the potential threat of intergenerational transmission of inadequate nutrition by this special demographic group. Spatially, states with conflict such as **Sagaing, Chin, and Magway saw an increase in the prevalence of low diet diversity of reproductive age women with the highest rates prevailing in Kayin, Chin, and Ayeyarwady in Q4** (see Appendix Table A.8).

(c) Minimum diet diversity of children, 6-23 and 24-59 months

In our survey, for households with children under the age of 5 years, the primary caregiver is asked questions regarding the food intake of the youngest child. In Q1, we asked only for children less than 2 years old, while in the rest of the rounds, namely, Q2, Q3, and Q4, we expanded our sample to include any children below age 5. Table 5 presents the estimates for the proportion of children, 6-23 and 24-59 months, not consuming minimum diet diversity i.e. not consuming 4 out of 7 food groups (FANTA, 2006).

We find that more than a third of all children (34.4 percent) aged 6-23 months have inadequate diet quality in Q4, although there has been a statistically significant decline of 6.3 percentage points from 40.7 percent in Q1. Much of this decline can be contributed to that of boys – gender disaggregated estimates reveal that boys had a statistically significant decline of 7.7 percentage point in the rate of inadequate diets compared to 4.7 percentage points reduction (not statistically significant) for girls (Table 5). With respect to children 24-59 months of age, we do not see a change in the rate of inadequate diet diversity between Q2 and Q4 with **15.9 percent of children aged 24-59 months with inadequate diet quality in Q4**.

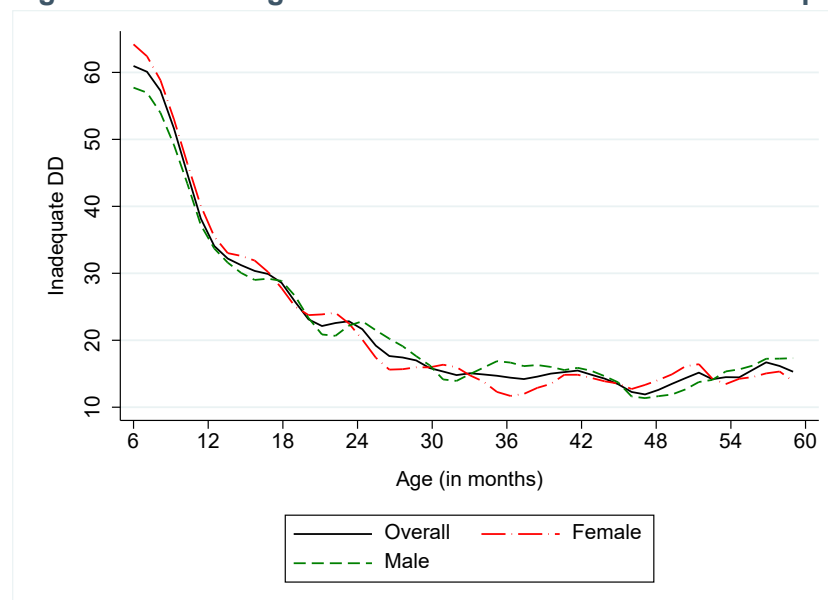
Table 5. Percentage of children with inadequate diet diversity

	6-23 months					24-59 months				
	Q1 (Dec 21-Feb 22)	Q2 (Apr 22-Jun 22)	Q3 (Jul 22- Aug 22)	Q4 (Oct 22- Dec 22)	Change: Q4 – Q1	Q1 (Dec 21-Feb 22)	Q2 (Apr 22- Jun 22)	Q3 (Jul 22- Aug 22)	Q4 (Oct 22-Dec 22)	Change: Q4 – Q2
	<i>Means (%)</i>	<i>% points</i>				<i>Means (%)</i>	<i>% points</i>			
Overall	40.7	40.0	37.1	34.4	-6.3**	-	16.7	15.8	15.9	-0.7
Boys	39.9	37.4	36.9	32.2	-7.7**	-	16.3	14.7	17.1	0.8
Girls	41.5	42.6	37.3	36.8	-4.7	-	17.1	16.9	14.7	-2.4**
No of obs.	684	601	739	712		-	1491	1651	1686	

Note: Asterisks refer to the level of statistical significance in the difference in age adjusted trend from Quarter 4 and Quarter 1: * p < 0.10, ** p < 0.05, *** p < 0.01.

We further explore the prevalence of inadequate diets of children for each age month between 6 to 59 months to explore the trend in food consumption over these critical months. A child should be introduced to a diverse diet of pulses, fruits, vegetables, meat, fish and eggs, as complementary feeding in addition to breastmilk for adequate cognitive and physical development, after completion of a period of exclusive breastfeeding up until the age of 6 months. Figure 4 reveals that parents are slow to introduce complementary foods from 6 months of age with very high prevalence of inadequate diet (measured as not consuming 4 out of 7 food groups) amongst 6 to 18 month old children. The trend flattens for older children aged 36 months and above at around 16 percent. There does not seem to be a big gender bias, with girls lagging slightly behind boys.

