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The State of Food Security and Nutrition in Myanmar 2021-24

Findings from seven rounds of the Myanmar Household Welfare Survey

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ABSTRACT

This working paper explores the state of food security and nutrition in Myanmar using seven rounds of nationally representative household panel data collected from December 2021 to July 2024. Overall, the state of food security and nutrition has deteriorated in Myanmar in 2021-24. More than three percent of households were in moderate to severe hunger in April-July 2024. Hunger was highest in Chin (14.4 percent), as well as Rakhine (8.0 percent) and Kayah (5.2 percent) in the latest survey round. Households with a low food consumption score increased from 9.4 percent in December 2021-February 2022 to 17.7 percent in April-June 2023 and remains high at 13.5 percent in April-July 2024. The shares in April-July 2024 were highest in Kayah (52.3 percent), Chin (33.9 percent), and Shan (21.1 percent).

Inadequate diet diversity among adults rose from 20.6 percent to 25 percent over December 2021-February 2022 to April-July 2024. Women saw a faster decline in diet quality from December-February 2022 to April-July 2024 (6.3 percentage points increase in poor diet quality vs 2.4 percentage points for men). Decreases in diet quality among adults are driven by lower consumption of nuts and seeds and milk/dairy products. 29.5 percent of all children aged 6-23 months and 20.9 percent of all children aged 6-59 months had inadequate diet quality in the latest round of survey.

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.

To avert a full-blown nutrition crisis in Myanmar, effective multisectoral steps are required to protect nutritionally vulnerable populations. Expanded implementation of nutrition- and gender-sensitive social protection programs, including maternal and child cash transfers, particularly to vulnerable groups is called for. Further, 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 working paper, we provide an overview of the state of food security and nutrition in Myanmar using household datasets collected across seven rounds over two and half years from December 2021 to July 2024. 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 the population: (1) adults (18+ years), (2) women of reproductive age (15-49 years), and (3) children (6-23 and 6-59 months).

We explore these indicators using seven rounds of the Myanmar Household Welfare Survey (MHWS) collected over the phone from December 2021 to June 2024 – hereafter R1, R2, R3, R4, R5, R6, and R7 – among over 12,000 households in 310 townships of Myanmar. MWHS is a nationally, urban/rural and state/region representative phone survey (MAPSA 2022a). Four rounds of data collection were spread out roughly over the four quarters in 2022, with two more rounds in 2023. This update on the food security and nutrition status in Myanmar primarily focuses on the seventh round which was conducted from April to June 2024 and the timing of survey co-incites with that of comparable periods in the year during the second and fifth round of data collection in 2022 and 2023.

We use standard food security and diet diversity measures for each of the three subpopulations to examine trends over the seven 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.

Myanmar's economy continues to face substantial challenges in 2024 with elevated conflict, rising macroeconomic instability, and a difficult business environment significantly constraining economic activities. GDP is estimated to have grown by just 1 percent in the year ending March 2024, still around 10 percent below pre-pandemic levels (World Bank 2024)). Over the last year, conflict intensified across multiple states and regions of Myanmar with a deteriorating situation in Rakhine, as well as Kachin, the Northwest and Southeast (OCHA 2024a, OCHA 2024b) with roads and waterways closed, causing significant food shortages, and other supply issues resulting in significantly higher prices for essential goods, including food staples. Conflict not only hampers household livelihoods and agricultural output but also disrupts land border trade with China and Thailand, as well as domestic supply chains. The persistent depreciation of the kyat, combined with restricted access to foreign exchange and import licenses, has driven up prices and caused shortages of critical imported inputs. Additionally, recurrent power outages have worsened, forcing businesses to rely on costly diesel generators, thereby inflating production costs. Amid this challenging situation, this report provides an update on the food security and nutrition status in Myanmar, drawing on the latest data from a nationally representative phone survey.

2. TRENDS IN 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.

2.1 Hunger Household Scale

Table 1 presents the prevalence of hunger at the national level for the selected rounds of the survey as explained in the introduction. Although moderate or severe hunger was consistent at around 4 percent of households throughout 2022, hunger fell to 3.3 percent in 2023 and stayed the same, at 3.2 percent, about a year later in 2024. This is about 1.2 percentage points lower compared to about two years ago when we started surveys (i.e. R1). Nearly 8 percent of households reported that there was no food to eat of any kind in their house because of lack of resources to get food, 3.1 percent reported that themselves or another household member went to sleep at night hungry because there was not enough food, and 1.2 percent of households reported that she or another household member went a whole day and night without eating anything at all because there was not enough food, on at least one day in the four weeks preceding the survey interview day in R7. These figures have fallen compared to R1. **However, within the households that reported the occurrence of these hunger events, the frequency of occurrence has increased significantly:** 11.5 percent of households reported to have experienced lack of food at home, 6.6 percent reported to have a member going to sleep hungry, and 7.3 percent reported to have a member going all day and night without food more than 10 times in the four weeks preceding the survey in R7.

Hunger is found to be concentrated more in poor households. **However, contrary to previous rounds, a higher percentage of households in urban areas reported to experience more hunger compared to households in rural areas in the latest round of the survey. At the same time, the gap in incidence of moderate to severe hunger seems to be increasing between rich and poor households.** From Table A.12 in the Appendix, we find that the difference in the prevalence of hunger is 3.9 percentage points between the income poor and not poor, while it is 5.7 percentage points between the asset poor and asset rich[1] in R7, which is up from 3.4 and 5.1 percentage points, respectively, in R6.

At the state level, the rate of moderate to severe hunger continues to be very high for Chin (14.4 percent), as well as Rakhine (8.0 percent) and Kayah (5.2 percent) going into R7 (Appendix Table A.1). This is probably as a result of increased conflict in these regions. On the other hand, Ayeyarwady and Mon saw a fall in hunger over the last two years (see Appendix Table A.1).

[1] 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.

Table 1. Composite categories of Household Hunger Score (HHS) and 30-day recall questions, percentage of households

	R1 (Dec 21 to Feb 22)	R2 (Apr to Jun 22)	R5 (Apr to Jun 23)	R6 (Sep to Nov 23)	R7 (Apr to Jun 24)	R7-R6	R7-R5	R7-R2
	Percentages (%)					*% points*		
HHS classifications								
Little to no hunger	95.6	95.9	96.7	96.5	96.8	0.3	0.1	0.9***
Moderate hunger	4.2	3.8	3.1	3.1	3.0	-0.2	-0.1	-0.9**
Severe hunger	0.2	0.3	0.2	0.3	0.2	-0.1	0.0	0.0
Moderate to severe hunger	4.4	4.1	3.3	3.5	3.2	-0.3	-0.1	-0.9***
No food of any kind in the house	11.5	9.7	7.3	9.0	7.9	-1.1**	0.6	-1.8***
Rarely (1-2 times) [a]	48.6	38.2	38.7	44.7	43.4	-1.2	4.7	5.3*
Sometimes (3-10 times) [a]	47.8	50.7	48.9	46.9	45.1	-1.8	-3.9	-5.6*
Often (more than 10 times) [a]	3.6	11.1	12.4	8.5	11.5	3.0	-0.9	0.4
Went to sleep hungry	4.9	3.8	3.3	3.6	3.1	-0.6*	-0.3	-0.8**
Rarely (1-2 times) [a]	46.2	38.9	46.2	47.7	49.9	2.1	3.6	10.9**
Sometimes (3-10 times) [a]	50.6	54.8	47.4	46.0	43.5	-2.5	-3.9	-11.3**
Often (more than 10 times) [a]	3.2	6.2	6.4	6.3	6.6	0.3	0.2	0.4
Went full day & night without food	2.1	1.6	1.3	1.5	1.2	-0.2	0.0	-0.4*
Rarely (1-2 times) [a]	45.0	51.7	50.9	47.9	50.9	3.0	0.0	-0.8
Sometimes (3-10 times) [a]	50.0	42.1	42.9	44.0	41.9	-2.2	-1.0	-0.3
Often (more than 10 times) [a]	5.0	6.2	6.2	8.1	7.3	-0.8	1.0	1.1
No of observations	12,100	12,142	12,953	12,898	13,163			

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 Rounds: * p < 0.10, ** p < 0.05, *** p < 0.01. "Went to sleep hungry" and "went full day & night without food" refer to any household member undergoing these experiences.

2.2 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 the 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 household's 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 inadequate or 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 improved over the past two years, from R2 to R7 of our survey**. Currently, 12.8 percent of households have borderline food consumption, while 0.7 percent of households have poor food consumption in R7. **This improvement was primarily driven by small increases in the household consumption of 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 per week in R1 to 0.7 days in R7. 73.8 percent of households also reported not to consume any milk or dairy products in the preceding seven days

of the survey in R7. There has also been a large increase in the consumption of sugar or sweets by 1.1 days per week over the last two years which may be a cause for concern.

