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Myanmar Household Welfare Survey Round Two: Note on sample characteristics and weighting

Key Findings

The second round of the MHWS was carried out between April 7th, 2022, and June 24th, 2022. In the second round, 12,142 households responded to the survey, 7,786 households were interviewed in both the first and second round, 4,356 households were added in the second round, while 4,314 households dropped out of the sample after the first round. Issues with blackouts and ongoing conflict made it difficult to collect data from rural lower-educated households. After weighting, the sample is not statistically different from the round one sample, in terms of household location, percent farming households, and percent lower-educated households.

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Introduction

The population of Myanmar is becoming increasingly vulnerable as a result of political instability, armed conflict, COVID-19, economic disruptions, price volatility, and weather. The collection of socio-economic data is essential for understanding the scope of these issues, their impact on Myanmar household welfare, and efficiently targeting scarce resources to address them. At the same time, given this unstable environment, the collection of face-to-face data is difficult. Therefore, MHWS was implemented as a nationally representative phone survey with the objective of collecting quarterly data on household and individual welfare indicators, including, poverty, food security, dietary quality, subjective wellbeing, and coping strategies. Conflict has also made it difficult to implement phone surveys as respondents are reluctant to answer their phones and/or disclose information.

Phone surveys can have several potential shortcomings including representativeness, enumerator trust, and measurement error. Representativeness could be an issue because only residents with working mobile phones can respond to the survey. Cell-phone owners are more likely to be better off than non-cell phone owners as well as live in less remote areas. To help ensure representativeness of our sample we set targets for data collection from rural, female, lower-educated, and farming households. We then weighted the sample to ensure adequate representativeness for these groups as well as poorer more remote households not covered by the sample targets.

Enumerator trust and measurement error are also important issues with phone surveys, as without a face-to-face connection, it is harder for the enumerator and respondent to build confidence in one another and ask clarifying questions. To minimize measurement error, we called back all households for whom answers were inconsistent with previous responses or common practice.

While there are weaknesses of phone surveys, there are also advantages, especially for Myanmar. Previous face-to-face socioeconomic surveys in Myanmar failed to reach many townships across the country either due to conflict or remoteness. R1 and R2 of MHWS includes 310 townships out of 330 (or 324 if excluding townships in the Wa Self-Administered Division that we did not intend to survey), which is more geographical coverage than the 2017 MLCS and the 2015-2016 DHS, the two most recent socioeconomic surveys.

In this note, we provide details on the data collection of the second round of MHWS. First, we discuss panel participation by households and members as well as how the sample changed in terms of location and gender across rounds. Second, we present sample sizes by round, state/region, and urban/rural areas. This is followed by an analysis of the characteristics of the replacement households versus the attrition households. Third, we discuss the calculation of weights for R2. Finally, we present summary statistics for the unweighted and weighted sample for the key weighting factors including farming, education, and household type.

Data collection and Sample Design of MHWS

The second round of MHWS data was collected between April 7th, 2022, and June 24th, 2022. The intention of MHWS was to create a representative survey at the national, state/region, and rural/urban level for the Myanmar population living in conventional housing. The number of households targeted in each state/region was proportional to its population size, with an oversampling in the two smallest states. An overview of the sampling design and the target sample sizes by State/Region can be found in MAPSA (2022).

MHWS was carried out in collaboration with Myanmar Survey Research (MSR), a private survey research company based in Myanmar with a database of 280,274 phone numbers of adults who consented to be contacted in phone surveys. To obtain a randomized nationally representative sample, a master database was constructed in which all phone numbers were stratified at the township level, so that the number of phone numbers in each township was proportional to the population size of each township (from the 2014 Census) (DoP, 2015). Households were selected randomly in each township. We chose to randomly sample at the township level to minimize oversampling of well-connected and/or wealthier townships. Finally, to ensure that women, famers, less educated, and more remote individuals were not under sampled, minimum targets by state were set for women (half of all respondents), rural location, farming livelihood, and education level (Table A.1).