Figure 4. Percentage of children 6-59 months with inadequate diet diversity, by gender



Next, we look at individual food groups to examine what is driving changes and **find big increases in the consumption of Vitamin A rich fruits and vegetables as well as meat and fish** for children aged 6-23 months over Q1 to Q4 (see Table 6). A similar trend is seen amongst children 24-59 months with a significant increase in the consumption of meat and fish, and eggs between Q2 and Q4. For boys aged 6-23 months, the increase was due to higher consumption of Vitamin A rich fruits and vegetables, while for boys aged 24-29 months increased consumption of meat and fish were most important (Appendix Table A.9). On the other hand, for girls, the increase was due to consumption of Vitamin A rich fruits and vegetables, and meat and fish for 6-23 month olds, and eggs for 24-59 month olds (Appendix Table A.10). **There was a large reduction in the consumption of milk and dairy products for both genders and age groups, possibly as a consequence of increasing prices in the market.**

Table 6. Percentage of children consuming different food groups in the past 24 hours

	6-23 months					24-59 months				
	Q1 (Dec 21- Feb 22)	Q2 (Apr - Jun 22)	Q3 (Jul - Aug 22)	Q4 (Oct - Dec 22)	Diff: Q4 – Q1	Q1 (Dec 21- Feb 22)	Q2 (Apr - Jun 22)	Q3 (Jul - Aug 22)	Q4 (Oct - Dec 22)	Diff: Q4 – Q2
	Means (%)				% points		Means (%)			
Grains	95.0	95.8	98.3	98.9	3.9***	-	99.0	99.7	99.7	0.7**
Legumes & Nuts	45.1	44.7	49.7	48.0	2.9	-	64.3	64.0	62.4	-2.0
Milk and dairy products	39.6	38.7	34.0	35.4	-4.2	-	33.6	25.0	26.8	-6.8***
Meat & Fish	54.5	57.1	60.7	61.2	6.7**	-	77.8	78.9	81.9	4.1**
Egg	50.2	46.5	46.1	48.5	-1.7	-	54.8	58.3	58.1	3.3*
Vit-A rich fruits & vegetables	42.1	54.6	53.2	57.1	15.0***	-	72.5	73.5	70.5	-2.0
Other fruits & vegetables	68.4	59.3	62.0	68.1	-0.2	-	80.3	82.4	81.1	0.8

Note: Asterisks refer to the level of statistical significance in the difference in means across Quarter 3 and Quarter 1: * p < 0.10, ** p < 0.05, *** p < 0.01.

Overall, we see a fall in consumption of meat, fish, egg, milk products, and Vitamin A rich fruits and vegetables. This is also evident by households reporting a reduction in expenditure on these items. In our survey, we asked respondents to report whether they reduced food expenditure, and on which items they have reduced it. **Half of our respondents in Q4 has reported to have reduced expenditure on food in the preceding 30 days of the survey day with around 50 percent of households reported reducing expenditure on dairy and eggs, 88 percent on meat and fish, and about 30 percent on fruits and vegetables** (see Appendix Table A.11). These may be a consequence of falling income and rising prices in the face of multiple shocks that have affected the country. 45 percent of our respondents have reported that they have faced a significant decrease in income in the preceding 3 months of the survey date.

(d) Vaccinations

In Quarter 4 of the MHWS, we included questions in the survey round regarding vaccination of the youngest child aged 6-59 months in the household. Results are presented in Table 7. **We find that rates of vaccination are reasonably high among children in Myanmar. Overall, 96.3 percent of children received some form of vaccination.** Rates of BCG (tuberculosis) and polio

vaccinations are high around 94 percent while rates of hepatitis B and measles, mumps, and rubella (MMR) vaccinations are found to be around 85 percent. There is little difference in vaccination rates for boys and girls. However, we do find some differences in rates in the urban areas compared to rural areas, especially for vaccination against hepatitis B. No differences were found, however, for vaccination rates of polio, BCG, and MMR vaccination.

Table 7. Rates of vaccination against various diseases for children aged 6 – 59 months