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

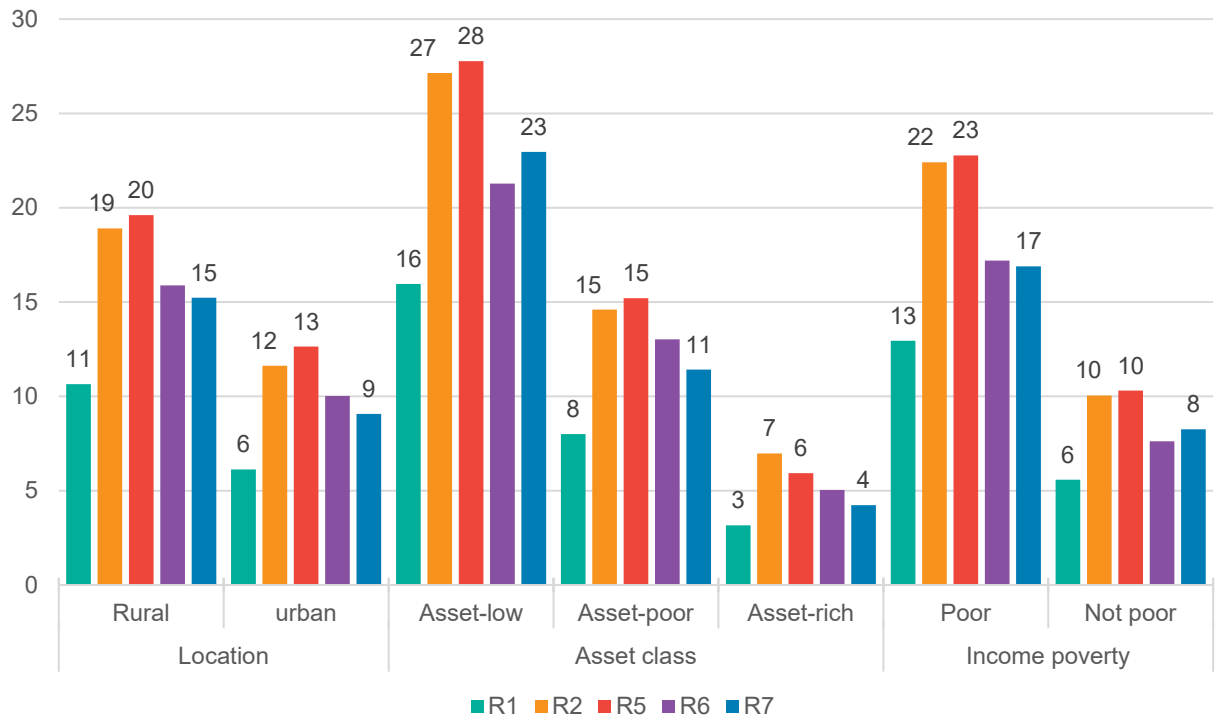
	R1 (Dec 21 to Feb 22)	R2 (Apr to Jun 22)	R5 (Apr to Jun 23)	R6 (Sep to Nov 23)	R7 (Apr to Jun 24)	R7-R6	R7-R5	R7-R2
	Percentages (%)					*% points*		
Main staples	7.0	7.0	7.0	7.0	7.0	0.0***	0.0	0.0
Pulses/legumes/nuts	3.1	2.5	2.4	2.5	2.4	-0.1*	0.0	-0.1**
Milk/dairy products	1.2	0.9	0.7	0.7	0.7	0.0	0.0	-0.1***
Meat, fish, and eggs	5.0	3.9	4.0	4.5	4.5	0.0	0.4	0.6***
Vegetables	5.3	5.5	5.4	5.7	5.7	0.0	0.2	0.2***
Fruits	2.5	3.5	3.0	2.1	3.1	1.1***	0.1	-0.4***
Oil, fats, and butter	6.6	6.7	6.8	6.8	6.8	0.0**	0.0	0.1***
Sugar or sweet	3.3	2.1	2.1	2.1	3.2	1.1***	1.1	1.1***
Food Consumption Score (0-112)	60.9	53.9	53.3	54.6	55.9	1.3***	2.6	1.9***
	Percentages (%)					*% points*		
Acceptable food consumption	90.6	83.1	82.3	85.8	86.5	0.7	4.2***	3.4***
Borderline food consumption	8.9	15.7	16.8	13.5	12.8	-0.7	-4.0***	-2.9***
Poor food consumption	0.5	1.2	0.8	0.7	0.7	0.0	-0.1	-0.5***
No. of observations	12,100	12,142	12,953	12,898	13,163			

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 Rounds: * p < 0.10, ** p < 0.05, *** p < 0.01.

There is significant urban/rural disparity in the consumption of milk and dairy products, with consumption much higher in urban areas compared to rural areas (1.2 and 0.6 days, respectively, in R7, results not shown). The same is seen in meat, fish, and eggs, with urban households consuming these foods 4.9 days per week compared to 4.3 days in rural areas in R6. On the other hand, consumption of sugar and sweets has increased significantly in urban areas over the last year, from 2.6 days/week in R5 to 4.0 days/week in R7, which is a higher rate of increase compared to rural areas, from 1.9 days/week in R5 to 2.9 days/week in R7.

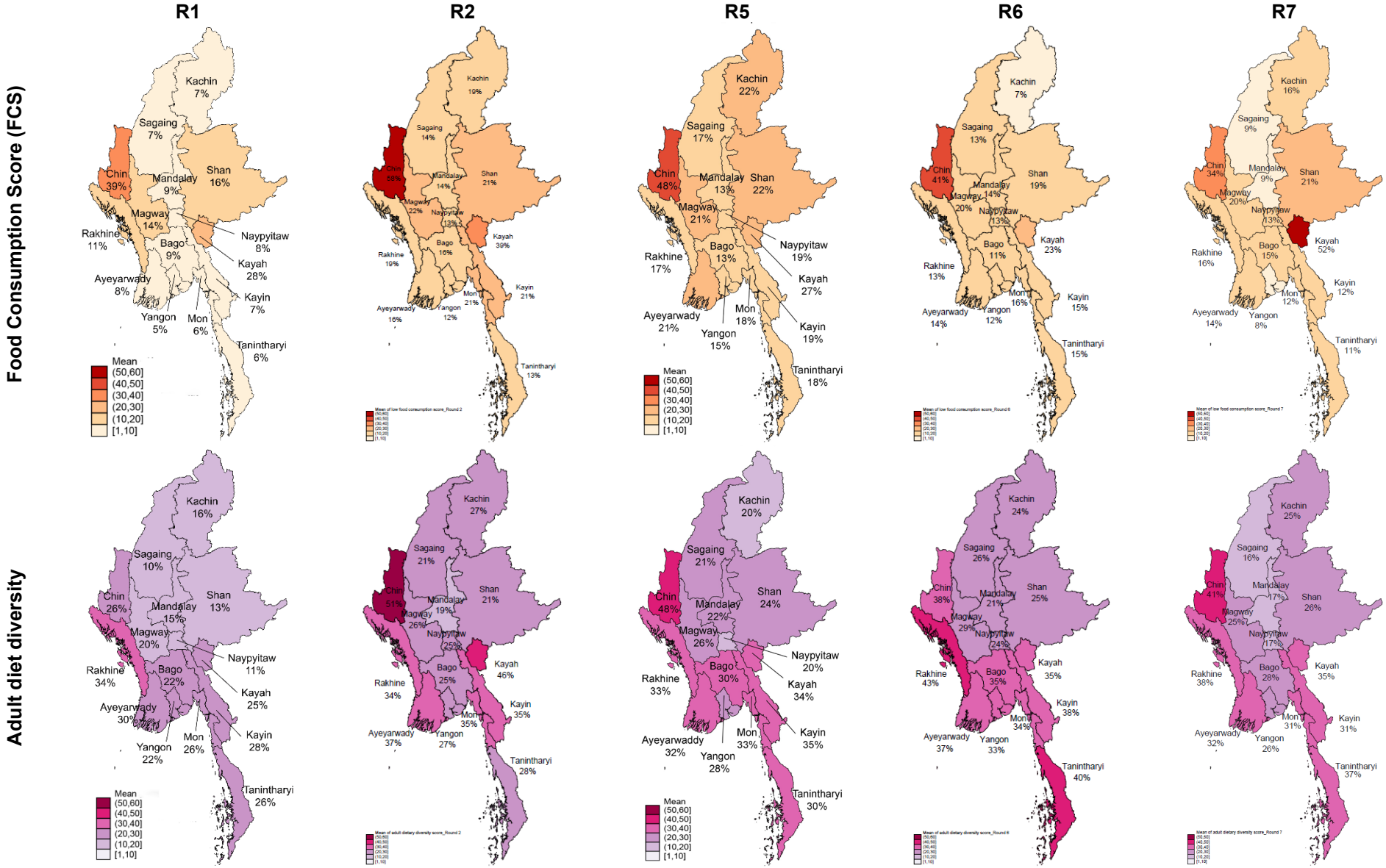
With respect to location, asset class, and poverty status, **households in rural areas and those in asset and income poverty are much more likely to have low food consumption scores, with a sharp increase from R1 to R2 and staying consistently high over the past year (Figure 1).** About 15 percent of households in rural areas had a low FCS compared to 9 percent in urban areas in R7 with the rate of increase from R1 also higher for rural compared to urban areas (4.6 vs 2.9 percentage points). Twenty-three percent of asset-poor and 11 percent of asset-low households have a low FCS in R7 – a statistically significant increase of 7.0 and 3.4 percentage points from R1. The prevalence of a low FCS among income-poor households also saw an increase from 12.8 percent in R1 to 16.9 percent in R7.

Figure 1. Proportion of households with low food consumption score (FCS<=38.5)



There were large differences in the FCS across states/regions (see Appendix Table A.2/Figure 2). **The prevalence of a low FCS is highest in Kayah (52.3 percent), Chin (33.9 percent), and Shan (21.1 percent) in R7.** On the other hand, **there was a large increase in the prevalence of a low FCS in Kayah (19.2 percentage points), Kachin (8.6 percentage points), and Bago (6.2 percentage points) between R1 and R7.**

Figure 2. Proportion of households with low food consumption score and adult diet diversity by state/region



3. TRENDS IN DIETARY DIVERSITY INDICATORS FOR ADULTS AND YOUNG CHILDREN

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.

3.1 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 the selected survey rounds from MHWS. **A quarter of all adults (25 percent) in Myanmar were found to be without an adequately diverse diet in R7.** There was a large and statistically significant increase of 4.5 percentage points in the prevalence from R1 to R7, with the rate remaining high throughout 2022-2024. Adults in rural areas have a higher prevalence of inadequate diet diversity compared to urban areas (25.5 vs 23.9 percent in R7). Adults in asset and income poor households have a higher prevalence of inadequate dietary diversity in R7 at 34.8 and 28.6 percent, respectively.