Out of 330 townships, 20 do not appear in our sample, the same townships not enumerated in R1 (Figure 1, Table A.2). Out of the 20 townships not enumerated, six are in WA SAZ (Shan state), which we are not able to enumerate. The other six townships in Shan state that were not enumerated have ongoing intense conflict, making it difficult for the survey team to collect phone numbers from those areas. Finally, the six townships not enumerated in Kachin are very remote and home to very few people. In total, the townships not enumerated contain 1.6 percent of Myanmar's population according to the 2019 Intercensal survey (ICS) data.

Figure 1. Interviews conducted in the second round of MHWS, by township

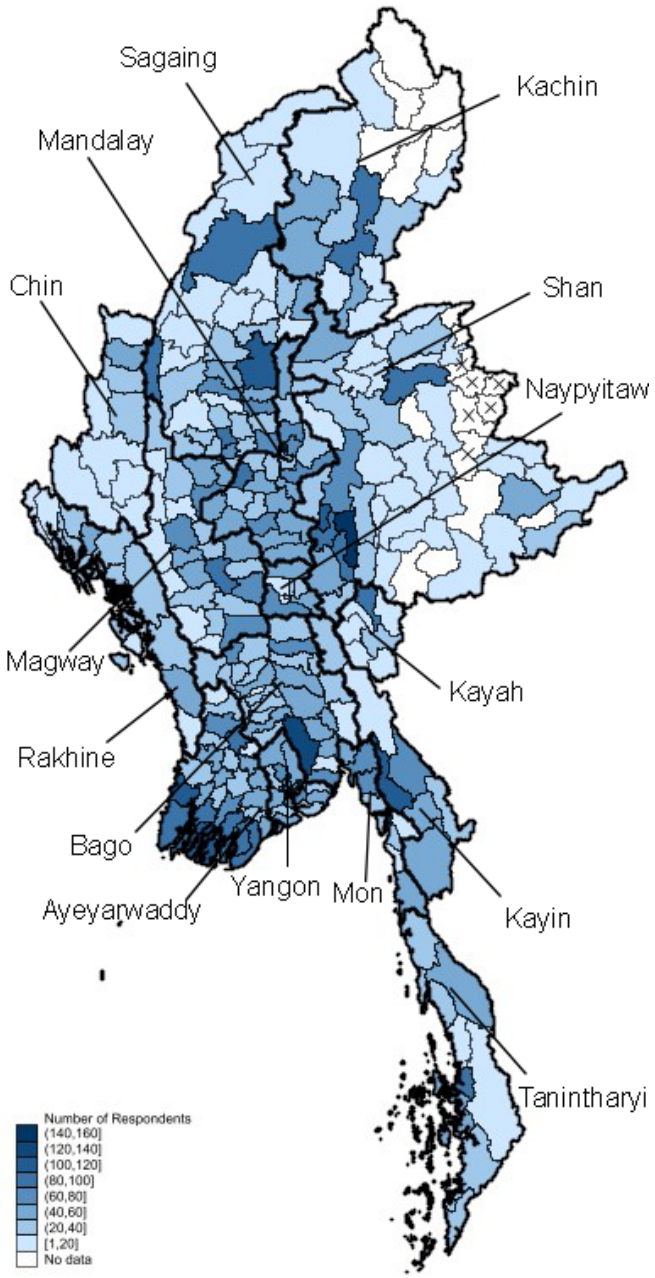

Table 1 shows the number of respondents by state/region and rural/urban area for the first and second rounds of MHWS. Like in R1, in R2 the survey fell short of hitting target sample sizes for Chin, Kayah, and Shan state (Table A.1). In R2 five fewer households were surveyed in Kayah. Further, while one and nine additional households were surveyed in Chin and Shan state, respectively, this increase still was not sufficient to reach the desired targets. At the rural/urban level there were fewer rural observations in R2 compared with in R1. While in R1 the target rural populations for Chin and Kayah were not met, in R2, even fewer rural households were interviewed in these states, increasing the gap from the target level. Fewer rural households were interviewed in Kayin and Rakhine as well. In Chin and Rakhine, this was mainly due to limited internet and phone access from power outages. In Kayin, Kayah, Sagaing, and Magway, in addition to issues with blackouts, there was also ongoing intense conflict during the data collection period. Phones were powered off in many of these regions. Further, some respondents who did answer their phones were

nervous to mention their exact locations. While this impacted rural data collection in Kayin and Kayah, sample targets were still achieved in Sagaing and Magway.