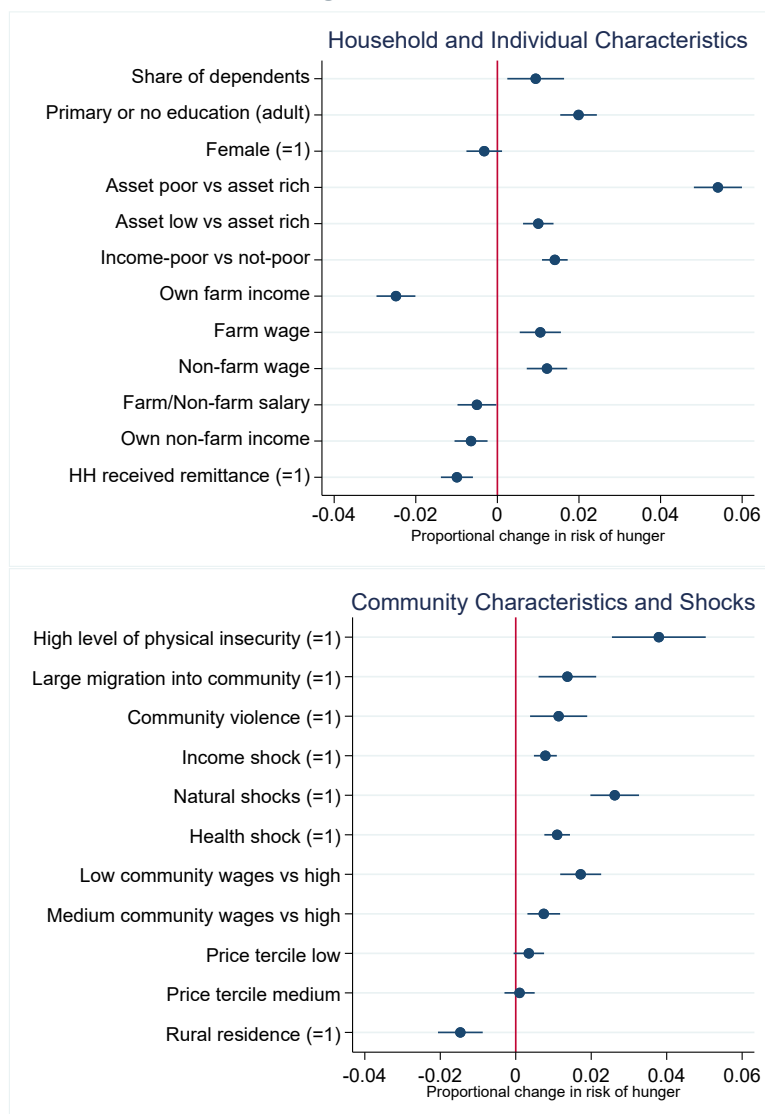
	6 – 59 months						
	Overall	Boy	Girl	Diff: Boy – Girl	Urban	Rural	Diff: Urban – Rural
	<i>Means (%)</i>			<i>% points</i>	<i>Means (%)</i>		<i>% points</i>
Have vaccination card	91.9	91.6	92.2	-0.6	95.1	90.8	4.3***
Received vaccination ...							
Any vaccination	96.3	96.2	96.3	-0.1	96.9	96.1	0.8*
Hep B after birth	82.0	82.2	81.8	0.4	88.6	79.8	8.9***
Hep B 2nd dose	85.9	85.4	86.4	-1.0	87.5	85.3	2.2**
BCG	93.9	93.5	94.3	-0.8	93.5	94.1	-0.6
Polio	93.0	92.8	93.1	-0.2	93.9	92.7	1.2
Measles MMR/MR	87.1	86.6	87.6	-1.0	87.6	86.9	0.7

Note: Total number of children 6 – 59 months in Quarter 4 of the MHWS is 2398. Asterisks refer to the level of statistical significance in the difference in means: * p < 0.10, ** p < 0.05, *** p < 0.01.

4. Regression analysis

To explore possible risk factors of food security and nutrition, we conduct a panel random effects linear probability model exploring how welfare measures, self-reported shocks, prices, and household characteristics affect the probability of households being in moderate to severe hunger, and of having low food consumption scores as well as the likelihood of low diet diversity score for adults and children aged 6-59 months. We also control for principal household income source and other household and respondent characteristics as well as include survey month and state fixed effects in the model. The estimates of the proportional change in risk of hunger and inadequate diet diversity of different associates are presented in Figures 5 and 6 respectively.

Figure 5. Linear probability model regressions of household and community level predictions of the proportional change in the risk of moderate to severe hunger