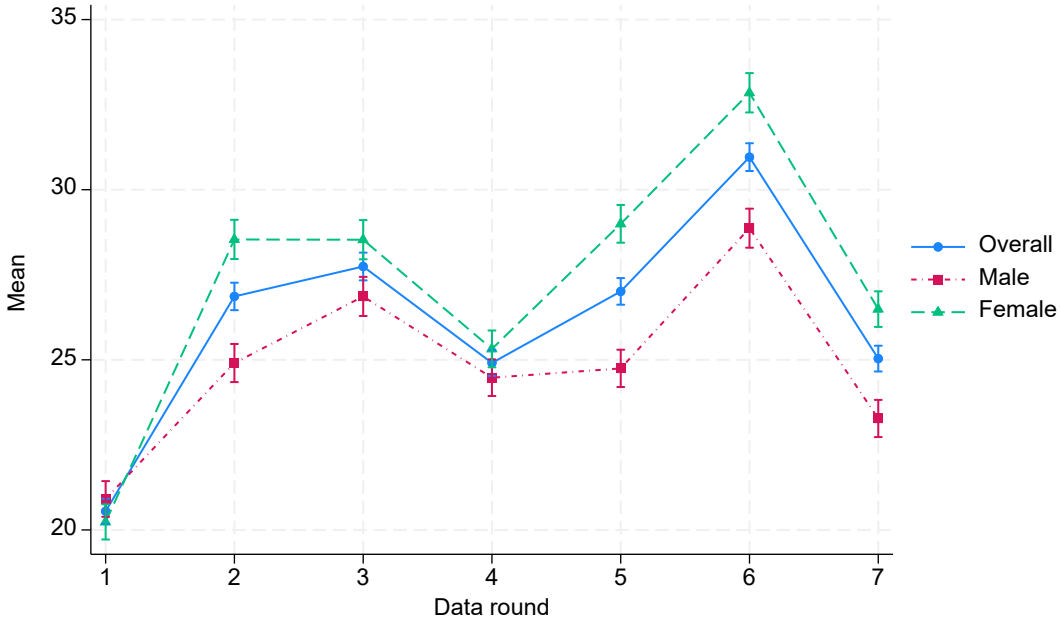
Table 3. Percentage of adults with inadequate diet diversity, 24-hour recall

		R1 (Dec 21 to Feb 22)	R2 (Apr to Jun 22)	R5 (Apr to Jun 23)	R6 (Sep to Nov 23)	R7 (Apr to Jun 24)	R7-R6	R7-R5	R7-R2
				Means (%)				*% points*	
National	Overall	20.5	26.9	27.0	31.0	25.0	-5.9***	-2.0**	-1.8**
	Male	20.9	24.9	24.7	28.9	23.3	-5.6***	-1.5	-1.6
	Female	20.2	28.5	29.0	32.8	26.5	-6.4***	-2.5**	-2.0**
Rural	Overall	21.3	28.2	28.1	32.0	25.5	-6.5***	-2.6***	-2.8***
	Male	21.2	25.7	25.5	29.6	23.9	-5.7***	-1.6	-1.8
	Female	21.3	30.4	30.4	34.2	26.8	-7.4***	-3.6***	-3.6***
Urban	Overall	18.8	23.4	24.3	28.3	23.9	-4.4***	-0.3	0.5
	Male	20.2	22.8	22.9	26.8	21.6	-5.2**	-1.3	-1.2
	Female	17.6	24.0	25.5	29.6	25.8	-3.8**	0.3	1.8
National	Asset-poor	30.5	39.2	38.3	41.1	34.8	-6.3***	-3.5**	-4.4***
	Asset-low	18.4	24.1	24.3	28.5	23.4	-5.0***	-0.9	-0.7
	Asset-rich	12.6	17.0	16.1	21.0	16.1	-4.9***	0.0	-0.9
National	Income poor	23.8	32.2	31.6	34.2	28.6	-5.6***	-3.0***	-3.6***
	Income not poor	16.5	19.8	20.0	22.9	19.1	-3.8***	-0.9	-0.7
No. of observations		12,100	12,142	12,128	12,924	12,953			

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

Over our survey period, there was a divergence in the diet quality of men and women (see Figure 3). **Women saw a faster deterioration of diet quality over the survey periods, with a 6.3 percentage point increase in the prevalence of low diet diversity from 20.2 percent in R1 to 26.5 percent in R7**. This contrasts with men who saw an increase of 2.4 percentage points over the same period from 20.9 percent in R1 to 23.3 percent in the latest round of survey. This is worrying because poor diet quality can put women at risk of micronutrient deficiencies and various health problems, but also, as mothers, their health and nutrition can adversely affect the nutrition, health, and long-term cognitive development of their children.

Figure 3. Trend in the percentage of adults with inadequate diet diversity by gender



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, over the past two years from R2 to R7, consumption of nuts and seeds and milk/dairy products fell for adults.** On the other hand, when compared from R1 to R7 (i.e. when we first started tracking these changes), we find a large decrease in the consumption of nearly all food groups for adults. Large declines in nutrient-dense foods are a potential risk factor for elevated malnutrition and declining health in the population. We also find significant differences in consumption of food groups by men and women. **In R7, men are more likely to consume almost all food groups with significantly more consumption of beans, meat/fish, and vegetables** (see Appendix Table A.3 and A.4).

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

	R1 (Dec 21 to Feb 22)	R2 (Apr to Jun 22)	R5 (Apr to Jun 23)	R6 (Sep to Nov 23)	R7 (Apr to Jun 24)	R7-R6	R7-R5	R7-R2
			Means (%)				*% points*	
Cereals/grains/roots	99.3	98.9	99.4	99.6	99.1	-0.5***	-0.3**	0.2
Beans	53.7	52.6	48.9	50.4	53.7	3.3***	4.8***	1.1
Nuts or seeds	44.0	38.2	35.9	35.5	36.7	1.2	0.8	-1.5*
Milk/dairy products	16.4	16.8	12.0	13.7	13.3	-0.3	1.3**	-3.5***
Eggs	52.6	47.0	48.9	47.4	52.2	4.8***	3.3***	5.2***
Meat and Fish	89.0	81.2	82.9	83.7	88.0	4.3***	5.1***	6.8***
Other fruits	40.9	52.3	53.6	40.6	53.1	12.5***	-0.4	0.9
Vit-A rich fruit/vegetables	49.4	25.9	27.9	33.0	28.4	-4.6***	0.5	2.5***
Dark green vegetables	84.2	84.1	84.5	81.6	84.6	3.0***	0.1	0.5
Other vegetables	82.0	72.7	72.3	73.6	73.0	-0.6	0.7	0.3

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

Appendix Table A.5 explores the spatial trend in the prevalence of low diet diversity amongst adults. **Chin (14.7 percentage points), Shan (12.0 pp), and Kayah (8.6 pp) saw the biggest *increase* in the prevalence of low adult diet diversity from R1 to R7, while the highest *rates* are found in Chin, Rakhine, Tanintharyi, and Kayah where more than a third of all adults had inadequate diet quality in R7**. 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.

3.2 Minimum Diet Diversity of Women of Reproductive Age (14-59 Years)

We find similar dietary trends for women of reproductive age (14-59 years) compared to those of all adult women. **In Round 7, about 27.4 percent all reproductive age women (14-59 years) did not consume minimum diet diversity (5 out of 10 food groups),** a statistically significant increase of 5.8 percentage points from R1 (Appendix Table A.6). The prevalence of low diet diversity is higher for reproductive aged women compared to all women nationally (27.4 vs 26.5 percent in R7). 37.4 percent of women in asset poor and 30.7 percent of women in income poor households have inadequate diet quality (see Appendix Table 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 R1 to R7**, 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 **Shan, Rakhine saw an *increase* in the prevalence of low diet diversity for reproductive age women over the past two year (i.e. from R2 to R7) with the highest *rates* prevailing in Rakhine, Tanintharyi and Kayah in R7** (see Appendix Table A.8).

3.3 Minimum Diet Diversity of Children, 6-23 and 6-59 Months

In our survey, for households with children under the age of five years, the primary caregiver is asked questions regarding the food intake of the youngest child. In R1, we asked only for children less than two years old, while in the rest of the rounds, namely R2 to R7, we expanded our sample to include any children below age five. Table 5 presents the estimates for the proportion of children, 6-23 and 6-59 months, not consuming minimum diet diversity i.e. not consuming 4 out of 7 food groups (FANTA, 2006).

We find 29.5 percent of all children aged 6-23 months have inadequate diet quality in R7, with some improvement in the prevalence over the past year possibly due to the panel of children getting older and being introduced to more food groups (see Table 5).

When we consider all children under 5 years old, **we find that about 1 in 5 of all children under 5 (20.9 percent) are without adequate diet diversity. However, we do find an improvement in the prevalence over the past two years by about 3.1 percentage points** (see Table 5). Overall, children from rural areas, and asset and income poor households are worse off.

Table 5. Percentage of children with inadequate diet diversity, 24-hour recall

	6-23 months							
	R1 (Dec 21 to Feb 22)	R2 (Apr to Jun 22)	R5 (Apr to Jun 23)	R6 (Sep to Nov 23)	R7 (Apr to Jun 24)	R7-R6	R7-R5	R7-R2
	Means (%)					*% Points*		
Overall	40.5	41.7	39.4	35.4	29.5	-5.8*	-9.9***	-12.2***
Boys	39.4	38.4	41.7	30.9	29.5	-1.3	-12.2***	-8.9**
Girls	41.7	45.0	37.2	40.5	29.5	-10.9**	-7.6*	-15.4***
No of obs.	684	601	702	746	779			
	6-59 months							
	R1 (Dec 21 to Feb 22)	R2 (Apr to Jun 22)	R5 (Apr to Jun 23)	R6 (Sep to Nov 23)	R7 (Apr to Jun 24)	R7-R6	R7-R5	R7-R2
	Means (%)					*% Points*		
Overall	-	24.0	24.5	24.3	20.9	-3.5**	-3.6**	-3.1**
Boys	-	22.2	25.7	23.9	22.0	-1.9	-3.6	-0.1
Girls	-	26.0	23.4	24.8	19.6	-5.1**	-3.7*	-6.3***
No of obs.	-	2,092	2,352	2,375	2,399			

Note: Asterisks refer to the level of statistical significance in the difference in age adjusted trend between rounds: * p < 0.10, ** p < 0.05, *** p < 0.01.

