



Impact Assessment Addressing Climate Change Risks on Water Resources and Food Security in the Dry Zone of Myanmar

Baseline Report

SUMMITED BY



MYANMAR SURVEY RESEARCH

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1 INTRODUCTION

The United Nations Development Programme, with funding from the Adaptation Fund, is implementing the project **'Addressing Climate Change Risks on Water Resources and Food Security in the Dry Zone of Myanmar'**. As part of its evaluation strategy, the UNDP conducted a baseline survey covering a total 16 treatment and 26 Control Villages. The villages included in the survey were in the Sagaing, Mandalay and Magway Region, all part of the Dry agro-ecological Zone of Myanmar.

Myanmar Survey Research was commissioned to undertake this study, from the research design stage, the instrument development, enumerations and report completion. The data collection for the baseline survey was conducted in September 2016, and the aim is to generate information that can help with the assessment of the outcomes and impacts of this programme. The project aims to help vulnerable groups to reduce the impact of climate change on agriculture and livestock production, by improving three areas: access to fresh water, promotion of climate resilient farming and livestock practices and provide short and long-term weather forecast information to those most in need. This document presents the findings of the baseline survey.

2 EXECUTIVE SUMMARY

The aim of the survey is to establish a sound quantitative baseline to understand and generate information about the three main topics and together with an end-line survey to assess the impact of the project. The survey was conducted with a total of 840 respondents for the 16 treatment and 26 control villages selected from the townships of Chauk (Magway Region), Monywa and Shwebo (Sagaing Region), and Myingyan and Nyaung U (Mandalay Region). For the treatment villages (AF villages or the Beneficiary group), the total number of respondents was 320, comprising 128 landless, 128 small landholding and 64 female headed household respondents. For the control or non-beneficiary villages, the total number of respondents are spondents and 104 female headed household respondents.

A quantitative questionnaire was used for the household survey to assess the households' landholding, fresh water access for people and livestock, food security, information and communication, fodder availability for households with livestock, household livelihoods and sources of income as well as dwelling types and household assets. To help contextualize the quantitative finding, Focus Group Discussions and village profile questionnaires were also used for this project. A total of 20 FGDs (8 FGDs with the landless, 8 with the small landholding farmer, and 4 with the female headed household respondents) from the beneficiary (10 FGDs) and non-beneficiary villages (10 FGDs) were conducted.

The report is structured at two levels and around the need to produce data that can be compared at household level, according to the presence or not of intervention (AF and Control villages) and household type (landless, small landholding farmer, and female headed household). This level is discussed on chapter 6.

The data was structured at village level on chapter 7, which includes a comprehensive summary of key findings related to food, water, livelihood and economic prosperity of people in all villages.

This is, therefore, a long and detailed report with data that can be used as baseline survey, a benchmark for key indicators, both of which can be used to examine the impact of the interventions at the end of the project. The report can also help to design interventions and inform decisions.

3 BACKGROUND

Climate change threatens the food security, livelihood and economic prosperity of society in general, and of vulnerable groups in particular. Climate change will have dramatic consequences for agriculture and food security and this will disproportionately affect poor and marginalized groups. Climate change will impact on smallholder and subsistence farmers as they depend on agriculture for their livelihood and have a lower capacity to adapt to rapid changes. Therefore, projects that enhance rural livelihoods and food security, by increasing the capacity of the most vulnerable groups to adapt, are essential.

The UNDP with funding from the Adaptation Fund is initiating the implementation of a Climate Change adaptation project 'Addressing Climate Change Risks on Water Resources and Food Security in the Dry Zone of Myanmar'. The aim of the project is to reduce the impact of climate change on agriculture and livestock production in the Dry Zone in Myanmar. The project aims to help the most vulnerable groups by improving their access to fresh water, promote climate resilient farming and livestock practices, and provide information including short and long-term weather forecasts to those most in need.

3.1 Objectives of the Baseline Survey

The survey is intended to explore three main areas of interest within the areas of attention of the AF project. It is hoped that by establishing a sound quantitative baseline for these topics, an end-line survey will enable the project to assess the level of impact it had. The areas of interest are:

- Fresh water access
- Food security
- Livelihoods for the landless and farmers

The baseline survey results will play a fundamental part in the evaluation of the UNDP intervention. The baseline survey forms the basis on which to assess the effectiveness and outcomes of UNDP program and intervention, particularly in terms of improvements to fresh water access, food security and livelihoods. Findings of the survey in AF villages and control villages will then be evaluated and compared with the results from the end-line survey. The aim is for the baseline and end-line surveys to be compared allowing for the identification of change and taking into consideration and interpretation of observed trends. Changes must be analyzed through the complex prism of socio-economic interactions and natural world events, to determine if change resulted from the intervention or from other influences of outside forces and events beyond the control of the programme. It is important to understand if positive or negative changes in the status of vulnerable groups was the result of the AF intervention or if those changes were shaped by forces or events beyond the scope of the programme.

4 RESEARCH APPROACH AND METHODOLOGY

The study followed a mixed methodology that combined both quantitative and qualitative methods. The quantitative component was designed to explore and understand the causal impact of the AF project over the 3 years of the programme. In addition, and to complement the survey, the study conducted 20 FGDs including landless, smallholding farmer and female headed households. 10 FGDs were done in AF Villages and 10 in Control Villages as per the distribution shown in Table 2 below. The FGDs were designed and implemented to understand and contextualize answers given in the questionnaire.

Following this mixed methodology, the survey team chose a convergent analytical design to compare findings from the qualitative and quantitative data sources. This process meant collecting both types of data at the same time; assessing information using parallel constructs for both types of data; separately analyzing both types of data; and comparing results through procedures such as a side-by-side comparison in a discussion and jointly displaying both forms of data.

The result is that the quantitative and qualitative methods have been integrated into this report. The objective was for the two types of data to provide validation for each other and create a solid foundation for drawing conclusions.

4.1 Sampling

A multi-stage sampling approach was used for this assessment. First, 16 villages were sampled from 280 AF villages from 5 townships in the Dry Zone, and 26 villages were also selected as control sample for the project. In AF Villages, a total of 20 households were selected to participate in the survey. In Control Villages, also 20 households were selected to participate in the survey. Table 1 shows the sample distribution of villages and households we anticipate for this assessment.

	Number	Number of	AF Sample			Contr			
Townships	of AF Villages	Control Villages	Landless	Female Headed	Farmers	Landless	Female Headed	Farmers	Total
Shwebo	5	8	40	20	40	59	42	59	260
Monywa	3	5	24	12	24	40	20	40	160
Myingyan	3	5	24	12	24	40	20	40	160
Nyaung U	3	5	24	12	24	40	20	40	160
Chauk	2	3	16	8	16	24	12	24	100
TOTALS	16	26	128	64	128	203	114	203	840

In each village, a total of 20 households were interviewed; 8 landless, 4 female headed and 8 farmer households per village depending on the availability of each household type within each village.

Townships	Shwebo	Monywa	Myingyan	Nyaung U	Chauk
FGDs in AF Villages	2	2	2	2	2
FGDs in Control Villages	2	2	2	2	2
Total Transcripts for Analysis	4	4	4	4	4

Table 2 - FGDs per Strata for AF and Control Villages

4.2 Selection of Households

The UNDP project team provided MSR with a database of households in AF villages. MSR used the database as a guideline for the preparation and training of the enumeration team (specifically the team was trained on the household selection process based on the numbers of respondent types per village). The database was not used for the selection of households as the project team would have had to check each list with the village administrator and that process would have taken considerable time. Also, the field teams did not have access to similar lists for the Control Villages. In addition, the selection criteria was based on the answers of the respondents, they had to confirm if they were small holding farmers, landless or female headed households and as such it was deemed better to have the same household selection process for AF and Control enumeration areas

For the household selection, the fieldwork team from MSR, upon arriving to the village, met with the village administrator and requested the list of households. The village administrator or the village leader prepared the list of households which included the identification of landless farmers, female headed households, and smallholding farmers. Then the MSR team used a systematic random sampling method to select the necessary number of households (landless, female headed and small farmers) in each village from AF and control villages, involving the following steps:

- Firstly, household listings were compiled for farming, landless and female headed households (included in the village list). The total number of each type of household in the village was divided by the sample size to get an interval for each.
- Second, prior to sampling, the survey team assessed the village and chose a starting point. Commonly utilized starting points include the entrance to the village or a significant landmark.
- Third, a random number between 1 and the interval was generated.
- Finally, the number generated in step three will determine the starting point for the first household. The next households were identified by adding the interval.