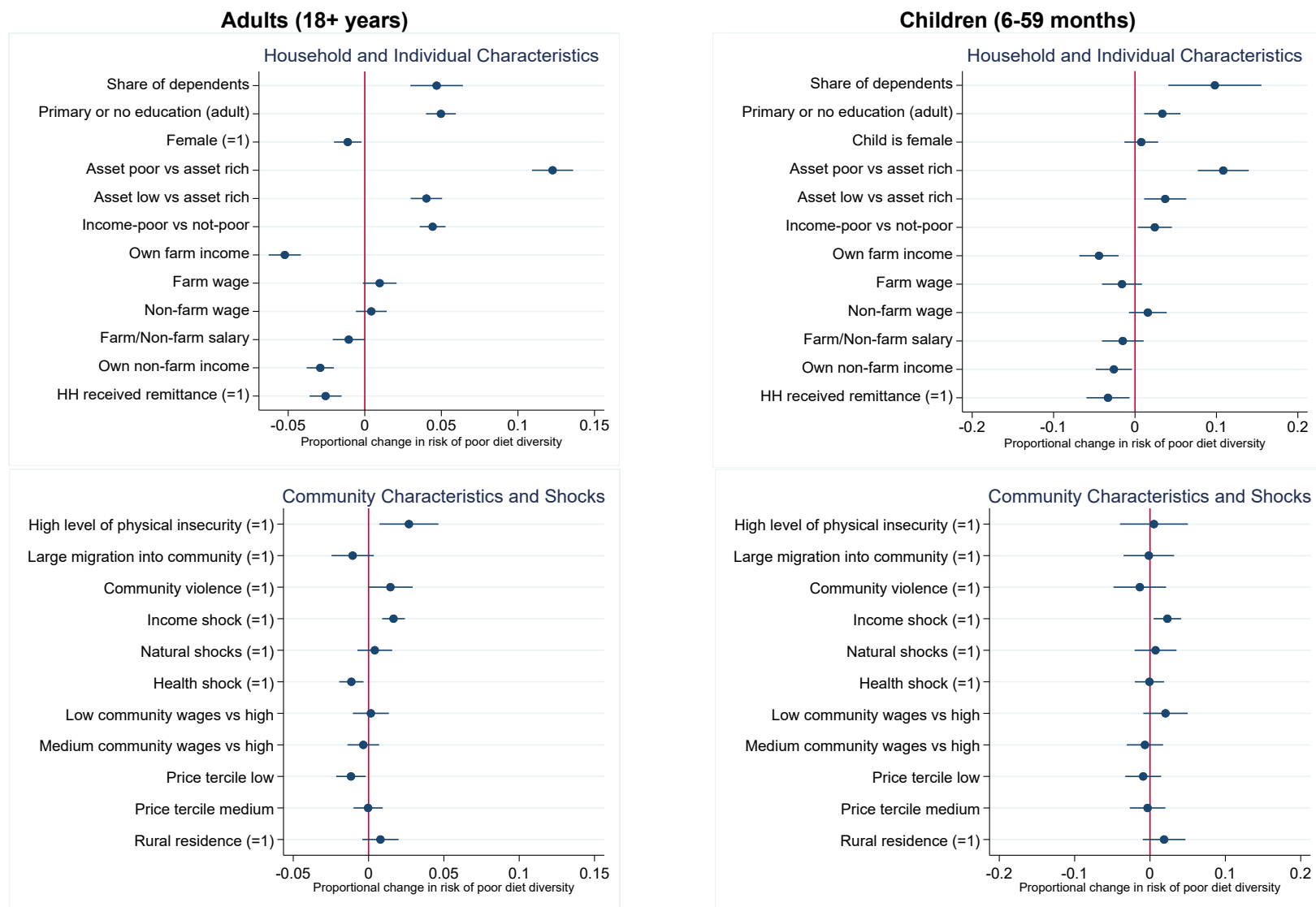
Note: Additional controls not presented in the figures are age, women-only household, household size, recall day is a special day, survey months and state fixed effects.

Findings from the regression analysis are summarized below:

- **Low income and limited assets are a significant risk for food insecurity and inadequate diet diversity.** Income poor households are more likely to be in moderate to severe hunger as well as have low food consumption. Such households are also likely to have adults, reproductive age women and children aged 6-59 months with poor diet quality. On the other hand, households that are asset-poor and asset-low have a higher probability of being in hunger and having low FCS compared to asset-rich households. Asset-poor households are also likely to have inadequate diet diversity for adults and reproductive aged women as well as young children.

- **Farm households are found to be protected against food insecurity and inadequate diet quality.** Households whose primary source of income is their own farm income are less likely to be in hunger and have low household food consumption. Such households are also likely to have adults, reproductive age women and children aged 6-59 months with poor diet quality. On the other hand, **wage worker households are particularly vulnerable to hunger and low diet diversity.** Non-farm business activities also decrease the likelihood of hunger and low diet quality for adults and children.
- **Households in low-wage communities are more likely to be hungry and have a low FCS.**
- **Remittance-receiving households have a lower likelihood of being hungry or having adults or children with inadequately diverse diets.** Remittances seem to offer substantial resilience in this sense.
- **Self-reported income shocks increase the likelihood of being hungry and having inadequate diet diversity** both at the household and individual levels. Compared to the other kind of shocks considered in the regression framework, only income shock is found to have a statistically significant association for young children. This indicates that even though households are able to compensate for children's diet in the face of other shocks, such as natural, health or conflict, households are particularly vulnerable and fail to mitigate consumption in the face of income shocks.
- **High levels of physical insecurity are a significant risk factor for food insecurity and diet quality.** Households reporting high levels of physical insecurity are more likely to be hungry and more likely to have inadequate diet diversity at the household and individual levels such as for adults and reproductive age women. Community violence is also a significant factor for food insecurity and inadequate diet diversity. No significant association is found for young children.
- **Adults in communities with higher food prices are more likely to have poor dietary diversity.**
- **Significant differences emerged in household food consumption and individual diet quality by survey month possibly driven by an increase in conflict and seasonality of agriculture.** Compared to December 2021, being surveyed in June, July, and August decreases consumption and diet quality.
- **A low education level of adult members is also a significant risk factor for food insecurity and poor diet quality.** A higher share of dependents also increases the likelihood of hunger and poor diet quality at the household and individual level.