Next, we look at individual food groups to examine what is driving the changes. For children aged 6-23 months, as we follow the children in our panel who are getting older, we **find an increase in the consumption of almost all food groups, other than milk/dairy products, over the past two years.** Milk/dairy products saw a fall in consumption by 5.4 percentage points for this age group from R2 to R7 (see Table 6).

On the other hand, for children aged 6-59 months, we find an increase in the consumption of meat/fish (6.5 percentage points), eggs (8.7 pp), and Vit-A rich fruits/vegetables (4.0 pp) over the past two years from R2 to R7. Further, similar to the previous group, we also find a decrease in the consumption of milk/dairy products (6.9 percentage points) over the past two years. The fall in consumption of milk was possibly a consequence of increasing prices in the market over the past years.

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

	6-23 months							
	R1 (Dec 21 to Feb 22)	R2 (Apr to Jun 22)	R5 (Apr to Jun 23)	R6 (Sep to Nov 23)	R7 (Apr to Jun 24)	R7-R6	R7-R5	R7-R2
	Means (%)					*% Points*		
Grains	95.0	95.7	95.4	98.9	98.8	-0.1	3.4***	3.1***
Legumes & Nuts	45.2	44.4	46.4	51.1	50.2	-0.9	3.9	5.8*
Milk/dairy products	39.9	38.2	29.3	36.0	32.7	-3.3	3.5	-5.4*
Meat & Fish	54.7	55.4	56.8	65.5	67.5	2.0	10.8***	12.2***
Eggs	50.3	45.6	48.3	49.7	62.2	12.6***	13.9***	16.6***
Vit-A rich fruit/vegetables	42.2	53.2	55.5	56.7	59.0	2.3	3.5	5.8*
Other fruits/vegetables	68.4	58.4	56.6	58.8	67.8	9.0**	11.2***	9.4***
	6-59 months							
	R1 (Dec 21 to Feb 22)	R2 (Apr to Jun 22)	R5 (Apr to Jun 23)	R6 (Sep to Nov 23)	R7 (Apr to Jun 24)	R7-R6	R7-R5	R7-R2
	Means (%)					*% Points*		
Grains	-	98.0	98.2	99.5	99.0	-0.5*	0.8**	1.0**
Legumes & Nuts	-	58.4	56.7	56.5	59.4	2.9	2.8	1.0
Milk/dairy products	-	35.1	28.6	28.5	28.2	-0.3	-0.4	-6.9***
Meat & Fish	-	71.8	72.9	76.8	78.3	1.5	5.4***	6.5***
Eggs	-	52.0	57.1	55.4	60.8	5.4***	3.7**	8.7***
Vit-A rich fruit/vegetables	-	66.9	67.6	69.0	70.8	1.8	3.3**	4.0**
Other fruits/vegetables	-	73.9	67.2	70.0	76.5	6.4***	9.3***	2.6

Note: Asterisks refer to the level of statistical significance in the difference in age adjusted trend between rounds: * p < 0.10, ** p < 0.05, *** p < 0.01.

Overall, we see a fall in consumption of various food groups in our survey over the past two years. 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 in the past 30 days prior to the interview day, and on which items they have reduced it. **Around 37 percent of the respondents in R7 reported to have reduced expenditure on food in the preceding 30 days of the survey day. Of these households, around 30 percent of households reported reducing expenditure on dairy and eggs, 88 percent on meat and fish, and about 38-48 percent of households reported expenditure reductions on fruits and vegetables** (see Appendix Table A.11). This may be a consequence of falling income and rising prices in the face of the multiple shocks that have affected the country. Forty-five percent of our respondents have reported that they have faced a significant decrease in income in the preceding three months of the survey date.

4. REGRESSION ANALYSIS OF THE PREDICTORS OF FOOD INSECURITY AND INADEQUATE DIET DIVERISTY

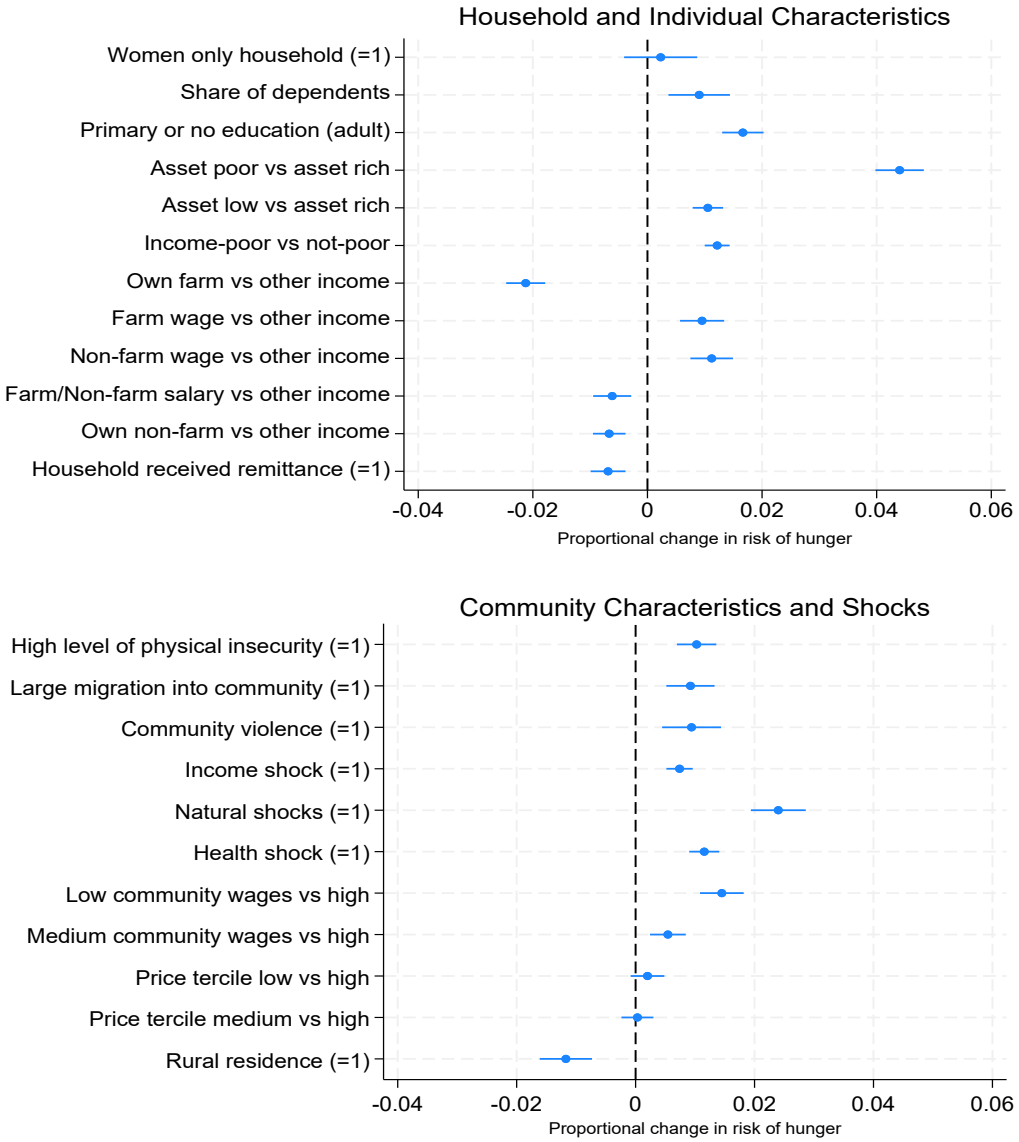
To explore possible risk factors of food security and nutrition, we conduct a panel random effects linear probability model exploring how welfare measures, self-reported shocks, prices, and household characteristics affect the probability of households experiencing moderate to severe hunger, and of having 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 4 and 5 respectively. Full regression results are presented in appendix Table A.14.

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 experience moderate to severe hunger as well as low food consumption. Such households are also likely to have adults, reproductive age women and children aged 6-59 months with poor diet quality. Similarly, households that are asset-poor and asset-low have a higher probability of experiencing hunger, having low FCS, have inadequate diet diversity for adults and reproductive aged women as well as young children compared to asset-rich households.
- **Farm households are found to be protected against food insecurity and inadequate diet quality.** Households who have some form of own farm income are less likely to experience 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 household 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 experience hunger and have a low FCS as well have inadequate diet diversity for reproductive aged women.** On the other hand, households in medium wage communities are more likely at risk of hunger.
- **Remittance-receiving households have a lower likelihood of experiencing hunger 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 experiencing hunger 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 shocks are 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 level. Community violence also increases the likelihood of households experiencing hunger and the diet quality of adults. No significant association is found for young children.

- **Adults in communities with higher food prices[2] are more likely to have poor dietary diversity.**
- **Women-only households are particularly vulnerable to food insecurity** with higher likelihood of having a low food consumption score as well as having inadequate diet diversity for adults and reproductive aged women. However, women-only households seem to provide more resilience to children's diet quality.
- **having adult members with low education levels 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.