Table 1. MHWS observations for R1 and R2 by State/Region

	National		Rural		Rural %		
	R1	R2	R1	R2	R1	R2	
Ayeyarwady	1,538	1,540	1,322	1,339	86	87	
Bago	1,169	1,168	921	916	79	78	
Chin	159	160	108	98	68	61	
Kachin	385	396	229	234	59	59	
Kayah	132	127	71	47	54	37	***
Kayin	354	355	276	256	78	72	*
Magway	963	959	822	820	85	86	
Mandalay	1,483	1,481	1,024	1,023	69	69	
Mon	480	480	324	317	68	66	
Nay Pyi Taw	289	293	206	205	71	70	
Rakhine	526	532	441	423	84	80	*
Sagaing	1,312	1,308	1,084	1,084	83	83	
Shan	1,156	1,165	851	838	74	72	
Tanintharyi	328	333	231	235	70	71	
Yangon	1,826	1,845	581	590	32	32	
National	12,100	12,142	8,491	8,425	70	69	

Source: Authors' estimates from MHWS
Note: T-tests show no significant differences between the sample sizes at the national level

The second round of MHWS intended to interview the same households that participated in R1, but with a provision to replace non-answering respondents with new respondents. In the second round, 12,142 households responded to the survey. Of those households, 7,786 households were interviewed in both the first and second round. 4,356 households were added in the second round, which replaced the 4,314 households that dropped out of the sample after the first round. Out of the attrition households, 69.3 percent refused to answer the survey again, while 30.6 percent did not answer their phones after six call attempts spread out over four to five days.

Table 2 is a breakdown of the households by round and whether they remained in the panel. Columns 1 and 2 contain R1 and R2 households that were interviewed in both rounds. They are divided into two columns to show the households that moved to a new state/region after the first round of the survey. Column 3 contains households that only participated in R1 of the survey (attrition households), while column 4 contains households that joined the survey in R2 (replacement households).

To replace the households that dropped out of the survey, the survey team called 25,842 new households. The households were selected randomly from the phone database, in the same townships as the attrition households, and retained if they had similar characteristics to the attrition households in terms of urban/rural, gender, farming status, and education level. If the survey team could not meet those criteria, they called households with similar characteristics from the same state/region.

Only 16.8 percent of new households called responded to the survey. This was overwhelmingly because phones were not answered (72.1 percent of calls). Only 4.1 percent of new households called refused to take part in the survey. Phone connection and power outages were the main reason that phones were not answered. This was a large issue for R2 data collection, especially in Kayah, Shan, and Saigaing States. Blackouts not only prevented many households from charging their phones, but also interrupted interviews, if the power was cut-off during the call.

In the end, every state/region had either the same or slightly more observations in R2 compared with R1. Some states, however, lost respondents in R2 because some of the households in the panel moved. Column 6 shows the overall change between R1 and R2, the difference between column 6

and column 5 is the number of households who moved. In Kayah, for example, where the sample size was already low, although three households were added, eight households moved, so overall the state lost five observations. Further, despite adding no new households in Yangon in R2, the region gained 19 households after R1 households moved to the region in R2.

Table 2. MHWS observations for panel rounds by state/region

	R1	R2	Attrition HHs	Replacement HHs	Replacement-attrition HHs	Overall
Ayeyarwady	969	964	569	576	7	2
Bago	700	699	469	469	0	-1
Chin	95	92	64	68	4	1
Kachin	237	240	148	156	8	11
Kayah	61	53	71	74	3	-5
Kayin	218	217	136	138	2	1
Magway	683	678	280	281	1	-4
Mandalay	1,032	1,030	451	451	0	-2
Mon	283	280	197	200	3	0
Nay Pyi Taw	210	211	79	82	3	4
Rakhine	355	356	171	176	5	6
Sagaing	809	803	503	505	2	-4
Shan	694	703	462	462	0	9
Tanintharyi	179	180	149	153	4	5
Yangon	1,261	1,280	565	565	0	19
National	7,786	7,786	4,314	4,356	42	42