4.3 Selection of Respondents

For the household questionnaire, a head of the household or an alternative member of the household, such as a spouse or mother or an adult household member who can answer questions about the household, was interviewed. For the qualitative component, each focus group comprised of 8 participants from the community including community members from various socio-economic backgrounds, with gender-balanced portion.





4.4 Township profiles

Chauk Township

Chauk is a township in the Magway Region, north-central Myanmar, on the bank of the Irrawaddy River, and the main urban and administrative centre is Chauk. The main economic activity in Chauk Township is farming with the main agricultural crops of rice, sesame and groundnut. The crop yields are rather low and farmers rely heavily on the forest for things such as firewood, timber, as well as fodder to support livestock. The landless work as seasonal farm laborers, migrating to urban regions during non-planting seasons to find temporary employment.

In this township operate inter-governmental organizations, NGOs and INGOs, and government organizations like the Green Emerald loan group and the Myanmar Agriculture Development Bank.

Monywa Township

It is a township situated in Monywa District in the Sagaing Region, which is located north-west of Mandalay on the eastern bank of the Chindwin river and the main town is Monywa. Monywa is a major centre for trade and commerce of agricultural produce from the surrounding Chindwin valley, especially beans, oranges, pulses and jaggery. It exports agricultural products to *Mandalay* and *Yangon* and imports rice and other agri-products from *YeOo* and *Shwebo*.

The local industry includes mills for the production of cotton, flour, noodles, and edible oils. Sausages from Alon called *wet udaunk* are quite popular, and Budalin longyi (sarong) is known for the strength of the fabric and its checked patterns. Monywa's rough cotton blankets are famous throughout Myanmar (with Monywa providing 80% of the country's blankets for a century), and some can even be found sewn up into knapsacks sold to unsuspecting tourists in Bangkok. Other regional crafts include bamboo and reed products, bullock carts and agricultural implements. The village of Kyaukka is well known for its lacquerware utensils for everyday use. Black market goods from India, especially saris and bicycle parts, pass through Monywa on their way to other parts of Myanmar.

There are social welfare association like Home for the aged (*Bo Bwa Yeikta*), *Chindwin* Rice Donation team, Charity Youth development unit (*Payahita Lu Nge PhunPyoYe Sakhan*), Myawaddy Monastery School, Reservist Firefighting team (*A-Yan Mee That*), Red Cross team, Mother and child care unit and Golden Heart Health Care Team (*Shwe NaLone Thar*). UN-Habitat and government organizations such as the Green Emerald Loan Program also support for this township.

Myingyan Township

Myingyan lies in the valley of the Ayeyarwady River, to the south of Mandalay. The area around the town is flat, especially to the north and along the banks of the Ayeyarwady. Inland the country rises in gently undulating slopes. The most noticeable feature is the Popa Hill, an extinct volcano, to the south-east. The

highest peak is 4,962 ft. above sea-level. Myingyan is the head of the branch railway to Thazi and the main line between Yangon and Mandalay.

The agricultural ordinary crops produced in Myingyan are millet, sesame, cotton, maize, rice and a great variety of peas and beans. There are no forests, but a great deal of low scrubland. The climate is dry, with high south winds from March until September. The annual rainfall averages about 35 in. The temperature varies between 106 and 70 Fahrenheit. Many landless people work as casual farm laborers or in non-agricultural business. There are also migrants who move to urban regions for temporary or permanent employment.

Nyaung-U Township

It is a township of Nyaung-U District in the Mandalay Region of Myanmar. It is located at the coordinates of 21°16′N 95°27′E. Its administrative town is Nyaung-U which lies on the eastern bank of the Ayeyarwady River. Its main economic activities are farming and agricultural crops like green gram, groundnuts and sesame which are widely grown in addition to monsoon paddy and the keeping of small livestock is a crucial livelihood activity.

Nyaung-U is a famous ecotourism site in Myanmar, and many workers migrate to Nyaung-U city and earn income as temporary employment or permanent employment.

Shwebo Township

It is located in Shwebo District in the Sagaing Region of Myanmar, on the plains between the Mu River and the Ayeyarwady River.

Shwebo Township is the biggest rice producer in upper Myanmar as well as the producer of Shwebo Baygya rice (species of rice) commanding the biggest market in rice. Farming is the main livelihood activity in the township and irrigation projects have significantly increased rice production allowing three crops per year.

During the agricultural off season, households can supplement their income and dietary needs with fishing, setting traps for eels and mouse trapping. They also work off land, selling goods, weaving, gathering of firewood, pottery or migrating temporarily for work in other regions.

4.5 Household Questionnaire

The questionnaire for the household component of the baseline survey aimed to explore three areas of interest – fresh water access, food security and livelihoods for the landless, smallholding farmers and female headed households. The questionnaire was designed to establish a sound quantitative baseline for these areas of interest and to enable the comparison with the end-line survey at the project completion.

The questionnaire was designed around indicative survey questions provided by the project team, and based on the Myanmar Poverty and Living Conditions Survey and LIFT Household Surveys. The aim was to have a questionnaire, that was simple to answer and record responses, and which would not take more than 45 minutes on average to complete. Despite best intentions, the actual average of the questionnaire was 67 minutes, with some questionnaires going up to 90 minutes long. There were no open questions in the questionnaire making recording of answers simple. All questions were carefully translated and tested and additional response options added as required.

Questionnaire content

The following summarizes the key questionnaire topics and information collected per section, and how information may be used when compared with subsequent evaluations:

Household demographics

- Household type confirmation landless, smallholding or female headed households
- Household structure and dependency ratios people available within the household for labor and casual work or own farming, which is important to assess food and livelihood security
- School attendance for school aged children
- Education levels of household member (literacy) important to assess ability to receive or access information such as market price information, weather forecasts, etc.

Fresh water access

Water for irrigation

- Percentage of households owning land and accessing land for agriculture
- Total area of land that is irrigated
- Type of irrigation
- Crops grown on irrigated dry/wet land.
- Cost of irrigation
- Reliability of water supply
- Quality of water supply

Drinking water

- Drinking water source during dry/wet season
- Distance to water sources and time required for collection
- Water collection responsibilities within the household
- Reliability of water supply
- Quality of water supply
- Cost of drinking water

Water for livestock

- Percentage of households owning livestock
- Sources of livestock drinking water
- Reliability of water supply
- Quality of water supply

Food security

- Percentage of households with dietary diversity (for end-line we can measure improvements in household food consumption which in turn is an outcome of improved household food access)
- Percentage of households' adequate food provision throughout the year
- Percentage of households that at times do not have enough to eat
- Perception of changes in household food supply from the previous year.

Communication

- Sources of information about what the government is doing
- Sources of information about jobs, crop prices

Livestock fodder

- Livestock sharing
- Practice of free grazing and where
- Fodder sources
- Availability of fodder compare to previous years
- Buys fodder and what kind

Livelihoods and income

- Percentage of households owning / accessing land for agriculture size of land
- Access to homestead garden
- Production of agricultural land
- Percentage of crop sold / consumed
- Percentage of households selling of livestock products
- Market locations for selling
- Income from off-farm labor salary differences for males and females
- Number of days of casual employment past 12 months
- Perception of changes in availability in casual work from the previous year.
- Main sources of income first, second and third
- Savings and borrowings total amounts
- Use and sources of loans loans support sustainable livelihoods or are a coping strategy

- Remittances source, amounts and frequency
- Changes in the main sources of household income overtime
- Average household monthly income from all sources simple scale
- Perception of the change in level of household income from the previous year
- Incidence of working for in-kind payment

Housing and assets

- Type of dwelling
- Dwelling structure roof, walls and floor
- Access to toilet facilities and type
- Ownership of household items

4.6 Village Profiles

A village profile was compiled from each village selected for the survey, with the characteristics of that village documented through a process of key informant interviews with representatives from the village authorities and leaders. A questionnaire was developed and pre-tested in Myanmar language, and the enumerators trained to collect the required information.