Figure 6. Linear probability model regressions of household and community level predictions of the proportional change in the risk of inadequate diet diversity



Note: Additional controls not presented in the figures are age, women-only household, household size, recall day is a special day, survey months and state fixed effects.

5. Concluding remarks

The combined predicaments of economic and political crises in Myanmar have adversely affected food security and nutrition. Using four rounds of the Myanmar Household Welfare Survey (MHWS) collected in December 2021-February 2022, April-June 2022, July-August 2022, and October-December 2022, we are able to document trends in food insecurity and inadequate diet diversity for different regions, socioeconomic groups and demographics groups over the course of the year. Our four key findings are as follows.

First, although prevalence of extreme hunger is relatively low, on average, it is far more prevalent in poorer and more conflict affected regions like Sagaing, Chin, and Mon in the latest round of the survey.

Second, among households and adults specifically, there are strong indications of deteriorating dietary quality over the year 2022, either in terms of reduced frequency of consumption of nutrient-dense foods such as Vitamin-A rich fruits and vegetables, meat and fish, and eggs, or in adequate dietary diversity in the past 24 hours. We find the largest increase in the prevalence of inadequate diet quality in Sagaing, Nay Pyi Taw, and Chin over the survey period while the highest rates are found in Mon, Kayin, Ayeyarwady, and Chin in the latest round of survey. However, among adults, poor dietary diversity has increased over the year across a whole range of socioeconomic strata and geographical areas.

Third, more than a third of all children aged 6-23 months and 15.8 percent of children aged 6-59 months have an inadequate diet quality in the latest survey, although there has been a statistically significant decline of 6.3 percentage points from Q1 for children aged 6-23 months.

Fourth, regression analysis reveals low income and asset ownership to be important risk factors for food security and diet quality, along with conflict, physical insecurity, and internal migration in the past year. Falling income is found to be a significant shock for hunger and diets and is the only shock that significantly affects young children's diets. Even controlling for various forms of poverty and insecurity, wage workers are found to be especially vulnerable to risks of low diet quality, possibly driven by the decline in real wages over the last year (MAPSA 2022b). Adults in communities with higher food prices are also more likely to have poor dietary diversity. In contrast, children and adults from farming households appear to be somewhat less at risk of food insecurity and inadequate diet diversity, as are households that received remittances.

To avert a full-blown nutrition crisis in Myanmar, effective multisectoral steps are required to protect nutritionally vulnerable populations. In the face of multiple economic shocks such as falling income and rising prices, there is a need for renewed implementation of social protection programs, including maternal and child cash transfers, to improve food security and diet quality. Cash-plus programs hold considerable promise in providing resilience to vulnerable households with recent evidence from Maffioli et al. (2023) showing that maternal cash transfers and nutrition behavioral change communication (BCC) had sustained benefits on maternal and child diet diversity during 2020-2021 economic crises which is about three years post-program. Remote implementation through digital cash transfer as well as BCC through phone or online sessions - where phone connections still exist - should be piloted and evaluated.

Another potential avenue for improving welfare of the Myanmar population is facilitating emigration overseas, improving remuneration of overseas migrations and their ability to send money to family members back in Myanmar. Improving the welfare, working conditions and legal rights of Myanmar migrants in countries such as Thailand may also help. Remittances are clearly an effective coping mechanism for households in Myanmar's current political and economic circumstances. At the same time, migration-related disruptions to production and supply chain functions should be monitored and minimized – such as through support to mechanization services – in order to keep the agri-food system functioning as smoothly as possible.

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Appendix Tables

Table A.1 Prevalence of hunger by state

	Q1 (Dec 21-Feb 22)		Q2 (Apr 22-Jun 22)		Q3 (Jul 22- Aug 22)		Q4 (Oct 22-Dec 22)		Diff: moderate to severe hunger Q4 – Q1
	Little to no	Moderate to severe	Little to no	Moderate to severe	Little to no	Moderate to severe	Little to no	Moderate to severe	
Means (%)									% points
Kachin	96.6	3.4	97.1	2.9	98.6	1.4	96.2	3.8	0.4*
Kayah	95.4	4.6	89.0	11.0	89.5	10.5	95.2	4.8	0.1
Kayin	94.0	6.0	94.9	5.1	90.6	9.4	94.0	6.0	0.0
Chin	93.7	6.3	90.2	9.8	90.9	9.1	90.0	10.0	3.6
Sagaing	98.6	1.4	97.6	2.4	97.0	3.0	97.6	2.4	1.0*
Tanintharyi	94.4	5.6	90.0	10.0	87.3	12.7	94.5	5.5	-0.1
Bago	97.2	2.8	95.2	4.8	95.9	4.1	94.7	5.3	2.5***
Magway	93.8	6.2	95.8	4.2	96.8	3.2	95.7	4.3	-1.9*
Mandalay	96.2	3.8	97.3	2.7	97.0	3.0	97.1	2.9	-0.9
Mon	94.5	5.5	94.5	5.5	93.9	6.1	93.2	6.8	1.3
Rakhine	93.9	6.1	96.1	3.9	93.6	6.4	94.0	6.0	0.0
Yangon	96.1	3.9	96.8	3.2	97.5	2.5	96.6	3.4	-0.5
Shan	96.4	3.6	96.5	3.5	97.9	2.1	96.8	3.2	-0.4
Ayeyarwady	93.4	6.6	95.3	4.7	94.8	5.2	96.3	3.7	-2.9***
Nay Pyi Taw	93.0	7.0	96.0	4.0	96.9	3.1	97.0	3.0	-4.0*