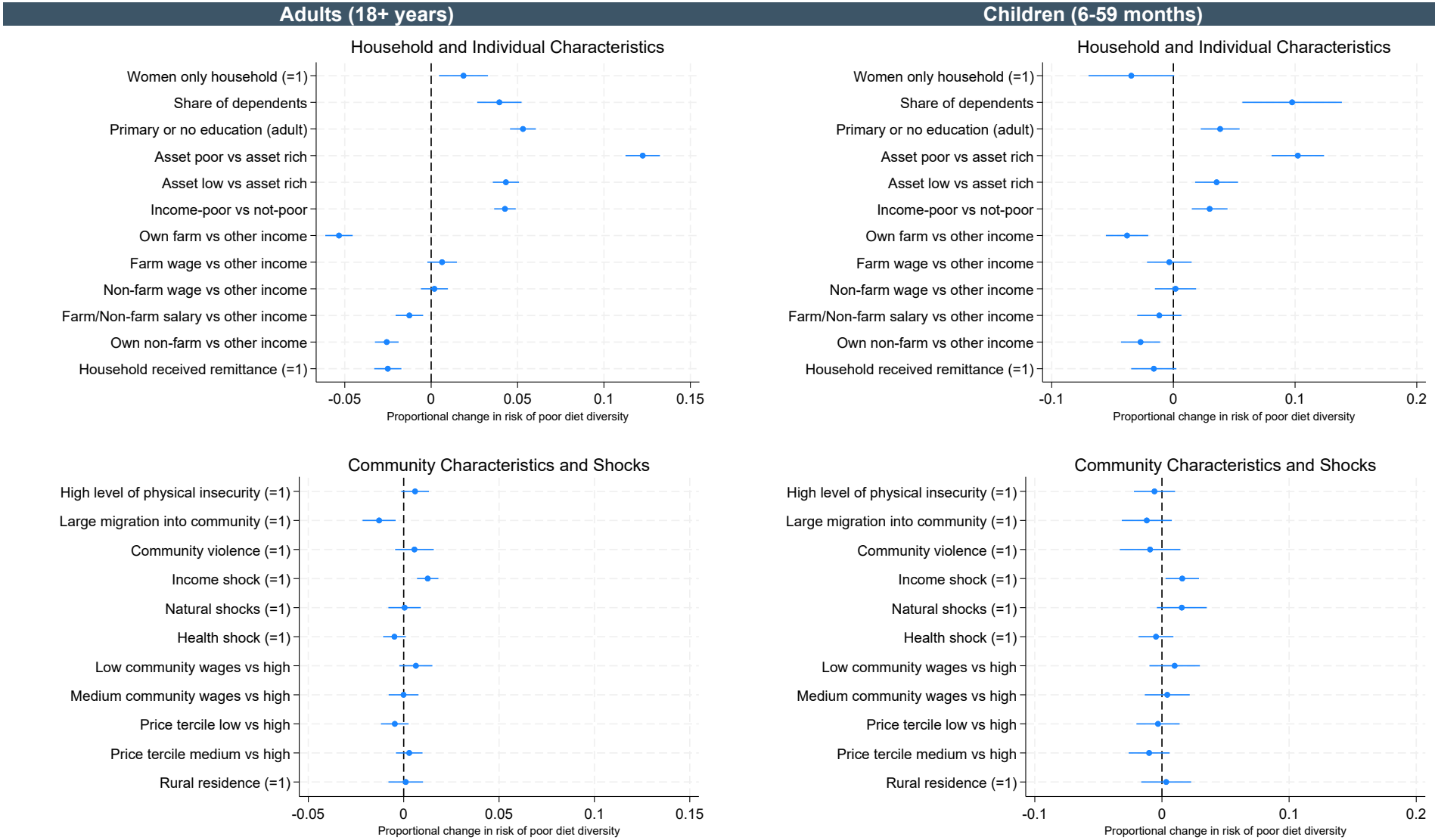
Figure 4. Linear probability model regressions of household and community level predictors of proportional changes in risk of moderate to severe hunger



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

[2] We generated a food price index using prices of ten types of sentinel foods: rice, potatoes, pulses, chicken, fresh fish, dried fish, green leafy vegetables, onions, bananas, and oils. We then categorized each household into price terciles by each survey round i.e. households were placed in high-price group, medium-price group, or low-price group.

Figure 5. Linear probability model regressions of household and community level predictions of proportional changes in risks of inadequate diet diversity among adults and children 6-59 months of age



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

5. CONCLUDING REMARKS

The combined economic and political crises in Myanmar have adversely affected food security and nutrition. Using seven rounds of the Myanmar Household Welfare Survey (MHWS) collected from December 2021-February 2022 to April-June 2024, we document trends in food insecurity and inadequate diet diversity for different regions, socioeconomic groups and demographics groups. Our five key findings are as follows.

First, the prevalence of extreme hunger is, on average, relatively low nationally. It is far more prevalent in poorer households and in more conflict affected regions like Chin, Rakhine and Kayah. However, a higher proportion of households in urban areas reported experiencing extreme hunger compared to households in rural areas in the latest round of the survey. At the same time, the gap in incidence of extreme hunger seems to be increasing between rich and poor households.

Second, among households and adults specifically, dietary quality remains poor over the past two years 2022-24, with a quarter of all adults without an adequately diverse diet. We find the largest increase in the prevalence of inadequate diet quality in Chin, Shan, and Rakhine over the survey period while the highest rates are found in Chin, Kayah, Tanintharyi and Rakhine in the latest round of survey.

Third, we find a divergence in the diet quality of adult men and women over our survey period with women experiencing a larger increase in the prevalence of low diet diversity over the past year with a 6.3 percentage point increase from October-December 2022 to April-June 2024 compared to an increase of 2.4 percentage points for men.

Fourth, 29.5 percent of all children aged 6-23 months and 20.9 percent of all children aged 6-59 months have an inadequately diverse diet in the latest round of survey.

Fifth, regression analysis reveals low income and asset ownership to be important risk factors for food security and diet quality, along with conflict and physical insecurity 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 2023b). 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. Women-only households are found to be vulnerable to food insecurity.

Of note, the deterioration of diets captured through our phone survey is likely to be an underestimation of the true deterioration in diet quality in Myanmar due to various factors. First, the survey struggled to capture some of the most conflict-affected areas due to limited access to cellphone and electricity, especially in Kayah. Second, our ability to survey internally displaced persons (IDPs), which rose to about 3.4 million according to reports from UNHCR[3], were limited since IDPs are in the most precarious situations and have limited access to phones, and thus are under sampled. Third, dietary diversity indicators do not capture quantities, so households and individuals could continue consuming some food groups, but in smaller quantities, with important implications for nutrient intake that are not fully captured by standard dietary diversity metrics.

To avert an even more severe 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

[3] Retrieved on November 18, 2024 from https://data.unhcr.org/en/country/mmr

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 transfers as well as BCC through phone or online sessions - where phone connections still exist - should be piloted and evaluated.

In addition, recent evidence suggests a faster deterioration of diet quality for women, especially in rural areas. This new and worrying trend of a gender gap is disconcerting given the potential threat of intergenerational transmission of inadequate nutrition by this special demographic group, and suggests not just the need for maternal and child transfers in the first 1000 days, but perhaps also the need for combinations of social protection, nutrition and gender interventions for women.

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 agricultural 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 moderate to severe hunger by state, sorted by highest prevalence in R7

	R1 (Dec 21 to Feb 22)	R2 (Apr to Jun 22)	R5 (Apr to Jun 23)	R6 (Sep to Nov 23)	R7 (Apr to Jun 24)	R7-R6	R7-R5	R7-R2
			Means (%)				*% points*	
Chin	7.1	12.9	10.2	9.5	14.4	4.9	4.3	1.5
Rakhine	6.2	4.1	7.1	4.1	8.0	3.9	0.9	3.8*
Kayah	4.5	14.0	4.1	5.4	5.2	-0.2	1.1	-8.8
Tanintharyi	5.7	10.6	5.3	7.6	5.1	-2.4	-0.2	-5.4**
Kayin	6.1	5.5	6.1	2.9	4.5	1.5	-1.6	-1
Nay Pyi Taw	6.9	4.1	4.3	6.0	4.3	-1.7	0.1	0.3
Yangon	3.9	3.2	2.3	3.6	3.3	-0.3	0.9	0
Kachin	3.8	2.9	3.4	3.8	3.2	-0.5	-0.1	0.4
Shan	3.5	3.8	3.4	4.0	2.9	-1.1	-0.5	-0.9
Ayeyarwady	6.4	4.7	2.4	2.3	2.9	0.6	0.5	-1.8**
Mon	5.7	5.5	3.2	4.2	2.6	-1.7	-0.7	-2.9*
Mandalay	3.7	2.7	2.2	2.1	2.5	0.4	0.2	-0.2
Magway	6.2	4.3	2.8	3.1	2.2	-0.9	-0.6	-2**
Sagaing	1.4	2.3	2.2	3.2	2.0	-1.3*	-0.3	-0.4
Bago	2.7	4.6	4.0	3.6	1.8	-1.8**	-2.2***	-2.8***
No. of observations	12,100	12,142	12,953	12,898	13,163			

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

Table A.2 Prevalence of low food consumption score (FCS<=38.5) by state/region, sorted by highest prevalence in R7