A copy of the Village Profile questionnaire can be found in **Annex D**. The village profiles with key informant covered the following topics:

- Village socioeconomic background, demographic characteristics and livelihood information.
- Proximity to services and essential facilities includes information about mode of transport and its time needed for each village to reach to nearest township or sub-rural health center or primary school or middle school or high school or bank.
- Sources of water include information about what type of water resources the villages use and for what purposes they use it and all year around availability of these water resources.
- Assess to road and types of infrastructure include information about standard of road access to the villages.
- Availability of electricity includes information about what types of electricity the villages have been using.
- Perceptions about climate change, incidences of disaster and other risk information includes information about types of natural or man-made disaster that the villages have experienced and how often they have experienced it. In addition, preparation activities and villagers' response to these disasters.
- Civil society groups and organizations, information about groups and their activities in the village.
- Availability of financial assistance, including information about repayment system for each source of credit in the villages

4.7 Focus Group Discussion

The interventions designed in this project (access to community water infrastructure and farm machineries, establishment of community forestry, and technical capacity building for climate resilient agriculture, etc.), are expected to interact with a complex set of socio-economic variables before any tangible development impact is observed. Focus Group Discussions help interpret and explain the findings from the quantitative survey data. The qualitative question guide was designed to capture external and independent variables that could potentially influence the observed changes, and to provide insights from the community regarding their exposure to interventions designed for this project.

Focus group discussions were conducted with landless households, smallholding farmer households and female headed households. FGDs were held in selected treatment and control villages with a total of 20 FGDs completed. Some qualitative information from the village profiles and findings from the focus groups will help interpret observed trends and changes. The objectives of the Focus Group Discussions component of the research are:

- Help interpret, explain, and elucidate findings from the quantitative survey data
- Verify and personalize the findings from the quantitative survey data
- Provide insights from the community regarding climate change
- Provide community perceptions on possible causes of certain key practices or changes in indicators

A copy of the topic guide used for the Focus Group Discussion is included in Annex E.

4.8 Field Work Implementation

Project schedule

Activity		Deliverable(s)	Due Date
Develop work plan		Work plan detailing critical tasks, planned outputs,	2 Aug 2016
		timelines, resources and responsible persons	-
	•	Inception report	
Develop study inception	•	Sampling design document	
report and supporting	•	Data treatment and analysis plan	9 Aug 2016
documents	•	Data quality assurance plan	
	•	Logistics and management plan	
Develop sampling plan and	•	Selection of treatment and control villages	
data collection Instruments	•	Final survey and qualitative data collection	19 Aug 2016
		instruments in English and local languages	
Develop training	•	Fieldwork implementation plan	26 Aug 2016

Table 3 – Baseline Project Workplan

curriculum and field procedure manuals	 Training manual and training procedures for data collection teams Training agenda, session plans and materials 	
	Team training starts	29 Aug 2016
	Team training ends	1 Sept 2016
	Pilot	2 Sept 2016
	Pilot debriefing	3 Sept 2016
	Field work Starts	6 Sept 2016
	Field work progress report	Weekly
Conduct fieldwork	Filed work ends	25 Sept 2016
	Field work completion report	5 Oct 2016
Data Analysis and Tabulations	Data cleaningTab preparation	15 Oct 2016
Draft study report	Final study report	25 Nov 2016

4.9 Fieldwork Training

In total, five Interviewing teams for the household survey and two qualitative teams for FGDs were deployed for this project. The qualitative and quantitative teams comprised a total of 29 staff (15 males and 14 females) of which 5 were trained as supervisors. In addition, two quality controllers for HH survey were deployed for the project.

The training for the household questionnaire, focus groups and village profile questionnaire was conducted for four days, from August 29 to September 1, 2016. The training program was held at MSR's head office in Yangon for all enumerators and supervisors with the support of the UNDP. The quantitative training was administered by San Yu Aung, the core trainer and surveyor. The qualitative training was given by Dr. San Tun Aung.

The training provided to fieldwork teams for this project included the following topics:

- Detailed explanation of the objectives of the survey.
- Quality control to be conducted by the project management team.
- Sampling design and method of selecting individual respondents.
- Detailed question by question explanation of the questionnaires.
- The use of survey materials.
- The Focus Group Discussion.
- Practice interviews, delivered between the trainer and a supervisor, in front of the interviewers under training.
- Discussion of any problems or respondent queries that may arise.
- Practice interviews, each interviewer with other interviewers, each interviewer role playing as both

interviewer and respondent.

• Logistics of the survey.

A pilot was conducted on the 2nd of September in two villages of Twantay Township in Yangon. 36 household interviews were completed (20 landless, 8 female headed and 8 smallholding farmer households), plus 1 village profile and 1 focus group discussion with females (female headed households). Another pilot was conducted in Chaung Shey village in Nayung U, where 9 households were interviewed (3 smallholding farmers, 3 landless and 3 female headed households), plus 1 village profile and 1 focus group conducted with female headed household respondents. This second pilot was completed on the 3rd of September. Changes were made to all questionnaires following testing; mainly to clarify wording.

The fieldwork management team, Field Manager, coordinators and supervisors, implemented quality assurance and control activities before, during, and following the data collection. Quality assurance procedures included the preparation of training materials and the implementation plan including the schedule, the training of fieldwork teams emphasized, and the importance of accurate and ethical sound data collection.

Through the fieldwork, field logs were created to record information on all households approached for the study. In addition to these logs, live monitoring and back check validations were conducted. In total, 10% of all completed interviews were observed live, and a further 20% were back checked for a total of 30% quality control performed. The quality control measures included verification of the:

- Fact that the interview took place
- Proper application of the sampling plan in selecting the households
- Approximate duration of the interview
- Proper administration of the various sections of the questionnaire
- Enumerators' general adherence to professional standards
- Summary of quality control procedures:

4.10 Analysis and Reporting

All household questionnaires were completed using Computer Assisted Personal Interviewing (CAPI) devices. The scripting program used for CAPI was CS Pro with the data transferred on a regular basis to SPSS. Before the commencement of fieldwork, the questionnaire was thoroughly tested for logic. Throughout fieldwork, as well as after completion, a 100% verification and data cleaning of the data collected was conducted.

Analysis then undertaken using SPSS and Q Professional, producing multiple rounds of frequency tables with the data disaggregated by the main variables. The main variables used for analysis include; gender, region, beneficiary and non-beneficiary, household type (landless, smallholding farmer and female headed households), monthly household income level, etc. The focus groups discussions, with permission

from the participants, were recorded and notes were taken by the team and used to create a transcript for each FGD. Each transcript was translated into English, reviewed and the content summarized on a per topic or question basis.

This is a complex data with many more opportunities for further analysis, far beyond the report presented below.

4.11 Weights

The sample approach for this research would ideally have selected smallholding, landless and female headed households proportionally to the population they represent. For this study, however, some groups were over or under-represented. Weights were created to correct the imperfections in the sample which might lead to bias and major differences between the household types and the population they represent.

Imperfections in the sample were mainly the result of the selection of household types with unequal probabilities, as such weights are needed to adjust the sample distribution for the key variables of interest, that is, to make the results representative to the true proportion of smallholding, landless and female headed households and to make it conform to the known household distribution.

More specifically a **weighting adjustment was prepared where** each household receives an adjustment weight which means that when a household type was under-represented, then they get a weight larger than 1, and in cases when the household was over-represented groups get a weight smaller than 1.

MSR was able to prepare weight adjustment because the true proportions for the individual household types are known within each enumeration area. That is, weights were created by comparing the sample achieved within each household type to the actual distribution of each household type within each village surveyed. By conducting this comparison (the achieved frequency distribution of a group with its true population distribution), MSR was able to establish whether the survey response is representative with respect to this variable.