Note: Asterisks refer to the level of statistical significance in the difference in means between Quarter 4 and Quarter 1: * p < 0.10, ** p < 0.05, *** p < 0.01.

Table A.2 Prevalence of low food consumption score (FCS≤38.5) by state/region

	Q1 (Dec 21-Feb 22)	Q2 (Apr 22-Jun 22)	Q3 (Jul 22- Aug 22)	Q4 (Oct 22-Dec 22)	Difference: Q4 – Q1
	Percentages (%)				% points
Kachin	7.1	20.3	11.3	13.3	6.2***
Kayah	28.5	36.1	26.9	21.3	-7.2
Kayin	7.6	22.0	20.0	23.1	15.5***
Chin	39.3	58.0	47.0	48.3	8.9
Sagaing	7.4	14.0	14.3	15.4	8.0***
Tanintharyi	6.1	12.4	12.6	14.8	8.8***
Bago	8.8	15.9	20.1	14.5	5.7***
Magway	14.2	22.4	25.5	22.7	8.4***
Mandalay	9.2	13.8	11.8	13.0	3.9***
Mon	6.2	21.4	17.3	17.6	11.4***
Rakhine	11.0	19.0	22.8	18.7	7.6***
Yangon	4.9	12.3	11.4	10.6	5.6***
Shan	16.3	21.0	17.9	18.0	1.7
Ayeyarwady	8.2	15.7	21.0	16.0	7.8***
Nay Pyi Taw	8.0	12.4	10.4	8.9	0.9
No. of observations	12100	12142	12128	12924	

Note: Asterisks refer to the level of statistical significance in the difference in means between Quarter 4 and Quarter 1: * p < 0.10, ** p < 0.05, *** p < 0.01.

Table A.3 Percentage of adult men consuming different food groups in the past 24 hours

	Q1 (Dec 21- Feb 22)	Q2 (Apr 22- Jun 22)	Q3 (Jul 22- Aug 22)	Q4 (Oct 22- Dec 22)	Diff: Q4 – Q1
	Means (%)				% points
Cereals, grains, roots & tubers	99.3	98.8	99.6	99.6	0.4**
Beans	55.0	53.3	53.2	51.1	-3.9***
Nuts or seeds	43.4	37.9	36.4	37.2	-6.2***
Milk and dairy products	15.8	16.7	13.1	11.8	-4.0***
Egg	50.0	47.7	49.1	47.0	-3.0**
Meat and Fish	89.2	83.5	83.8	86.5	-2.7***
Other fruits	38.8	52.3	50.2	50.5	11.8***
Vitamin A rich fruits & vegetables	47.3	26.7	27.2	29.8	-17.5***
Dark green vegetables	85.1	85.5	82.1	84.9	-0.2
Other vegetables	82.0	73.9	78.3	79.0	-3.0***

Note: Asterisks refer to the level of statistical significance in the difference in means across Quarter 3 and Quarter 1: * p < 0.10, ** p < 0.05, *** p < 0.01.

Table A.4 Percentage of adult women consuming different food groups in the past 24 hours

	Q1 (Dec 21- Feb 22)	Q2 (Apr 22- Jun 22)	Q3 (Jul 22- Aug 22)	Q4 (Oct 22- Dec 22)	Diff: Q4 – Q1	Diff: Q4 Male – Female
	Means (%)				% points	
Cereals, grains, roots & tubers	99.4	99.0	99.6	99.6	0.2	0.01
Beans	52.6	52.1	52.3	48.6	-4.0***	2.53**
Nuts or seeds	44.3	37.8	35.8	38.8	-5.5***	-1.60
Milk and dairy products	16.9	16.4	14.2	14.0	-2.9***	-2.14***
Egg	55.0	46.6	47.7	47.8	-7.2***	-0.80
Meat and Fish	88.5	78.3	80.1	83.3	-5.2***	3.16***
Other fruits	42.4	51.8	50.1	50.7	8.3***	-0.16
Vitamin A rich fruits & vegetables	51.0	25.2	26.8	32.0	-19.0***	-2.23**
Dark green vegetables	83.5	82.9	79.6	84.1	0.6	0.79
Other vegetables	82.0	71.5	76.5	77.2	-4.8***	1.82**

Note: Asterisks refer to the level of statistical significance in the difference in means across Quarters and gender: * p < 0.10, ** p < 0.05, *** p < 0.01.