	R1 (Dec 21 to Feb 22)	R2 (Apr to Jun 22)	R5 (Apr to Jun 23)	R6 (Sep to Nov 23)	R7 (Apr to Jun 24)	R7-R6	R7-R5	R7-R2
			Percentages (%)				*% points*	
Kayah	33.2	38.8	25.8	23.0	52.3	29.3***	26.6***	13.5
Chin	37.8	57.9	48.2	40.7	33.9	-6.9	-14.4*	-24**
Shan	16.2	21.4	22.7	18.7	21.1	2.4	-1.6	-0.3
Magway	14.1	21.9	21.8	19.9	19.8	-0.2	-2.1	-2.2
Rakhine	10.8	18.5	17.5	12.5	16.4	3.9	-1.2	-2.2
Kachin	7.3	19.4	22.0	7.4	15.9	8.5***	-6.1*	-3.5
Bago	8.7	16.1	13.3	11.3	14.9	3.6**	1.7	-1.2
Ayeyarwady	8.3	16.1	20.5	13.7	14.0	0.3	-6.5***	-2.1
Nay Pyi Taw	7.9	12.8	18.7	13.2	13.4	0.2	-5.3	0.6
Mon	6.2	21.0	17.7	15.6	11.7	-3.9	-6**	-9.3***
Kayin	7.5	21.0	19.2	14.9	11.6	-3.3	-7.6**	-9.4***
Tanintharyi	5.9	13.2	18.6	15.3	11.0	-4.3	-7.6**	-2.2
Mandalay	9.2	13.6	13.0	14.0	9.1	-4.9***	-3.9***	-4.5***
Sagaing	7.3	13.9	16.9	13.0	8.7	-4.3***	-8.2***	-5.2***
Yangon	4.9	12.4	13.8	11.6	7.8	-3.7***	-5.9***	-4.6***
No. of obs.	12,100	12,142	12,953	12,898	13,163			

Note: Asterisks refer to the level of statistical significance in the difference in means across Rounds: *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

	R1 (Dec 21 to Feb 22)	R2 (Apr to Jun 22)	R5 (Apr to Jun 23)	R6 (Sep to Nov 23)	R7 (Apr to Jun 24)	R7-R6	R7-R5	R7-R2
			Means (%)				*% points*	
Cereals/grains/roots	99.3	98.8	99.4	99.6	99.2	-0.5**	-0.2	0.3
Beans	55.0	53.3	51.3	52.3	55.6	3.3**	4.2***	2.2*
Nuts or seeds	43.6	38.4	36.7	36.1	36.9	0.7	0.2	-1.5
Milk and dairy products	15.9	17.0	11.4	13.7	13.1	-0.6	1.7**	-4.0***
Egg	50.0	47.8	50.1	49.3	53.0	3.7***	2.9**	5.3***
Meat and Fish	89.3	84.0	84.6	85.5	89.1	3.7***	4.6***	5.1***
Other fruits	38.9	52.6	54.3	40.9	53.7	12.8***	-0.6	1.1
Vit-A rich fruit/vegetables	47.4	26.9	27.8	33.5	29.7	-3.7***	1.9*	2.9**
Dark green vegetables	85.0	85.5	85.4	82.8	86.0	3.2***	0.5	0.4
Other vegetables	82.1	74.2	73.9	75.4	74.8	-0.6	0.9	0.6
No. of observations	6,029	5,984	6,226	6,272	6,008			

Note: Asterisks refer to the level of statistical significance in the difference in means across Rounds: *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

	R1 (Dec 21 to Feb 22)	R2 (Apr to Jun 22)	R5 (Apr to Jun 23)	R6 (Sep to Nov 23)	R7 (Apr to Jun 24)	R7-R6	R7-R5	R7-R2	Diff: R7 Male – Female
			Means (%)				*% points*		
Cereals/grains/roots	99.4	98.9	99.4	99.6	99.0	-0.6	-0.3*	0.1	0.1
Beans	52.6	52.0	46.8	48.7	52.1	3.4***	5.4***	0.2	3.4***
Nuts or seeds	44.3	38.1	35.1	34.9	36.5	1.6	1.4	-1.6	0.4
Milk and dairy products	16.8	16.6	12.5	13.7	13.5	-0.1	1.0	-3.0***	-0.5
Egg	55.0	46.4	47.9	45.7	51.6	5.9	3.6***	5.1***	1.5
Meat and Fish	88.6	78.7	81.4	82.1	87.0	4.9**	5.6***	8.3***	2.1***
Other fruits	42.5	52.0	52.9	40.4	52.7	12.3	-0.3	0.7	1.0
Vit-A rich fruit/vegetables	51.0	25.1	27.9	32.6	27.3	-5.3**	-0.6	2.1**	2.5**
Dark green vegetables	83.5	82.9	83.7	80.6	83.5	2.9***	-0.3	0.5	2.5***
Other vegetables	82.0	71.4	70.9	72.0	71.5	-0.5***	0.6	0.1	3.3***
No. of observations	6,071	6,158	6,727	6,626	7,155				

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

Table A.5 Percentage of adults with inadequate diet diversity by state/region, sorted by highest prevalence in R7

	R1 (Dec 21 to Feb 22)	R2 (Apr to Jun 22)	R5 (Apr to Jun 23)	R6 (Sep to Nov 23)	R7 (Apr to Jun 24)	R7-R6	R7-R5	R7-R2
			Means (%)				*% points*	
Chin	28.2	50.8	48.7	37.8	42.9	5	-5.8	-7.9
Rakhine	34.3	33.6	35.7	43.2	36.2	-7.1	0.5	2.5
Tanintharyi	25.8	27.8	30.2	40.2	34.9	-5.3	4.7	7.1
Kayah	24.5	46.0	30.9	34.6	33.1	-1.5	2.2	-12.9
Ayeyarwady	29.5	36.6	31.9	36.8	31.0	-5.8**	-0.8	-5.6***
Kayin	28.4	34.6	34.1	38.3	30.5	-7.8	-3.6	-4.2
Mon	25.8	34.8	33.7	34.0	30.2	-3.8	-3.5	-4.6
Bago	21.7	25.4	29.7	34.5	27.4	-7.1***	-2.3	2
Shan	13.4	21.1	23.0	25.2	25.4	0.1	2.4	4.2*
Yangon	22.1	26.6	27.7	32.6	24.8	-7.8***	-2.9	-1.7
Kachin	16.0	26.6	19.9	24.1	23.5	-0.6	3.6	-3
Magway	19.5	25.9	25.9	28.7	22.9	-5.7**	-3	-3
Mandalay	15.1	18.9	21.5	21.3	16.7	-4.7**	-4.9***	-2.3
Nay Pyi Taw	10.7	25.1	19.9	23.9	16.0	-7.9*	-3.9	-9.1**
Sagaing	10.0	21.1	20.2	25.9	15.3	-10.6***	-4.9***	-5.8***
No. of observations	12,100	12,142	12,953	12,898	13,163			

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

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

	R1 (Dec 21 to Feb 22)	R2 (Apr to Jun 22)	R5 (Apr to Jun 23)	R6 (Sep to Nov 23)	R7 (Apr to Jun 24)	R7-R6	R7-R5	R7-R2
			Means (%)				*% points*	
National	21.5	29.4	29.9	33.7	27.4	-6.3***	-2.5**	-2.0*
Rural	22.8	31.4	31.5	34.7	27.9	-6.9***	-3.6**	-3.6**
Urban	18.6	24.4	26.0	31.1	26.2	-4.8**	0.2	1.8
Asset-poor (0-3)	30.3	41.8	39.5	42.6	37.4	-5.2**	-2.1	-4.5**
Asset-low (4-6)	20.1	25.8	27.6	30.8	25.3	-5.4**	-2.2	-0.5
Asset-rich (7-10)	12.3	17.7	18.6	23.5	17.0	-6.5***	-1.6	-0.7
Income poor	24.5	34.0	33.5	36.0	30.7	-5.3***	-2.8*	-3.3**
Income not poor	17.1	22.0	22.9	26.2	21.0	-5.3**	-2.0	-1.0
No. of observations	4,955	5,138	5,512	5,486	5,779			

Note: Asterisks refer to the level of statistical significance in the difference in means across Rounds: *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

	R1 (Dec 21 to Feb 22)	R2 (Apr to Jun 22)	R5 (Apr to Jun 23)	R6 (Sep to Nov 23)	R7 (Apr to Jun 24)	R7-R6	R7-R5	R7-R2
			Means (%)				*% points*	
Cereals/grains/roots	99.3	98.9	99.4	99.7	99.0	-0.6***	-0.3	0.1
Beans	51.7	50.6	45.2	47.6	50.1	2.5**	4.9***	-0.4
Nuts or seeds	42.7	37.6	34.4	35.0	36.2	1.2	1.8	-1.4
Milk and dairy products	16.3	16.9	12.3	13.0	12.9	-0.2	0.6	-4.1***
Egg	53.5	45.5	47.7	45.6	50.3	4.7***	2.6**	4.9***
Meat and Fish	87.9	78.5	80.9	81.3	86.6	5.3***	5.7***	8.1***
Other fruits	41.2	51.5	51.8	39.1	51.0	11.9***	-0.8	-0.5
Vit-A rich fruit/vegetables	49.8	24.4	27.8	31.9	26.4	-5.6***	-1.4	2.0**
Dark green vegetables	83.3	82.6	82.9	79.8	82.9	3.0***	0.0	0.3
Other vegetables	80.8	71.2	69.9	70.4	71.1	0.7	1.2	-0.1
No. of observations	4,955	5,119	5,512	5,486	5,779			

Note: Asterisks refer to the level of statistical significance in the difference in means across Rounds: *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, sorted by highest prevalence in R6

	R1 (Dec 21 to Feb 22)	R2 (Apr to Jun 22)	R5 (Apr to Jun 23)	R6 (Sep to Nov 23)	R7 (Apr to Jun 24)	R7-R6	R7-R5	R7-R2
			Means (%)				*% points*	
Rakhine	38.5	38.0	41.1	47.2	43.1	-4	2.1	5.1
Kayah	42.1	55.9	34.0	26.7	34.0	7.3	0	-21.9**
Ayeyarwady	30.1	38.3	32.5	41.3	33.9	-7.3**	1.4	-4.4
Tanintharyi	32.4	34.2	33.9	50.5	33.9	-16.7**	0	-0.4
Kachin	15.8	22.1	18.9	26.0	32.4	6.4	13.6**	10.3*
Kayin	25.0	33.4	38.3	39.6	31.8	-7.8	-6.5	-1.6
Bago	25.3	26.2	32.2	38.8	31.2	-7.6*	-1	5
Mon	25.7	38.3	36.5	35.7	29.3	-6.4	-7.2	-9*
Shan	13.7	23.2	27.2	25.2	27.7	2.5	0.5	4.5
Yangon	23.2	28.8	30.9	37.4	25.8	-11.6***	-5.1*	-3
Magway	19.0	27.9	28.7	29.6	22.9	-6.7*	-5.7	-5
Chin	23.9	53.9	51.0	35.9	22.8	-13.2	-28.3***	-31.1***
Mandalay	14.9	23.4	25.1	21.1	19.9	-1.2	-5.2*	-3.6
Nay Pyi Taw	10.4	28.6	24.4	27.2	19.8	-7.5	-4.6	-8.8
Sagaing	9.8	23.6	20.8	27.5	16.3	-11.2***	-4.5*	-7.4***