The following household types were included in the survey; small holding farmers, landless and female headed households. Because the population within each village for each household type is known, we can compare the response distribution of household types with the population distribution for each village. For example, we can see the population and the sample for one village included in the survey;

		-			
	Small-Holding	Landless	Female Headed		
Population	33	55	19		
ropulation	31%	51%	18%		
Samplo	8	8	4		
Sample	40%	40%	20%		

Table 4 – Population and sample proportions for Nga Paing Taw Village

The percentages of the collected sample are different to that of the actual population for that village. For example, the percentage of small holding households included in the survey is 40% compared to the 51% which is the actual population of small holding households in that village. Accordingly, that household type was under-represented in the response. We can make the response representative with respect to age by assigning to small holding farming households a weight equal to:

Weight = 51 / 40 = 1.275.

This weight is obtained by dividing the population percentage by the corresponding response percentage. When the sample over-represents the population, then the weight will be smaller than 1. Conversely, when the sample is under-represented in the survey, then the weight will be larger than 1. This weighting method was followed for all household types for each village included in the survey. Accordingly, the weights for a household type in one village will be different from the weights for the same household type in another village.

The table below is an example of the differences between unweighted and weighted data for one of the question included in the questionnaire.

			Beneficiaries		Non-beneficiaries			
Column % n	NET	Landless	Small Land holding	Female Headed HH	Landless	Small Land holding	Female Headed HH	
Yes	52%	56%	52%	45%	58%	44%	54%	
	435	72	66	29	121	91	56	
No	48%	44%	48%	55%	42%	56%	46%	
	405	56	62	35	87	117	48	
NET	100%	100%	100%	100%	100%	100%	100%	
	840	128	128	64	208	208	104	
			Weigh	ited				
Yes	53%	58%	51%	48%	58%	48%	52%	
	446	83	53	35	135	83	57	
No	47%	42%	49%	52%	42%	52%	48%	
	394	60	52	38	100	92	53	
NET	100%	100%	100%	100%	100%	100%	100%	
	840	142	104	73	235	175	110	

Table 5 – example comparison of weighted and unweighted data

Q4.1 Were there months in the past 12 months when did not have enough food to eat

We can see that there is a small difference in the overall response to this question between the weighted and the unweighted data; 53% of households in the weighted data experienced months when they did

not have enough food, compared to 52% of the unweighted results (there are bigger differences within individual household types).

This baseline report, however, is based only on the sample data collected, the results have not been weighted to the true proportion of the population for each household type. A thorough weighted comparison of the results will be conducted for the end-line report.

4.12 Informed Consent and Data Security

The respondents for this study were informed at the introduction of the questionnaire the purposes of the survey. All respondents were asked a direct question; do you agree to participate in the survey? Field teams were trained in the importance of providing information to respondents with regards to the objectives of the study in order to avoid creating any anxiety among participants. During this **Informed consent**, respondents were explained how the data collected from them would be used and why it was necessary to collect personal information.

Respondents were assured that their **confidentiality and anonymity** would be protected; and that all information collected from respondents would be held in a secure server of MSR. Information collected includes the data as well as the contact details of respondents. The research participants were explained that the survey will be conducted again in 3 years, in 2019, and that their household would be revisited at that that time and conduct another interview with them. The contact detail information collected which will be used to identify the respondent during the revisit during the endline survey include:

- Respondent name
- Phone number (if available)
- Village name (address of respondent)
- Village tract and township information

All information was collected was part of the enumerators field log in which they recorded all the relevant information of what happened in the field. This information includes contact and call-back details for each respondent. The enumerator logs supply enough information for an independent observer to locate the selected household and to identify the respondent interviewed. This information will be used to locate, identify and re-interview (when available) the respondents during the end-line survey. All respondents included in the research were asked for their permission to collect and to hold their personal information. The field logs we reviewed by the field coordinator and the information was stored together with the respondent data for the baseline.

All personal information collected will be held in MSRs secure offline server and the access to this information is restricted to the immediate team involved in the project management or reporting of the research. In addition, all results are shared and presented in amalgamated form, that is, individual respondents cannot be identified as their responses are presented together with all other respondents.

5 Use, Scope and Limitations of the Research

To assess the impact of the AF project, the data should be used in two complementary levels. The first is a comparison between the baseline presented here and the end-line survey at village level. Any changes in the core indictors will be noted, positive or negative. As the changes can be conditioned by a number of causes, the second step is to compare changes between beneficiary and non-beneficiary. The combination of these two levels will indicate the impact of the project. It is important to mention that the decrease of one indicator in a village does not mean the project was unsuccessful as it is possible that a decrease it might be a relative increase when compared to other villages. For example, the comparison between the baseline and end-line surveys might show that the overall income in a certain village decreased. However, control villages with similar characteristics might have experienced a significant higher decrease food security across several villages but if the impact in AF villages was smaller, it could be argued the AF project had a positive impact on strengthening coping mechanisms of AF villages. The same reasoning applies to positive changes, which can only be associated to the project if they are significant higher than control group and are found across several AF villages.

As mentioned in the TOR, attribution in the strict sense is not possible in a quasi-experimental setting due to the large range of variable and their complex interaction. However, it is possible to indicate strong associations that illustrate with a high level of confidence the impact of the project. The survey was very comprehensive. While the data is minutely presented here it is possible to generate more data if they are needed after the end-line survey. It is possible, for example, that the end-line survey will point out some relationships not extensively discussed here but given the extension and combination of qualitative and quantitative components the necessary data can be retrieved in the future.

Substitutions and Fieldwork Issues

- 19 respondents were substituted because they refused or they were unavailable at the time of the interview.
- Two villages had to be substituted when the village administrators did not allow the field teams to undertake the survey in that location. The two villages were control villages.
- The village Gway Pin Yoe in Myingyan township is a very small village and there are not enough households to complete the required data collection. The field team included the village of Kyauk Tan which is in the same village tract to complete the required sample size. Kyauk Tan is also a treatment village and 4 interviews were completed there.

Sample size

Comparative analysis across the main variables, where the stratum is the household type, beneficiary/ non-beneficiary, etc., is not very robust due to the small sample size per stratum. For example, for smallholding beneficiary farmers, the margin of error is 5% and for female headed households, 6.5%,

without taking into consideration any design effect due to clustering in sampling design. A larger sample per stratum would be preferable.

The actual sample size gives us a confidence interval of 6 with 95% of confidence. This could be an issue if the differences between the populations of the villages surveyed was high. In one of the villages (Gway Pin Yoe) indeed there was not have enough respondents and did the remaining four interviews in Kyauk Tan.

Respondent bias

Similar projects, such as LIFT, have identified the potential for respondent bias due to their limited knowledge of the household situation in terms of livelihoods and food security. Questions that are particularly difficult for respondents to answer accurately include:

- Monthly household income from all members of the households and from all sources.
- Crop areas and extent of irrigation to those areas (though in this survey the agricultural area is not very large, so we should expect better answers).
- Harvest in kilograms and proportion sold/ used.
- Questions asking them to compare better/worse off levels with previous years.

6 RESEARCH FINDINGS

6.1 Research coverage

The household survey included households from three regions, all from the Dry agro-ecological zone, covering AF villages as well as control villages. The composition of households under each of these categories is provided in Table 4 below.

			Beneficiaries		No	n-beneficiari	es
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH
Sagaing	50%	50%	50%	50%	50%	50%	50%
	420	64	64	32	104	104	52
Mandalay	38%	38%	38%	38%	38%	38%	38%
	320	48	48	24	80	80	40
Magway	12%	13%	13%	13%	12%	12%	12%
	100	16	16	8	24	24	12
NET	100%	100%	100%	100%	100%	100%	100%
	840	128	128	64	208	208	104

Table 6 – Regions x respondent type

6.2 Respondent profile

All respondents were the head of household (65%), the spouse (26%) or the de facto head of household (9%). Understandably, more head of households were interviewed within the female headed household group. Peculiarly, fewer heads of household were interviewed from landless beneficiaries, only 46%, with more spouses answering the survey. Potentially, more landless head of household had to be away from home for a longer time or work farther away and could not be part of the survey. A higher proportion of non-beneficiary landless respondents were available compared to beneficiary landless respondents.