Source: Authors' estimates from MHWS

While in most of the panel households the same member was interviewed, in 336 households (2.2 percent), a new member was interviewed in R2. Table 3 shows the gender and the position of the respondent within the household by round and member. Overall, 50.5 percent of the sample for R1 and R2 is female. Sixty-four percent of new respondents in panel households were female compared with 54.2 percent of previous respondents in R1. Across rounds, the position of the respondent within the household remained consistent; 40.8 percent of respondents are heads, 25.2 percent are spouses, 27.6 percent are children of the head/spouse, and 6.6 percent are a different household member. At the same time, new respondents among panel households were less likely to be the head and more likely to be a spouse or child.

Table 3. Percent of MHWS respondents by gender and position in the household by round

	Pooled sample	Panel	Attrition HHs	Replacement HHs	Panel, R1 mem	Panel, R2 mem
Male	49.2	50.4	49.1	48.1	45.8	39.6
Female	50.8	49.6	50.9	51.9	54.2	60.4
Head	40.1	43.6	37.0	38.1	37.8	29.2
Spouse	24.9	25.8	24.5	23.3	29.8	31.8
Child	28.3	24.6	30.6	32.3	25.9	29.5
Other	6.7	6.0	8.0	6.3	6.5	9.5
Observations	16,456	7,450	4,314	4,356	336	336

Source: Authors' estimates from MHWS

We explore whether the R2 replacement households have similar characteristics to the R1 attrition households for the farming and low-level education sampling targets (Table 4). Like in R1, meeting the farming sampling target in R2 was not an issue. As a result, there are no statistical differences in the percent of farming households by state between attrition and replacement

households in rounds one and two (column 3). Meeting the low-education sampling target, however, was more difficult. In R2, there were 7 percent fewer low-educated households compared to in R1. Data was collected from fewer low-educated households in Bago, Chin, Kayin, Sagaing, Shan, and Tanintharyi. Often people with less education have less access to mobile phones, tend to answer their phone less (lack of time), and refuse to participate in surveys due to lack of confidence, lack of time, and language barriers. In states/regions with non-Burmese speaking populations, less educated people are also less likely to speak Burmese, so the language barrier prevents these individuals from participating in the survey.[1]

Table 4. MHWS attrition and replacement households-percent farmers and low-educated

	Farming household criterion		Low-education household criterion	
	Attrition HHs	Replacement HHs	Attrition HHs	Replacement HHs
Ayeyarwady	47.3	51.2	58.2	52.6*
Bago	48.8	51.6	48.4	36.7***
Chin	57.8	61.8	23.4	11.8*
Kachin	45.3	46.2	37.2	34.6
Kayah	66.2	59.5	23.9	14.9
Kayin	52.2	49.3	56.6	39.9***
Magway	47.1	48.8	55.7	55.5
Mandalay	39.7	39.9	45.0	42.6
Mon	39.1	39.5	50.3	49.5
Nay Pyi Taw	16.5	17.1	40.5	43.9
Rakhine	52.0	50.0	59.1	50.6
Sagaing	67.8	67.7	51.5	43.4***
Shan	73.4	68.8	50.6	43.1**
Tanintharyi	38.9	37.3	44.3	31.4**
Yangon	14.7	13.3	32.0	26.7*
National	47.1	47.1	47.6	41.1***
Observations	4,314	4,356	4,314	4,356

Source: Authors' estimates from MHWS
Note: T-tests show no significant differences between percent of farming households by round.

Sample weights

To ensure that the sample is representative at the national state/region and rural/urban level, we developed household-level, population-level, and adult-level weights, using the household-level weights as the basis for the other two. Details of the weighting technique can be found in MAPSA (2022). First, households were weighted based on the 2019 ICS information on the number of households in each urban/rural location of each state/region (DoP 2020). Second, farm households were adjusted for oversampling by ensuring that the percentage of farm households was equivalent to the percentage of farm households found in MLCS (CSO 2017). Third, to adjust for oversampling of more educated respondents, households were reweighted based on the share of adults with low education in each rural/urban and state/region in MLCS. Finally, to minimize selection bias of wealthier households, we used the maximum entropy approach and added constraints for agricultural land owned, housing type, and women-adult-only households. We developed population

[1] Myanmar has 135 officially recognized ethnic groups who speak 118 different languages.

weights by multiplying the household weight with the size of the household. Because household sizes were smaller in R2, we added a constant to household size for new households to ensure household sizes were consistent with those of round one.