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

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

Panel A 6-23 months	R1 (Dec 21 to Feb 22)	R2 (Apr to Jun 22)	R5 (Apr to Jun 23)	R6 (Sep to Nov 23)	R7 (Apr to Jun 24)	R7-R6	R7-R5	R7-R2
			Means (%)				*% points*	
Grains	95.9	96.0	94.8	99.2	98.8	-0.4	4.0**	2.8**
Legumes & Nuts	43.5	45.7	47.9	54.4	52.2	-2.3	4.2	6.4
Milk/dairy products	41.9	40.4	28.3	39.1	34.0	-5.1	5.8	-6.4
Meat and Fish	57.7	53.6	56.4	65.8	66.8	1.0	10.4**	13.2***
Egg	49.2	52.7	47.0	49.9	64.2	14.3***	17.2***	11.5**
Vit-A rich fruits/veg	42.7	52.8	57.5	57.8	56.2	-1.6	-1.3	3.4
Other fruits/veg	69.1	60.4	55.1	60.5	67.9	7.4	12.8**	7.5*
No. of observations	339	300	344	390	382			
Panel B 6-59 months	**R1 (Dec 21 to Feb 22)**	**R2 (Apr to Jun 22)**	**R5 (Apr to Jun 23)**	**R6 (Sep to Nov 23)**	**R7 (Apr to Jun 24)**	**R7-R6**	**R7-R5**	**R7-R2**
			Means (%)				*% points*	
Grains	-	98.5	98.0	99.4	99.2	-0.3	1.2*	0.7
Legumes & Nuts	-	58.7	55.9	57.3	59.3	2.0	3.4	0.7
Milk/dairy products	-	35.0	28.0	30.0	27.0	-3.0	-1.0	-8.0***
Meat and Fish	-	70.1	73.2	75.8	78.4	2.6	5.2**	8.3***
Egg	-	54.8	55.7	55.0	59.8	4.8*	4.1*	5.0**
Vit-A rich fruits/veg	-	66.6	67.4	66.9	69.8	3.0	2.5	3.3
Other fruits/veg	-	74.7	68.3	69.9	75.6	5.7**	7.3***	1.0
No. of observations		1,094	1,170	1,185	1,225			

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

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

Panel A 6-23 months	R1 (Dec 21 to Feb 22)	R2 (Apr to Jun 22)	R5 (Apr to Jun 23)	R6 (Sep to Nov 23)	R7 (Apr to Jun 24)	R7-R6	R7-R5	R7-R2
			Means (%)				*% points*	
Grains	94.1	95.3	96.0	98.5	98.8	0.3	2.9**	3.5**
Legumes & Nuts	46.8	43.0	44.8	47.3	48.3	0.9	3.4	5.2
Milk/dairy products	37.8	35.9	30.2	32.5	31.4	-1.1	1.2	-4.5
Meat and Fish	51.6	57.2	57.2	65.2	68.3	3.2	11.2**	11.2**
Egg	51.5	38.7	49.6	49.4	60.3	10.9**	10.7**	21.6***
Vit-A rich fruits/veg	41.7	53.7	53.6	55.5	61.8	6.3	8.2*	8.2*
Other fruits/veg	67.7	56.3	58.0	56.9	67.7	10.8**	9.7**	11.4**
No. of observations	345	301	358	356	397			
Panel B 6-59 months	**R1 (Dec 21 to Feb 22)**	**R2 (Apr to Jun 22)**	**R5 (Apr to Jun 23)**	**R6 (Sep to Nov 23)**	**R7 (Apr to Jun 24)**	**R7-R6**	**R7-R5**	**R7-R2**
			Means (%)				*% points*	
Grains	-	97.6	98.4	99.5	98.9	-0.7	0.5	1.3**
Legumes & Nuts	-	58.2	57.5	55.7	59.6	3.9	2.1	1.4
Milk/dairy products	-	35.2	29.2	27.1	29.5	2.4	0.3	_5.8**
Meat and Fish	-	73.8	72.7	77.9	78.39	0.4	5.6**	4.6**
Egg	-	49.0	58.4	55.8	61.9	6.1**	-3.5	12.8***
Vit-A rich fruits/veg	-	67.2	67.7	71.1	71.9	0.8	4.1*	4.7**
Other fruits/veg	-	73.0	66.1	70.2	77.4	7.2***	11.3***	4.4**
No. of observations		998	1,182	1,190	1,174			

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

Table A.11 Percentage of households reporting reduction in food expenditure in the past 30 days by food groups

	R1 (Dec 21 to Feb 22)	R2 (Apr to Jun 22)	R5 (Apr to Jun 23)	R6 (Sep to Nov 23)	R7 (Apr to Jun 24)	R7-R6	R7-R5	R7-R2
			Means (%)				*% points*	
Reduced food expenditures?	59.2	46.8	40.2	42.9	36.7	-6.2***	-3.5***	-10.1***
Staple grains, roots & tubers	-	29.6	39.1	46.9	36.8	-10.1***	-2.3*	7.2***
Beans and nuts	-	26.6	36.0	42.3	31.4	-10.8***	-4.5***	4.8***
Dairy	-	21.6	29.6	27.1	25.6	-1.5	-4***	4.0***
Eggs	-	27.0	32.8	36.6	31.0	-5.6***	-1.8	4.0***
Meat and Fish	-	86.3	89.7	88.5	88.4	-0.2	-1.4*	2.0***
Fruits	-	38.5	49.6	59.4	48.1	-11.3***	-1.5	9.6***
Vegetables	-	31.7	42.1	50.6	38.6	-12***	-3.5***	7.0***
Sugary products	-	38.4	50.2	60.7	50.9	-9.8***	0.8	12.5***
Oils, fats and butter	-	72.8	73.1	84.0	64.6	-19.3***	-8.5***	-8.2***
Condiments	-	43.8	56.9	66.7	50.7	-15.9***	-6.2***	7***
Restaurant / takeaway meals	-	47.9	53.5	64.7	54.5	-10.2***	1.0	6.6***
No. of observations	12,100	12,142	12,953	12,898	13,163			

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

Table A.12 Household hunger scale (HHS) measures by location, poverty and asset level in Round 7

	Location		Poverty		Asset level		Diff:		
	Rural	Urban	Poor	Not poor	Asset poor	Asset rich	Rural – Urban	Income poor – not poor	Asset poor – rich
			Percentages (%)					*% points*	
HHS classifications									
Little to no hunger	97.0	96.2	95.2	99.2	93.7	99.4	0.8	-4.0***	-5.7***
Moderate hunger	2.8	3.5	4.4	0.7	5.9	0.5	-0.7	3.8***	5.4***
Severe hunger	0.2	0.3	0.3	0.1	0.4	0.1	0.0	0.2**	0.2
Moderate to severe hunger	3.0	3.8	4.7	0.8	6.3	0.6	-0.8	3.9***	5.7***
No food of any kind the house	8.2	7.1	10.9	3.2	14.3	2.3	-1.1**	7.7***	12.1***
Rarely (1-2 times) [a]	44.9	39.0	43.3	49.0	40	45.1	5.9	-5.7	-5.1**
Sometimes (3-10 times) [a]	44.9	45.6	44.3	43.4	48.4	44.3	-0.7	0.9	4.1**
Often (more than 10 times) [a]	10.2	15.4	12.4	7.6	11,6	10.6	-5.2	4.8	1.0
Went to sleep hungry	2.8	3.8	4.5	0.8	5.8	0.7	-1.1	3.7***	5.1***
Rarely (1-2 times) [a]	51.8	46.4	48.9	56.8	48.9	43.4	5.4	-7.9	5.5
Sometimes (3-10 times) [a]	42.1	46.1	44.1	39.3	45.6	50.9	-4.0	4.8***	-5.4
Often (more than 10 times) [a]	6.1	7.5	7.0	3.9	5.5	5.7	-1.4	3.1	-0.2
Went full day & night without food	1.3	1.1	1.8	0.2	2.6	0.2	0.2	1.6***	2.4***
Rarely (1-2 times) [a]	46.3	64.5	51.2	58.4	50.0	71.7	-18.2	-7.1	-21.8
Sometimes (3-10 times) [a]	46.5	28.1	42.4	20.1	45.1	26.0	18.3	22.3*	19.1
Often (more than 10 times) [a]	7.2	7.4	6.4	21.6	4.9	2.3	0.2	-15.2	2.7
No of observations	8,773	4,390	7,351	5,457	3,742	4,069			

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 Rounds: * p < 0.10, ** p < 0.05, *** p < 0.01. “Went to sleep hungry” and “went full day & night without food” refer to any household member undergoing these experiences.