		Beneficiaries			Non-beneficiaries		
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH
Head of HH	65%	46%	65%	78%	61%	68%	78%
	542	59	83	50	127	142	81
Spouse	26%	47%	30%	0%	35%	23%	0%
	219	60	39	0	72	48	0
De facto head of household	9%	7%	5%	22%	4%	9%	22%
	79	9	6	14	9	18	23
NET	100%	100%	100%	100%	100%	100%	100%
	840	128	128	64	208	208	104

The overall distribution of male and female respondents was very close among the primary respondent to the household interview. Among individual groups, however, some gender variation was encountered. For example, 96% of female headed household respondents (both beneficiaries and non-beneficiaries) were females (as per the questionnaire, when the head of the household was not available, other responsible adult was interviewed and in the case of female headed households a small number of males also answered the questions), while for smallholding farmers 68% of respondents (both beneficiaries and non-beneficiaries) were males, which shows they work their small plot of land close to home and could be reached for the survey. This can also be an indication of the status and role of women in society where males are the ones that can answer questions regarding the household or be the head of household. As described by Daw Kyi Kyi Win from Shar Taw village in Min Gyan, who said, "If women can earn income, they will have power. If they cannot earn income, they don't have power."

		Beneficiaries			Non-beneficiaries		
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH
Male	51%	49%	64%	5%	63%	70%	3%
	428	63	82	3	131	146	3
Female	49%	51%	36%	95%	37%	30%	97%
	412	65	46	61	77	62	101
NET	100%	100%	100%	100%	100%	100%	100%
	840	128	128	64	208	208	104

Table 8 – Q2.3 Gender of respondent

As expected, a higher proportion of female headed households are in an older age group, with a significant proportion over the age of 60. This correlates with the number of widows among the females in this group.

				Beneficiaries			Non-beneficiaries			
	Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH		
18-29		9%	19%	8%	2%	12%	6%	2%		
		74	24	10	1	24	13	2		
30-39		20%	29%	18%	17%	24%	15%	11%		
		164	37	23	11	50	32	11		
40-49		27%	24%	25%	19%	26%	31%	29%		
		225	31	32	12	55	65	30		
50-59		24%	16%	24%	28%	21%	26%	33%		
		203	21	31	18	44	55	34		
60+		21%	12%	25%	34%	17%	21%	26%		
		174	15	32	22	35	43	27		
NET		100%	100%	100%	100%	100%	100%	100%		
		840	128	128	64	208	208	104		

Table 9 – Q2.4 Age of Respondent

Female headed households have a very high number of widows, 65% overall compared to only 4.5% among landless and smallholding farmers combined. Interestingly, the percentage of widows is slightly higher among beneficiaries with 72%, compared to the 61% of widows in the non-beneficiary female headed household group. Of the widows in female headed households, 71% were aged 50 years or older. Another aspect of interest regarding the marital status of the heads of household is the almost absence of cases of divorce or separation for beneficiary and non-beneficiary households.

			Beneficiaries		Non-beneficiaries			
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH	
Married	74%	93%	90%	5%	93%	86%	12%	
	621	119	115	3	193	179	12	
single	8%	5%	2%	17%	2%	8%	21%	
	64	6	3	11	5	17	22	
widowed	17%	2%	6%	72%	4%	5%	61%	
	139	2	8	46	9	11	63	
divorced	1%	0%	0%	5%	0%	0%	3%	
	8	0	0	3	1	1	3	
separated	1%	1%	2%	2%	0%	0%	4%	
	8	1	2	1	0	0	4	
NET	100%	100%	100%	100%	100%	100%	100%	
	840	128	128	64	208	208	104	