Table A.5 Percentage of adults with inadequate diet diversity by state/region

	Q1 (Dec 21- Feb 22)	Q2 (Apr 22- Jun 22)	Q3 (Jul 22- Aug 22)	Q4 (Oct 22- Dec 22)	Change: Q4 – Q1
	Means (%)				% points
Kachin	15.5	27.1	20.6	23.7	8.1**
Kayah	24.6	42.6	20.0	21.1	-3.5
Kayin	28.0	35.0	36.8	33.2	5.2
Chin	26.2	51.5	33.3	42.8	16.7*
Sagaing	10.2	21.4	19.6	18.0	7.9***
Tanintharyi	26.0	27.9	32.7	29.9	3.9
Bago	21.9	25.8	35.4	25.9	4.1*
Magway	19.7	25.5	27.3	23.6	4.0*
Mandalay	15.2	19.2	18.0	17.9	2.8*
Mon	26.2	35.6	32.4	34.1	7.9**
Rakhine	34.4	34.0	36.8	30.6	-3.8
Yangon	22.2	26.8	29.4	25.4	3.3*
Shan	13.1	21.7	19.2	19.5	6.3***
Ayeyarwady	29.5	36.8	35.6	34.6	5.2***
Nay Pyi Taw	10.8	24.6	24.0	20.5	9.7**
No. of observations	12100	12142	12128		

Note: Asterisks refer to the level of statistical significance in the difference in means across Quarter 4 and Quarter 1: * p < 0.10, ** p < 0.05, *** p < 0.01.

Table A.6 Percentage of reproductive age women (15-49 years) with inadequate diet diversity

	Q1 (Dec- Feb 22)	Q2 (Apr- Jun 22)	Q3 (Jul- Aug 22)	Q4 (Oct 22- Dec 22)	Diff: Q4 – Q1	Diff: Q4 – Q3
	Means (%)				% points	
National	21.5	29.6	29.1	25.9	4.4***	-3.2***
Rural	22.6	31.6	30.6	27.0	4.4***	-3.6***
Urban	18.8	25.0	25.3	23.1	4.3**	-2.2
Asset-poor (0-3 asset)	30.1	42.0	37.6	34.9	4.9**	-2.7
Asset-low (4-6 assets)	20.0	26.1	26.5	22.0	2.0	-4.4***
Asset-rich (7-10 assets)	12.3	17.4	20.7	17.2	4.9***	-3.5*
Income poor	24.4	34.0	31.9	29.6	5.2***	-2.3
Income not poor	17.0	22.0	23.6	18.0	1.0	-5.6***
No. of observations	4955	5119	5177	5413		

Note: Asterisks refer to the level of statistical significance in the difference in means across Quarters: * p < 0.10, ** p < 0.05, *** p < 0.01.

Table A.7 Percentage of reproductive age women (15-49 years) consuming different food groups in the past 24 hours

	Q1 (Dec-Feb 22)	Q2 (Apr-Jun 22)	Q3 (Jul-Aug 22)	Q4 (Oct 22- Dec 22)	Diff: Q4 – Q1
	Means (%)				% points
Cereals, grains, roots & tubers	99.3	99.0	99.5	99.6	0.3
Beans	51.7	50.9	51.3	47.3	-4.4***
Nuts or seeds	42.6	37.3	35.3	38.5	-4.1***
Milk and dairy products	16.3	16.8	13.9	14.0	-2.3**
Egg	53.6	45.6	47.1	47.6	-6.0***
Meat and Fish	87.8	77.8	79.6	82.8	-5.0***
Other fruits	41.0	51.2	49.5	49.1	8.1***
Vitamin A rich fruits & vegetables	49.7	24.4	26.5	31.7	-17.9***
Dark green vegetables	83.3	82.4	79.5	83.9	0.6
Other vegetables	80.9	71.1	76.4	76.6	-4.3***

Note: Asterisks refer to the level of statistical significance in the difference in means across Quarter 4 and Quarter 1: * p < 0.10, ** p < 0.05, *** p < 0.01.

Table A.8 Percentage of reproductive age women (15-49 years) with inadequate diet diversity by state/region

	Q1 (Dec-Feb 22)	Q2 (Apr-Jun 22)	Q3 (Jul-Aug 22)	Q4 (Oct 22- Dec 22)	Diff: Q4 – Q1
	Means (%)				% points
Kachin	15.8	24.5	23.1	25.0	9.3
Kayah	39.3	50.2	23.2	26.1	-13.2
Kayin	25.0	33.6	36.4	31.1	6.1
Chin	22.1	53.5	32.9	48.0	25.9*
Sagaing	9.6	23.8	22.7	19.8	10.2***
Tanintharyi	32.7	31.7	35.2	31.2	-1.6
Bago	25.3	27.0	36.6	25.1	-0.2***
Magway	19.2	28.6	32.5	28.9	9.7***
Mandalay	15.1	23.5	17.8	20.4	5.3**
Mon	25.9	38.4	36.4	28.8	2.9**
Rakhine	38.6	37.7	37.6	28.3	-10.3
Yangon	23.1	29.4	30.1	26.9	3.8**
Shan	13.3	23.7	19.1	18.7	5.4**
Ayeyarwady	30.1	38.6	37.0	35.5	5.4**
Nay Pyi Taw	10.4	28.7	26.0	26.4	16.0***

Note: Asterisks refer to the level of statistical significance in the difference in means across Quarter 4 and Quarter 1: * p < 0.10, ** p < 0.05, *** p < 0.01.