Table A.13 Mean of household and community predictors by survey round

	R1 (Dec 21 to Feb 22)	R2 (Apr 22 to Jun 22)	R3 (Jul 22 to Aug 22)	R4 (Oct 22 to Dec 22)	R5 (Apr 23 to May 23)	R6 (Sep 23 to Nov 23	R7 (Apr to Jun 24)
Respondent age (in years)	38.5	38.7	37.9	38.0	39.2	39.0	41.4
Women only household	9.4	9.4	9.4	9.4	9.4	9.4	9.4
Share of dependents	47.3	43.9	44.0	43.5	44.2	45.0	44.7
Household size (number)	4.6	4.3	4.2	4.1	4.0	4.0	4.0
Primary or no education (adult)	59.4	59.3	58.9	58.8	58.9	55.8	59.4
Female	54.4	54.9	54.1	52.4	54.3	53.9	56.1
Asset poor	33.5	33.6	34.8	37.3	36.9	36.7	34.0
Asset low	39.9	40.7	40.5	39.4	39.6	40.5	40.4
Asset rich	26.6	25.7	24.7	23.3	23.5	22.8	25.6
Income-poor	46.1	52.2	57.3	61.5	57.4	68.0	60.5
Own farm income	37.0	38.5	37.7	37.8	35.5	39.5	34.3
Farm wage income	24.2	20.4	25.7	27.0	19.0	22.4	19.3
Non-farm wage income	23.7	27.5	26.0	26.0	26.2	21.9	22.5
Farm/Non-farm salary income	21.4	23.0	22.8	22.2	21.9	21.7	22.1
Own non-farm income	43.9	44.0	42.0	39.7	35.8	34.1	32.8
Other income (gifts, donations)	9.8	13.5	12.0	11.8	10.6	12.3	9.6
Household received remittance	14.9	15.9	14.4	16.1	16.5	17.5	15.6
High level of physical insecurity	18.7	19.6	22.2	23.0	21.1	23.1	22.7
Large migration into community	5.6	8.4	8.2	8.5	15.7	15.9	22.4
Community violence	6.3	7.0	8.0	8.8	9.6	10.0	9.0
Income shock	54.6	50.1	46.8	44.6	41.5	39.5	39.1
Natural shocks	10.9	11.9	13.5	11.9	11.4	14.6	12.5
Health shock	58.5	34.3	32.1	44.2	29.1	43.0	24.9
Number of observations	12,100	12,142	12,128	12,924	12,953	12,898	13,163

Note: All figures in the table are percentages unless otherwise stated.

Table A.14 Factors associated with household hunger and diet diversity, Panel random effects regression, MHWS R1 – R7

	(1) Moderate/ severe hunger	(2) Low FCS	(3) Inadequate diet diversity (adult)	(4) Inadequate diet diversity (Reproductive age women)	(5) Inadequate diet diversity (children 6-59 months)
Respondent age (years)	-0.000***	-0.001***	-0.003***	-0.003***	-0.005***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Women only household	0.002	0.027***	0.019***	0.017**	-0.035*
	(0.003)	(0.006)	(0.007)	(0.008)	(0.018)
Share of dependents	0.009***	0.029***	0.039***	0.045***	0.098***
	(0.003)	(0.005)	(0.007)	(0.010)	(0.021)
Household size	0.001**	-0.005***	-0.003***	-0.003	-0.002
	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)
Primary or no education (adult)	0.017***	0.041***	0.053***	0.049***	0.038***
	(0.002)	(0.003)	(0.004)	(0.006)	(0.008)
Female (=1)	-0.001	-0.010***	-0.008**		-0.002
	(0.002)	(0.003)	(0.004)		(0.008)
Asset poor vs asset rich	0.044***	0.106***	0.122***	0.127***	0.102***
	(0.002)	(0.004)	(0.005)	(0.008)	(0.011)
Asset low vs asset rich	0.011***	0.036***	0.043***	0.047***	0.036***
	(0.001)	(0.003)	(0.004)	(0.006)	(0.009)
Income-poor vs not-poor	0.012***	0.044***	0.043***	0.042***	0.030***
	(0.001)	(0.002)	(0.003)	(0.005)	(0.007)
Own farm vs other income	-0.021***	-0.034***	-0.053***	-0.064***	-0.038***
	(0.002)	(0.003)	(0.004)	(0.006)	(0.009)
Farm wage vs other income	0.010***	0.030***	0.006	-0.001	-0.003
	(0.002)	(0.004)	(0.004)	(0.007)	(0.009)
Non-farm wage vs other income	0.011***	0.005	0.002	-0.000	0.002
	(0.002)	(0.003)	(0.004)	(0.006)	(0.009)
Farm/Non-farm salary vs other income	-0.006***	-0.017***	-0.013***	-0.011*	-0.012
	(0.002)	(0.003)	(0.004)	(0.006)	(0.009)
Own non-farm vs other income	-0.007***	-0.033***	-0.026***	-0.029***	-0.027***
	(0.001)	(0.003)	(0.004)	(0.006)	(0.008)
Household received remittance (=1)	-0.007***	-0.025***	-0.025***	-0.020***	-0.016*
	(0.002)	(0.003)	(0.004)	(0.006)	(0.009)
High level of physical insecurity (=1)	0.010***	0.018***	0.006	0.010	-0.006
	(0.002)	(0.003)	(0.004)	(0.006)	(0.008)
Large migration into community (=1)	0.009***	0.001	-0.013***	-0.018**	-0.012
	(0.002)	(0.003)	(0.004)	(0.007)	(0.010)
Community violence (=1)	0.009***	-0.001	0.006	0.010	-0.009
	(0.003)	(0.004)	(0.005)	(0.009)	(0.012)
Income shock (=1)	0.007***	0.012***	0.013***	0.015***	0.016**
	(0.001)	(0.002)	(0.003)	(0.005)	(0.007)
Natural shocks (=1)	0.024***	0.013***	0.000	0.007	0.016
	(0.002)	(0.004)	(0.004)	(0.007)	(0.010)
Health shock (=1)	0.012***	0.001	-0.005	-0.000	-0.005
	(0.001)	(0.002)	(0.003)	(0.005)	(0.007)
Low community wages vs high	0.015***	0.018***	0.006	0.013*	0.010

	(0.002)	(0.003)	(0.004)	(0.007)	(0.010)
Medium community wages vs high	0.005***	0.000	-0.000	0.001	0.004
	(0.002)	(0.003)	(0.004)	(0.006)	(0.009)
Price tercile low vs high	0.002	0.001	-0.005	-0.000	-0.003
	(0.001)	(0.003)	(0.004)	(0.006)	(0.009)
Price tercile medium vs high	0.000	0.002	0.003	0.008	-0.010
	(0.001)	(0.003)	(0.004)	(0.006)	(0.008)
Yesterday was a special day (=1)	0.000	-0.013***	-0.033***	-0.034***	-0.018*
	(0.002)	(0.003)	(0.004)	(0.007)	(0.010)
Rural residence (=1)	-0.012***	0.016***	0.001	-0.001	0.003
	(0.002)	(0.003)	(0.005)	(0.007)	(0.010)
Kachin	-0.021***	0.008	0.012	0.007	0.019
	(0.007)	(0.011)	(0.014)	(0.022)	(0.030)
Kayah	-0.003	0.083***	0.034*	0.026	0.035
	(0.010)	(0.017)	(0.018)	(0.028)	(0.035)
Kayin	-0.003	0.014	0.096***	0.070***	0.094***
	(0.008)	(0.011)	(0.015)	(0.022)	(0.032)
Chin	-0.004	0.220***	0.132***	0.115***	0.105***
	(0.009)	(0.016)	(0.018)	(0.026)	(0.036)
Sagaing	-0.031***	-0.015	-0.029**	-0.028	0.042
	(0.006)	(0.009)	(0.011)	(0.018)	(0.026)
Tanintharyi	0.019**	0.003	0.107***	0.115***	0.099***
	(0.009)	(0.011)	(0.015)	(0.024)	(0.032)
Bago	-0.007	0.005	0.060***	0.054***	0.108***
	(0.006)	(0.009)	(0.012)	(0.018)	(0.027)
Magway	-0.020***	0.038***	0.012	0.006	0.082***
	(0.007)	(0.010)	(0.012)	(0.019)	(0.028)
Mandalay	-0.019***	0.002	-0.008	-0.011	0.041
	(0.006)	(0.009)	(0.011)	(0.018)	(0.026)
Mon	0.003	0.032***	0.100***	0.101***	0.099***
	(0.007)	(0.010)	(0.014)	(0.021)	(0.031)
Rakhine	-0.013*	0.003	0.098***	0.098***	0.077**
	(0.007)	(0.011)	(0.014)	(0.021)	(0.030)
Yangon	-0.007	0.016*	0.083***	0.085***	0.082***
	(0.006)	(0.009)	(0.011)	(0.018)	(0.026)
Shan	-0.017***	0.049***	-0.003	-0.008	0.045*
	(0.006)	(0.009)	(0.011)	(0.018)	(0.026)
Ayeyarwady	-0.022***	-0.008	0.094***	0.095***	0.082***
	(0.006)	(0.009)	(0.012)	(0.018)	(0.027)
Round 2	-0.001	0.067***	0.055***	0.074***	-0.053***
	(0.002)	(0.004)	(0.005)	(0.008)	(0.019)
Round 3	-0.003	0.064***	0.059***	0.076***	-0.071***
	(0.002)	(0.004)	(0.005)	(0.008)	(0.019)
Round 4	-0.008***	0.041***	0.029***	0.039***	-0.092***
	(0.002)	(0.004)	(0.005)	(0.008)	(0.019)
Round 5	-0.010***	0.063***	0.045***	0.067***	-0.056***
	(0.002)	(0.004)	(0.005)	(0.008)	(0.020)
Round 6	-0.012***	0.030***	0.077***	0.097***	-0.086***
	(0.002)	(0.004)	(0.005)	(0.008)	(0.020)
Round 7	-0.013***	0.014***	0.030***	0.049***	-0.101***

	(0.002)	(0.004)	(0.005)	(0.008)	(0.020)
Constant	0.028***	0.021*	0.197***	0.175***	0.300***
	(0.007)	(0.011)	(0.015)	(0.024)	(0.037)
Observations	85,069	85,069	85,069	36,079	14,256
Number of ID	31,266	31,266	31,266	14,377	6,916

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

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