Table	10 -	02.5	Marital	status	of the	head	of ho	ousehold
		~~~~			0			

## 6.3 Household Demographics

The average household size among all households included in the survey was 4.2 members. There was no variability between the three regions, but there is a small difference between beneficiary households with 4.1 persons per household on average and non-beneficiary households with a slightly higher average of 4.3 persons per household. The size of female headed households for beneficiary and non-beneficiary villages is lower than the average size recorded overall for all households. The reason for this, as described in Table 7, is that more than half of the female headed household respondents (both beneficiary and non-beneficiary) are aged over 50 years and many of them are widows, which correlates to the shorter life expectancy of men in Myanmar. Women, therefore had to assume the role of head of household, following the death of their husbands.

Table 11 – Q2.8 Number	of people per household
------------------------	-------------------------

		Beneficiaries		Non-beneficiaries			
NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH	
4.23	4.30	4.34	3.27	4.41	4.60	3.47	

The Dry Zone is known for the large number of migrant workers and there is a possibility that some members of the family have left to work in other areas. It could be that family members left the children or parents behind, and although we ask for income access for remittances, there is scope to analyze this question more. Also, and as expected, female headed households are smaller (on average by 1 fewer household member). As mentioned previously, about 65% overall of female headed households are smaller.

We have used a dependency ratio calculation (as shown in the following table) where all children ages 0-14 (for under 15) are divided by the total number of persons aged 15+ that were accounted for in the questionnaire. Landless households have the highest dependency ratio, as calculated here, and it is quite similar for beneficiaries and non-beneficiaries. The ratio is significantly higher compared to other groups. On the other hand, dependency ratios are lower among female headed households. The expectation was for a higher ratio based on the lower than average number of people per household, more specifically the fewer number of adult males in the household. It seems, however, that there are more adults helping to take care of fewer younger children within the household, or those children have left home, which is a possibility based on the age of the head of households in that group.

			Beneficiaries			Non-beneficiaries		
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH	
0-14	24%	30%	21%	19%	29%	21%	20%	
	868	167	117	40	268	204	72	
15+	76%	70%	79%	81%	71%	79%	80%	
	2683	384	439	169	650	752	289	
NET	100%	100%	100%	100%	100%	100%	100%	
	3551	551	556	209	918	956	361	
Dependency ratio	32%	43%	27%	24%	41%	27%	25%	

## Table 12 – Dependency Ratio

Note: the dependency ratio for children aged under 15 years, is calculated as the number of children aged 0-14 years / number persons 15 + in the household, expressed as a percentage.

The gender distribution was as expected with no great differences between beneficiaries and nonbeneficiaries. There are some differences between landless and smallholding farmers, (in most cases these groups were nearly equally divided between males and females). Also, as expected, female headed households have a higher proportion of females, again showing that there are fewer males around, and as we will see below, this is a consequence of the higher proportion of widows within this group.

			Beneficiaries		Non-beneficiaries			
Column% n	Net	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH	
Male	45%	50%	46%	31%	48%	46%	29%	
	1584	278	258	64	439	440	105	
Female	55%	50%	54%	69%	52%	54%	71%	
	1967	273	298	145	479	516	256	
Net	100%	100%	100%	100%	100%	100%	100%	
	3551	551	556	209	918	956	361	

Table 13 - Q2.11 Gender of household members

As an overall figure, 24% of the household members are aged 0-14 years (under 15 years). This proportion was higher in landless households, where 30% of the household members were aged under 15 years.

				Beneficiaries			Non-beneficiaries		
	Column% n	Net	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH	
Under 10		15%	20%	12%	9%	18%	13%	11%	
		524	112	65	19	168	121	39	
10 -15 yrs		12%	12%	12%	11%	13%	10%	10%	
		409	65	65	24	121	98	36	
16 - 19 yrs		8%	7%	7%	8%	8%	8%	8%	
		270	37	37	17	75	75	29	
20 - 29 yrs		16%	18%	16%	19%	14%	15%	15%	
		555	97	90	40	127	147	54	
30 - 39 yrs		15%	17%	15%	14%	14%	15%	13%	
		526	94	85	29	130	142	46	
40 - 49 yrs		13%	11%	13%	11%	14%	15%	14%	
		470	59	70	22	125	142	52	
50 - 59 yrs		11%	7%	13%	13%	10%	12%	14%	
		405	41	75	27	93	119	50	
60+		11%	8%	12%	15%	9%	12%	15%	
		392	46	69	31	79	112	55	
Total		100%	100%	100%	100%	100%	100%	100%	
		3551	551	556	209	918	956	361	

Table 14 - Q2.12 Age of household members

The assessment of school attendance by younger members of the household is an important indicator to determine the positive impact of livelihood and food security programmes. Intervention programmes must consider the coping strategies of vulnerable households who tend to withdraw their children from school to save costs and to use their labor to earn an extra income.

A successful programme, therefore, achieves high levels of school enrolment and attendance from all school-aged children. What is particularly positive about such an outcome is that high percentage of attendance has the added benefit of improving the future livelihood opportunities of these children, allowing them to break away from subsistence type of work, by providing them with rural or urban alternatives to employment.

		Beneficiaries			Non-beneficiaries		
	Net		Small	Female		Small	Female
Column%		Landless	Land- bolding	Headed HH	Landless	Land-	Headed HH
Vos	E1%	5.0%	/10%	/20/	Eanore33	55%	E 20/
165	51/0	50%	49/0	4370	JZ/0	22/0	JZ/0
	686	115	101	30	194	183	63
No	49%	49%	51%	57%	48%	46%	48%
	651	113	106	40	181	153	58
Net	100%	100%	100%	100%	100%	100%	100%
	1337z	228	207	70	375	336	121

 Table 15 - Q2.13 Household members attending school aged 4-24 years

As the table above shows, members of a female headed household are less likely to be in school. Overall, about half of the members of a household between 4 and 24 are not in school. Since the range is quite large, the next table narrows the age group to 4 to 14 and groups them in girls and boys.

			Beneficiaries			Non-beneficiaries			
Column%	Net	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH		
Boys – Yes School	85%	81%	87%	76%	84%	89%	85%		
	291	51	46	13	81	72	28		
Boys – No School	15%	19%	13%	24%	16%	11%	15%		
	52	12	7	4	15	9	5		
Net – Boys	100%	100%	100%	100%	100%	100%	100%		
	343	63	53	17	96	81	33		
Girls – Yes School	80%	83%	76%	87%	76%	83%	92%		
	275	52	34	13	85	67	24		
Girls – No School	20%	17%	24%	13%	24%	17%	8%		
	67	11	11	2	27	14	2		
Net – Girls	100%	100%	100%	100%	100%	100%	100%		
	342	63	45	15	112	81	26		

Table 16 – Boys/girls aged 4-14 years attending school

Table 14 shows that among beneficiaries and non-beneficiaries boys are less likely to be in school if they are member of a female headed household but girls are more likely to be in school if they are members of a female headed household. The small sample size and the difference in the samples across different

types of households (the sample size of female headed household is smaller than the other household types) does not allow for a generalization.

In non-female led households, boys are slightly more likely to be in school (85%) than girls (80%). Across the income strata, households with the second highest income (200,001 – 300,000 Kyats) have the biggest number of children (26%) who are not in school. It may be the case that children in the households also work and their contribution in household income in turn put their households in the said income strata.

Overall, 83% of children aged between 4-14 years are in school, sadly 17% are not. The reason why such a proportion is not attending school is not clear but at least in part must be the financial situation of the household. A **Daw Nyunt Yi** from **Ohyin village** said, *"I can't even support myself, so my daughter had to quit school at Grade 8. I sent her to Yangon to work"*.

A series by household meetine (aged under 19)										
Column% n	Total	less than 50,000	50,001- 100,000	100,001- 150,000	150,001- 200,000	200,001- 300,000	300,001 and above			
Yes	83%	87%	80%	81%	90%	74%	89%			
	566	73	150	130	114	75	24			
No	17%	13%	20%	19%	10%	26%	11%			
	119	11	37	30	12	26	3			
Total	100%	100%	100%	100%	100%	100%	100%			
	685	84	187	160	126	101	27			

## Table 17 - At school by household income (aged under 15)

Across all respondent groups, 67% of all household members are currently working, with no differences between beneficiary and non-beneficiary respondents.

			Beneficiaries		Non-beneficiaries			
Column% n	Net	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH	
Yes	67%	67%	68%	67%	67%	67%	67%	
	2035	296	334	128	499	563	215	
No	33%	33%	32%	33%	34%	33%	33%	
	992	143	157	62	251	272	107	
Net	100%	100%	100%	100%	100%	100%	100%	
	3027	439	491	190	750	835	322	