Table A.9 Percentage of boys consuming different food groups in the past 24 hours

	Q1 (Dec- Feb 22)	Q2 (Apr- Jun 22)	Q3 (Jul- Aug 22)	Q4 (Oct 22- Dec 22)	Diff: Q4 – Q1
	Means (%)				% points
	6 - 23 months				
Grains	95.9	96.3	98.8	99.2	3.3**
Legumes & Nuts	43.4	46.2	46.7	47.3	3.8
Milk and dairy products	41.2	39.8	33.5	33.1	-8.2**
Meat and Fish	57.3	55.2	59.0	63.1	5.8
Egg	49.0	52.5	46.4	47.3	-1.7
Vit-A rich fruits/vegetables	42.3	54.4	51.8	57.5	15.2***
Other fruits/vegetables	69.0	61.2	58.7	68.9	-0.1
	24 – 59 months				
Grains	-	99.3	99.9	99.9	0.6
Legumes & Nuts	-	63.7	62.5	60.5	-3.2
Milk and dairy products	-	32.6	25.1	27.6	-4.9*
Meat and Fish	-	74.7	79.6	83.1	8.4***
Egg	-	55.6	61.4	57.2	1.6
Vit-A rich fruits/vegetables	-	71.5	71.8	68.4	-3.1
Other fruits/vegetables	-	80.1	81.1	81.2	1.1

Note: Asterisks refer to the level of statistical significance in the difference in means across Quarter 4 and Quarter 1 for children 6-23 months and difference in means across Quarter 4 and Quarter 2 for children 24-59 months: * p < 0.10, ** p < 0.05, *** p < 0.01.

Table A.10 Percentage of girls consuming different food groups in the past 24 hours

	Q1 (Dec- Feb 22)	Q2 (Apr- Jun 22)	Q3 (Jul- Aug 22)	Q4 (Oct 22- Dec 22)	Diff: Q4 – Q1/Q2
	Means (%)				% points
	6-23 months				
Grains	94.2	95.3	97.9	98.6	4.4**
Legumes & Nuts	46.8	43.2	52.5	48.8	2.0
Milk and dairy products	37.9	37.7	34.5	38.1	0.2
Meat and Fish	51.7	58.9	62.4	59.1	7.4*
Egg	51.4	40.7	45.9	49.8	-1.6
Vit-A rich fruits/vegetables	41.9	54.8	54.5	56.6	14.6***
Other fruits/vegetables	67.7	57.4	65.3	67.2	-0.5
	24 – 59 months				
Grains	-	98.6	99.4	99.4	0.8*
Legumes & Nuts	-	65.1	65.6	64.4	-0.7
Milk and dairy products	-	34.9	24.9	25.9	-8.9***
Meat and Fish	-	81.4	78.1	80.7	-0.7
Egg	-	53.9	54.8	59.1	5.2*
Vit-A rich fruits/vegetables	-	73.7	75.4	72.7	-1.0
Other fruits/vegetables	-	80.5	83.9	80.9	0.4

Note: Asterisks refer to the level of statistical significance in the difference in means across Quarter 4 and Quarter 1 for children 6-23 months and difference in means across Quarter 4 and Quarter 2 for children 24-59 months: * p < 0.10, ** p < 0.05, *** p < 0.01.

Table A.11 Percentage of households reporting reduction in food expenditure by food groups

	Q1 (Dec- Feb 22)	Q2 (Apr- Jun 22)	Q3 (Jul- Aug 22)	Q4 (Oct 22- Dec 22)	Diff: Q4 – Q2
	Means (%)				% points
Reduced food expenditures?	59.4	47.0	46.7	50.1	3.1***
Staple grains, roots and tubers	-	29.8	29.5	39.1	9.3***
Beans and nuts	-	26.6	29.9	37.1	10.5***
Dairy	-	31.7	37.1	45.5	13.9***
Eggs	-	38.5	43.0	52.9	14.4***
Meat and Fish	-	86.3	86.8	87.6	1.3
Fruits	-	26.7	26.3	33.0	6.3***
Vegetables	-	21.4	20.5	28.6	7.2***
Sugary products	-	38.5	45.2	56.4	17.9***
Oils, fats and butter	-	72.9	80.4	84.2	11.3***
Condiments	-	44.1	51.7	63.3	19.3***
Restaurant meals, takeaway meals	-	47.8	54.5	57.8	10.0***

Note: Asterisks refer to the level of statistical significance in the difference in means across Quarter 4 and Quarter 2: * p < 0.10, ** p < 0.05, *** p < 0.01.

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