Table 5 shows the mean number of household members by age in R1 and R2 for all, panel, and new households prior to adding the constant. Overall, households in R2 had significantly fewer household members; 4.38 compared with 4.68 in R1. This is primarily because replacement households had an average of 4.3 household members compared with R1 attrition households who had 4.8 household members. Replacement households were significantly smaller in every age category.

Table 5. Mean number of family members in MHWS by round and panel

	R1	R2	Panel R1	Panel R2	Attrition HHs	Replacement HHs
Child <5y	0.32	0.26***	0.29	0.27***	0.36	0.25***
Child 5-14y	0.74	0.68***	0.73	0.70**	0.77	0.64***
Adult 15-64y	3.33	3.15***	3.30	3.18***	3.38	3.11***
Senior >= 65y	0.29	0.29	0.29	0.30	0.30	0.27***
Total HH mem	4.68	4.38***	4.61	4.44***	4.80	4.26***
Observations	12,100	12,142	7,786	7,786	4,314	4,356

Source: Authors' estimates from MHWS

However, in R2, panel households also reported having fewer household members due to the way the questionnaire was worded. The R1 survey asked the respondent to count the number of members in four age groups while in the second round, a general roster was added to capture the information about all household members. Because of this change, 7.4 percent of households reported having made a mistake in the number of household members reported in R1. In R2, these households reported on average 0.17 fewer household members. While some measurement error did contribute to the smaller family sizes in R2 compared to R1, most of the change was from households who lost a family member. In R2, 4.5 percent of households gained new members, while 8.4 percent of households lost members. Of the 4.5 percent of households that gained members, 18.7 percent gained a member from childbirth or adoption. Households that lost members went from having a mean family size of 6.03 in R1 to 4.33 in R2. In 72 percent of cases, households had fewer children because the child moved to a different household. These households also had fewer adults because they relocated to different households. In sum, of the total household members lost in R2, 14 percent were a result of measurement error, while 86 percent were a result of relocation of household members and/or death.

Table 6 compares the unweighted and weighted sample for households with low-educated adults and households who farm. First, in the unweighted sample in R2 there are fewer low-educated households compared with R1. Additional households in R2 tended to be more educated than attrition households from R1. Once the observations are weighted, apart from Kayah state, there are no differences between the percent of households with low-educated adults by state between rounds. In Kayah in R2, only 39.4 percent of the weighed sample is low-educated compared with 57.1 percent in R1 because only 15.6 percent of respondents (46 households) in Kayah reported having less education. Because of this, it is very hard for the sample weight to meet the low-education target, while also meeting the location, farming, and wealth constraints. There were no statistically significant differences in number of farming households sampled between rounds both among the naïve sample and after weighting.

Table 6. Percent of low-educated and farming households, unweighted and weighted, MHWS R1 & R2

	Unweighted				Weighted			
	Low level education criterion		Farming household criterion		Low level education criterion		Farming household criterion	
	R1	R2	R1	R2	R1	R2	R1	R2
Ayeyarwady	53.4	50.5 *	47.2	48.4	65.6	66.0	43.5	41.8
Bago	48.8	43.5 ***	49.4	50.3	64.5	64.3	41.0	41.6
Chin	18.2	13.8	60.4	61.3	59.4	57.6	64.5	66.4
Kachin	38.7	37.1	40.8	41.2	55.4	55.6	37.8	40.7
Kayah	19.7	15.7	61.4	59.1	57.1	39.4***	59.2	65.8
Kayin	54.8	48.2 *	49.4	48.5	68.4	71.3	40.5	41.9
Magway	55.1	53.8	52.4	53.3	61.6	61.3	47.0	46.0
Mandalay	44.6	43.2	42.7	42.7	55.3	54.5	36.6	36.5
Mon	46.9	46.7	35.2	35.4	60.2	60.7	27.5	27.6
Nay Pyi Taw	42.6	43.7	30.8	30.7	57.6	57.4	26.3	25.9
Rakhine	56.3	51.9	46.6	45.9	68.5	68.6	41.9	40.6
Sagaing	54.0	50.2 *	63.6	63.7	61.2	60.6	59.2	58.2
Shan	51.6	47.3 **	70.2	68.1	71.6	70.9	62.7	66.6
Tanintharyi	40.5	34.2 *	38.1	37.2	66.8	64.7	35.9	33.9
Yangon	30.3	28.6	13.2	13.2	37.8	38.1	8.9	8.5