## Table 18 - Q2.15 Currently working

Of those currently working, 59% work in agriculture either in their own land (27%) or working for someone else as hired farm laborers (32%). 47% of landless household members work as hired farm laborers which is a higher proportion compared to other groups. They are also more likely to be working in their household's non-farm business with 22% and as daily non-farm laborers with 22%.

Beneficiaries are significantly more likely to work as daily non-farm laborers with 29% compared to just 17% of non-beneficiary landless household members. 50% of smallholding farmer household members, on the other hand, cultivate their own land, with a smaller proportion working in the household's non-farm business (17%), or as farm laborers in someone else's land (16%).

		Beneficiaries			Non-beneficiaries		
Column%	Net	Landless	Small Land-	Female Headed	Landless	Small Land-	Female Headed
n			holding	HH		holding	HH
Cultivate on their own land	27%	0%	51%	30%	0%	50%	26%
	548	0	170	39	0	283	56
Work on someone's land as hired laborers	32%	40%	16%	27%	52%	19%	37%
	653	118	55	35	258	108	79
Work on household's non- farm business	18%	23%	17%	16%	21%	15%	17%
	372	68	56	21	103	87	37
Work on someone's non- farm business	7%	6%	4%	9%	9%	7%	5%
	139	19	15	11	45	39	10
Daily non-farm wage laborers	15%	29%	10%	17%	17%	7%	14%
	299	86	35	22	86	39	31
Others	1%	2%	1%	0%	1%	1%	1%
	24	5	3	0	7	7	2
Net	100%	100%	100%	100%	100%	100%	100%
	2035	296	334	128	499	563	215

The percentage of household members with a physical or mental impairment across all groups was 2%.

## 6.4 Landholding

Land is the most important livelihood asset for households in rural Myanmar. Ownership of sufficient land can ensure income and food security. This survey, however, did not measure the incidence of land ownership, instead we used quotas to target specific numbers of respondents from each group. The land owners included in the interview only have small holdings and as such are also considered a vulnerable group.

The average small land holding household owns just under 3 acres, with almost no difference between beneficiary and non-beneficiary households. Of the female headed households interviewed, 46% mentioned owning some land and again there is no difference between beneficiary and non-beneficiary households. There is, however, a slight but consistent trend showing a correlation between owning land and household income, that is, those who own land are more likely to earn more than non-land owners. While not large the difference is consistent.

		Benefi	iciaries	Non-beneficiaries		
Column % n	NET	Small Land- holding	Female Headed HH	Small Land- holding	Female Headed HH	
<1	7%	9%	19%	3%	9%	
	29	12	6	7	4	
1-<2	21%	21%	16%	22%	24%	
	88	27	5	45	11	
2-<3	19%	22%	9%	20%	13%	
	79	28	3	42	6	
3-<4	17%	14%	9%	21%	11%	
	70	18	3	44	5	
4-<5	14%	16%	22%	10%	18%	
	56	20	7	21	8	
5-<6	16%	14%	19%	17%	18%	
	68	18	6	36	8	
6	6%	4%	6%	6%	7%	
	23	5	2	13	3	
NET	100%	100%	100%	100%	100%	
	413	128	32	208	45	

Table 20 - Q2.19 Total Landholding





The land owned by the household is inherited or purchased. A small percentage of households access land for agriculture through other means such as renting land (paying rent in cash or agricultural product), and share cropping (share the crops cultivated on the land belonging to other households).

## 6.5 Fresh water access

The Dry Zone is the most water-stressed region of the country. Across the Dry Zone, water is scarce, vegetation cover is thin, and soil is severely eroded. Access to water varies greatly between communities, and reduced rainfall is making farming more difficult. Surface water from rivers and storage reservoirs is plentiful, but lack of infrastructure and the high costs of pumping constrain people's access to it.

## Irrigation

The actual area irrigated in the Dry zone is not exactly known, and the actual area irrigated in the dry season is insufficient to satisfy demand. It is not about shortage of water, as there is availability of surface water from rivers and storage, but the zone lacks the infrastructure to pump/redirect water away from the major rivers as the costs of pumping are high.

Beneficiaries have considerably less access to irrigation water than non-beneficiaries. Such difference points to a significant difference between the groups. Irrigation indicators point to changes in the future, so while currently the number of beneficiaries with access to irrigation is very low, the end-line results will clearly show if there have been any positive outcomes for beneficiaries as a result of the projects implemented by the programme.

		Beneficiaries		Non-ben	eficiaries
	NET	Small	Female	Small	Female
Column %		Land-	Headed	Land-	Headed
n		holding	нн	holding	нн
Yes	41%	20%	16%	54%	58%
	169	25	5	113	26
No	59%	80%	84%	46%	42%
	244	103	27	95	19
NET	100%	100%	100%	100%	100%
	413	128	32	208	45

## Table 21 – Q3.1 Use irrigation water

The main form of irrigation available to respondents is canal irrigations, mainly used to irrigate vegetables and onions in dry land, and flowers in wetland. Canal irrigation seems to be particularly important to beneficiaries (though the sample size is very small to be completely certain). Other important forms of irrigation include motorized pump irrigations with 24%, and tube-well irrigation with 14% of mentions.

In Sagaing Region, there seems to be more irrigation available as there is more wetland farming irrigation compared to the other two regions. But in general, the number of respondents using irrigation is very low, especially among beneficiary dry land farmers, of which only 46 farmers use irrigation. Due to the low numbers, it is difficult to comment on these responses, for example, only 12 respondents irrigate their homestead garden.

## Table 22 – Irrigation type

		Benefi	ciaries	Non-beneficiaries	
Column % n	NET	Small Land- holding	Female Headed HH	Small Land- holding	Female Headed HH
Canal irrigation	73%	84%	100%	70%	69%
	123	21	5	79	18
motorized pump irrigation	24%	24%	20%	25%	23%
	41	6	1	28	6
tube-well irrigation	14%	12%	0%	14%	15%
	23	3	0	16	4
NET	100%	100%	100%	100%	100%
	169	25	5	113	26

## Table 23 - Q3.5 Irrigate wetland

		Benefi	iciaries	Non-beneficiaries		
Column % n	NET	Small Land- holding	Female Headed HH	Small Land- holding	Female Headed HH	
Yes	73%	56%	60%	77%	77%	
	124	14	3	87	20	
No	4%	4%	0%	4%	4%	
	7	1	0	5	1	
Not Applicable	22%	40%	40%	19%	19%	
	38	10	2	21	5	
NET	100%	100%	100%	100%	100%	
	169	25	5	113	26	

## Table 24 - Q3.7 Irrigate Dryland

		Benefi	ciaries	Non-beneficiaries	
Column % n	NET	Small Land- holding	Female Headed HH	Small Land- holding	Female Headed HH
Yes	27%	52%	40%	21%	27%
	46	13	2	24	7
No	11%	4%	40%	12%	12%
	19	1	2	13	3
Not Applicable	62%	44%	20%	67%	62%
	104	11	1	76	16
NET	100%	100%	100%	100%	100%
	169	25	5	113	26

Those farmers that have access to water for irrigation say that the access is sufficient and reliable with only 10% (17 respondents) saying the opposite. Similarly, 99% of respondents with access to irrigation water say that the quality is fair or good.

		Benefi	ciaries	Non-beneficiaries	
Column % n	NET	Small Land- holding	Female Headed HH	Small Land- holding	Female Headed HH
Yes	90%	84%	80%	91%	92%
	152	21	4	103	24
No	10%	16%	20%	9%	8%
	17	4	1	10	2
NET	100%	100%	100%	100%	100%
	169	25	5	113	26

Table 25 - Q3.13 Irrigation water supply sufficient and reliable

#### **Drinking water**

The villages of the Dry Zone in terms of communities, farming systems, access to water and infrastructure, differ significantly from location to location. This means that different townships and villages have different priorities about what to do or how to tackle drinking water concerns. Deeptube wells are the main source of water during the dry and wet season, 25% in the dry season and 17% during the wet season. The drop in the use of deep-tube wells during the wet season is the consequence of the availability of rain water collection which is the second source of drinking water available during the wet season.





The average water consumption is similar across all groups, with the average household member consuming 21 liters per month. In the table below the female headed household might appear to consume less, in fact their household consumption is only 72 liters per month, but after we consider the number of people per households, we can see that water consumption overall is the same for all groups.

			Beneficiaries		No	on-beneficiari	es
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH
up to 50	21%	20%	15%	39%	21%	14%	33%
	176	25	19	25	43	30	34
50-100	43%	50%	48%	47%	41%	40%	38%
	365	64	62	30	85	84	40
101-150	30%	25%	32%	9%	33%	38%	24%
	252	32	41	6	68	80	25
more than 150	6%	5%	5%	5%	6%	7%	5%
	47	7	6	3	12	14	5
NET	100%	100%	100%	100%	100%	100%	100%
	840	128	128	64	208	208	104

Table 26 - Q3.21 water use per month

There is some correlation between the monthly household income and the amount of water consumed by the household. This is expected, as higher incomes can afford to spend time and money gathering or paying for the water they need and want.

Column % n	NET	1-2	3-4	5-6	7 or more
up to 50	21%	84%	17%	1%	0%
	176	114	60	2	0
50-100	43%	16%	73%	29%	10%
	365	21	261	74	9
101-150	30%	0%	11%	68%	46%
	252	0	39	170	43
more than 150	6%	0%	0%	2%	45%
	47	0	0	5	42
NET	100%	100%	100%	100%	100%
	840	135	360	251	94

Table 27 - Monthly water use (Q3.21) by number of HH members (Q2.8)