Source: Authors' estimates from MHWS

Table 7 compares other socioeconomic indicators used as weighting constraints including farm size and household characteristics. The weights in R1 and R2 increase the percent of households with no acres cultivated from 52.8 percent of the sample to 63.3 percent. The percent of farmers in every acreage category is therefore reduced after weighting, with the largest decrease being 5.6 percent for large farmers (farmers with more than 7.5 acres). There is no difference for unweighted or weighted percentage of farms by land size between the rounds.

On the other hand, there are some statistically significant differences in the unweighted and weighted sample in terms of housing characteristics. In the second round, fewer households lived in 1Y huts, (a hut that will last about one year) and even after weighting, fewer households lived in huts. But individuals who live in huts constitute a very small percentage of the Myanmar population. In R2 compared to R1, fewer households owned their houses, more rented, less squatted, and more lived in camps or shelters. After weighting, the only significant difference between the rounds, is a slightly smaller percent of the population squatting.

Table 7. Percent of households by land size and housing, unweighted and weighted, MHWS R1 & R2

	Weighted		Unweighted	
	R1	R2	R1	R2
Land size				
0 acre	52.3	52.8	63.3	63.3
0-2 acre	11.2	11.3	9.8	9.8
2-4 acre	9.5	9.2	8.1	8.1
4-7.5 acre	10.8	10.9	8.5	8.5
>7.5 acre	16.2	15.9	10.3	10.3
House type				
Wood/bamboo house	65.0	64.9	66.5	67.1

Semi-puca house	15.3	16.0	13.7	13.9
Bungalow	13.0	12.9	11.8	11.5
Apartment	4.2	4.2	5.2	5.3
Hut (2-3y)	1.6	1.4	1.9	1.6
Hut (1y)	0.9	0.5***	0.9	0.6**
Tenure status of dwelling				
Owned/free	91.5	90.6**	90.6	90.0
Rented	7.9	8.8**	8.8	9.5
Squatter	0.3	0.2**	0.3	0.2**
Camp, shelter	0.3	0.4*	0.2	0.3

Source: Authors' estimates from MHWS

Conclusion

The MHWS is a socioeconomic phone survey with the aim of being representative at the national, state/regional, and urban/rural levels. Because phone ownership and phone access are not universal, there may be underrepresentation of lower income, lower educated, and more remote households. We took three main steps to ensure representativeness. First, we sampled from a large and geographically dispersed database of phone numbers at the township level. Second, we used a target-based sampling strategy to achieve gender parity as well as obtain quotas of rural, farming, and low-educated households. Third, we created sampling weights to further improve national and subnational representativeness.

In MAPSA (2022), we demonstrate that for R1, after carrying out these three steps our weighted sample closely matches that of 2017 MLCS for key demographic and wealth indicators. In this note, we show that we carried out these three steps for R2, and our weighted sample was very similar to that of R1 for the same key demographic and wealth indicators. But because of power outages, disruptions to phone service, and conflict, it was hard to reach some of our previously surveyed households. Some households also refused to respond to the survey again so only 64 percent of R1 households remained in the panel. At the same time, it was hard to obtain new households for the survey; only 29.1 percent of households called answered their phones. Despite these shortcomings, in R2 we still continued to have widespread geographic coverage, surveying 310 out of 330 townships.

In R2 the survey team struggled to meet rural and low-education quotas. Because of the aforementioned reasons, as well as, because low-educated individuals are less likely to have a phone, respond to their phone, and have the time, confidence, and language skills to take part in the survey, fewer lower-educated individuals were surveyed in R2 compared to R1. After weighting, however, the percent of rural households, percent of farming households, and percent low-educated households (with the exception of Kayah State) showed were not statistically different between R1 and R2. In terms of other welfare indicators, such as farming, land size, housing type, and housing tenure, the R2 weighted sample closely matches that of R1.

In sum, while our sample for R2 performs similarly to that of R1, there still may be underrepresentation of more remote individuals in the survey. In this respect, however, our phone survey performs better in terms of geographic spread compared to previous face-to-face surveys. Where our phone survey struggles to be as representative as a face-to-face survey is in terms of representation of lower educated respondents and older respondents. Despite these limitations, MHWS is still representative at the national level and collecting high-frequency socioeconomic data remains critical for identifying vulnerable households and monitoring changes in livelihoods, welfare, and agricultural production across Myanmar.

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Appendix

Table A.1. Respondent characteristic targets for each state and region, in percentage of respondents

State/ Region	Gender (female)	Location (rural)	Education level (low)	Livelihood (farming)
Ayeyarwady	50	86	54	47
Bago	50	78	52	46
Chin	50	79	50	66
Kachin	50	64	42	43
Kayah	50	75	47	60
Kayin	50	78	57	45
Magway	50	85	56	52
Mandalay	50	65	49	41
Mon	50	72	52	33
Nay Pyi Taw	50	68	43	30
Rakhine	50	83	58	46
Sagaing	50	83	54	63
Shan	50	76	60	73
Tanintharyi	50	76	50	40
Yangon	50	30	31	13

Source: Authors

Table A.2. Township characteristics of townships not enumerated in MHWS

State	Township	Population size [a]	Number of households [a]	Sample target [b]	Comment	Enumerated in MLCS?
Shan (North)	Pangsang	88,732	16,457	26	Wa SAZ	No
Shan (North)	Narphan	114,724	16,474	29	Wa SAZ	No
Shan (North)	Pangwaun	96,940	13,969	24	Wa SAZ	No
Shan (North)	Mongmao	69,364	10,445	18	Wa SAZ	No
Shan North)	Hopang	59,438	11,216	15	Wa SAZ	Yes
Shan (North)	Matman	19,050	3,318	5	Wa SAZ	No
Shan (North)	Konkyan	59,565	9,665	15	Kokang SAZ	No
Shan (North)	Mongyai	56,768	13,328	15		Yes
Shan (South)	Langkho	38,344	9,548	10		Yes
Shan (South)	Mongpan	23,503	5,421	6		No
Shan (East)	Mongping	65,886	13,299	17		No
Shan (East)	Monghpyak	28,235	6,155	8		Yes
Shan (East)	Mongyawng	75,413	17,196	20		No
Kachin	Injangyang	1,420	285	0	Low population	No
Kachin	Tsawlaw	6,499	1,073	2	Low population	No
Kachin	Sumprabum	2,405	479	1	Low population	No
Kachin	Machanbaw	8,353	1,719	2	Low population	Yes
Kachin	Nawngmun	7,025	1,212	2	Low population	No
Kachin	Khaunglanhpu	11,635	1,711	3	Low population	No
Yangon	Cocokyun	1,172	351	0	Low population	No
Total not enumerated (nationwide) [c]		834,471	153,321	218		
Total (nationwide) [c]		51,144,607	11,162,510	12,790		

Share of total not enumerated [c]	1.63%	1.37%	1.70%
Total not enumerated (target) [c]	386,223	81,442	101
Total (target) [c]	50,696,359	11,090,631	12,673
Share of target not enumerated [c]	0.76%	0.73%	0.79%

Notes: a Numbers based on Census 2014, population in conventional households only. b These are sample targets proportional to population size. SAZ=Special Administered Zone. c Total number of persons in conventional households and households based on ICS 2019, this did not exclude townships from Wa SAZ
Source: DoP (2015), DoP and UNFPA (2020), Authors

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