A higher proportion of non-beneficiary smallholding farmers have water access at home (0-meter distance) with 58% in the dry season and 63% in the wet season. This is significantly higher than beneficiary smallholding farmers of whom 44% in dry season and 53% in the wet season have direct access to water at home. This potentially points to a difference between beneficiary and non-beneficiary groups, with non-beneficiaries being perhaps less vulnerable or their villages having a better infrastructure.

			Beneficiaries		No	on-beneficiari	es
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH
0	48%	40%	44%	48%	46%	58%	45%
	400	51	56	31	95	120	47
up to 100 meters	6%	10%	10%	9%	5%	3%	4%
	53	13	13	6	11	6	4
101-200 meters	10%	8%	7%	5%	12%	9%	19%
	84	10	9	3	24	18	20
201-300 meters	18%	23%	26%	25%	16%	12%	14%
	151	30	33	16	33	24	15
up to 1 Km	12%	13%	9%	11%	14%	12%	13%
	103	17	11	7	30	25	13
more than 1 km	6%	5%	5%	2%	7%	7%	5%
	49	7	6	1	15	15	5
NET	100%	100%	100%	100%	100%	100%	100%
	840	128	128	64	208	208	104

Table 28 - Q	3.22 Distance	to the water source	in the dry	, season

#### Table 29 - Q3.23 Distance to the water source in the wet season

		Beneficiaries			Non-beneficiaries		
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH
0	55%	49%	53%	55%	51%	63%	57%
	463	63	68	35	106	132	59
up to 100	6%	10%	11%	9%	6%	3%	2%
	54	13	14	6	12	7	2
101-200	10%	6%	6%	5%	14%	8%	17%
	83	8	8	3	29	17	18
201-300	14%	19%	17%	20%	13%	11%	11%
	120	24	22	13	28	22	11
up to 1 km	13%	14%	13%	11%	14%	14%	13%
	113	18	16	7	30	29	13
more than 1 km	1%	2%	0%	0%	1%	0%	1%
	7	2	0	0	3	1	1
NET	100%	100%	100%	100%	100%	100%	100%
	840	128	128	64	208	208	104

Fetching water is mainly a task done by females, with 71% of respondents saying that females collect drinking water. That figure increases to 86% among female headed households. The responsibility could be the result of males going to work during the day and as such females have to take care of household chores such as fetching water.

	NET	Beneficiaries			Non-beneficiaries		
Column % n		Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH
Male	29%	30%	38%	14%	32%	29%	15%
	240	39	48	9	67	61	16
Female	71%	70%	63%	86%	68%	71%	85%
	600	89	80	55	141	147	88
NET	100%	100%	100%	100%	100%	100%	100%
	840	128	128	64	208	208	104

Table 30 - Q3.27 Who collects drinking water

An overwhelming majority of respondents think that the water quality fair (13%) or good (86%). Smallholding beneficiary farmers is the group with the lowest quality satisfaction with only 81% saying that the quality is good, accordingly we can say that there are no noticeable or major differences between the groups.

	NET	Beneficiaries			Non-beneficiaries		
Column % n		Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH
Good	86%	90%	81%	86%	85%	87%	86%
	720	115	104	55	176	181	89
fair	13%	9%	16%	11%	14%	13%	13%
	107	11	20	7	30	26	13
bad	2%	2%	3%	3%	1%	0%	2%
	13	2	4	2	2	1	2
NET	100%	100%	100%	100%	100%	100%	100%
	840	128	128	64	208	208	104

 Table 31 - Q3.28 What is the quality of the drinking water

Although an overwhelming percentage of respondents thinks the water quality is fair or good, 15% still think that the quality changes overtime (16%). The quality of the water changes, mainly during the month of July and August, we can venture the opinion that water quality deteriorates with the arrival of the wet season, with probably floods contaminating drinking water wells.

It is important to highlight that this is the respondent's perception of the quality of the water, but the water was not tested in field.
		Beneficiaries			Non-beneficiaries		
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH
Yes	16%	13%	15%	16%	19%	18%	14%
	137	16	19	10	39	38	15
No	84%	88%	85%	84%	81%	82%	86%
	703	112	109	54	169	170	89
NET	100%	100%	100%	100%	100%	100%	100%
	840	128	128	64	208	208	104

Table 32 - Q3.30 Water quality change over time

In terms of the reliability of the water supply, a slightly higher proportion of beneficiaries have experienced water supply reliability issues compared to non-beneficiaries. 17% of beneficiaries mentioned that water supply was not sufficient or reliable compared to only 7% of non-beneficiaries. Reliability of water supply is an issue especially during the months of March, April and May, just before the start of the rainy season. Water reliability at that particular time relates to the sources of water households are using for their drinking water.

FGDs also discussed issues of water shortages, but mainly they spoke of lost income as the result of having to spend so much time fetching water, and the change is noticeable when water is made available: "*Now,* we can access water in this village. The water quality is better than water quality from the pond. In the past, we used water from the pond, so we suffered from diarrhea and scabies, but now, we don't suffer any diseases because of using water from the well. This water is also good for cooking." **Mr. Maung Than** from Than Bo (North)

		Beneficiaries			Non-beneficiaries		
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH
Yes	89%	83%	83%	81%	94%	92%	93%
	748	106	106	52	196	191	97
No	11%	17%	17%	19%	6%	8%	7%
	92	22	22	12	12	17	7
NET	100%	100%	100%	100%	100%	100%	100%
	840	128	128	64	208	208	104

Table 33 - Q3.32 Drinking water supply sufficient and reliable

More beneficiaries have to pay for drinking water compared to non-beneficiaries, which could potentially be the result of the reliability concern beneficiaries have about water supply. Only 37% of non-beneficiaries pay for water compared to 54% of beneficiaries.

			Beneficiaries		No	on-beneficiari	es
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH
0	56%	47%	45%	45%	63%	63%	63%
	474	60	58	29	130	131	66
less than 1,000 kyats	24%	29%	35%	31%	19%	19%	20%
	203	37	45	20	40	40	21
less than 2,000 kyats	8%	8%	11%	11%	6%	7%	7%
	66	10	14	7	13	15	7
less than 3,000 kyats	7%	9%	8%	9%	9%	5%	5%
	62	12	10	6	19	10	5
more than 3,000 kyats	4%	7%	1%	3%	3%	6%	5%
	35	9	1	2	6	12	5
NET	100%	100%	100%	100%	100%	100%	100%
	840	128	128	64	208	208	104

Table 34 - Q3.34.1 How much do you pay for drinking water per month

### Water for livestock

Livestock keeping is very important for rural communities, including (or perhaps especially) among vulnerable groups. The main challenge faced in livestock breeding and keeping is the lack of water and scarcity of grazing areas, in fact these two are directly related. Keeping livestock relies heavily on free-ranging, which puts great pressure on the farmlands as grazing land area has diminished over the years because of diminishing water sources. This has resulted in a reduction in the availability of animal fodder, therefore increasing the cost in animal keeping. As such, issues relating to the improvement of livestock keeping depend on the availability of water.

55% of all respondents keeps livestock. The percentage increase to 65% among smallholding farmer respondents. Female headed households own less livestock compared to other groups, even landless households are slightly better off in that account. The main livestock kept is cattle with 31%, followed by chickens (23%) and pigs (13%). Also, there is no strong correlation between income and livestock ownership.

50% of landless households have or keep livestock, yet these households do not have land of their own, so they must rely almost completely on free grazing to keep and feed their animals. The main livestock kept by landless households are pigs and chicken, which is not surprising as these need less space and can be fed within the confined spaces they live in. Cattle on the other hand needs more space and as such it is not surprising that it is the main livestock of smallholding farmers.

		Beneficiaries			No	Non-beneficiaries			
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH		
No livestock	45%	50%	34%	56%	48%	35%	63%		
	381	64	43	36	100	73	65		
Cattle	31%	16%	49%	30%	19%	46%	21%		
	261	21	63	19	40	96	22		
Chickens	23%	20%	23%	22%	28%	26%	15%		
	196	25	29	14	58	54	16		
Pigs	13%	23%	13%	9%	16%	7%	10%		
	109	29	17	6	33	14	10		
Goats	5%	8%	5%	2%	5%	4%	3%		
	38	10	6	1	10	8	3		
Other	3%	2%	2%	0%	3%	5%	2%		
	23	2	3	0	6	10	2		
NET	100%	100%	100%	100%	100%	100%	100%		
	840	128	128	64	208	208	104		

Table 35 - Q3.37 Animals owned by household

The main source of drinking water for livestock comes from wells, deep (37%) and shallow (17%), followed by rivers (15%) and ponds (10%). There are no noticeable differences between the groups about this.

			Beneficiaries		N	on-beneficiar	es
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH
deep-well	37%	28%	41%	32%	37%	39%	33%
	168	18	35	9	40	53	13
shallow-well	17%	16%	11%	14%	18%	22%	15%
	78	10	9	4	19	30	6
River	15%	17%	12%	18%	15%	14%	15%
	67	11	10	5	16	19	6
Pond	13%	22%	22%	21%	12%	4%	8%
	61	14	19	6	13	6	3
Underground/bore water	10%	6%	11%	7%	9%	11%	18%
	47	4	9	2	10	15	7
Hand pump	8%	9%	2%	4%	11%	9%	5%
	35	6	2	1	12	12	2
Other	7%	6%	8%	7%	8%	7%	5%
	33	4	7	2	9	9	2
NET	100%	100%	100%	100%	100%	100%	100%
	459	64	85	28	108	135	39

#### Table 36 - Q3.38 Source of drinking water

81% of the respondents mentioned that the water quality for livestock is good. Only 3% said that the quality was bad. Smallholding farmers are slightly less likely to find the quality of water for livestock bad, with only 1 mention from all respondents. This is interesting because more smallholding farmers own cattle compared to other groups and as such they rely on water access for their livestock.

		Beneficiaries			Non-beneficiaries		
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH
Good	81%	86%	80%	71%	82%	81%	79%
	372	55	68	20	89	109	31
fair	16%	9%	20%	21%	13%	19%	15%
	74	6	17	6	14	25	6
bad	3%	5%	0%	7%	5%	1%	5%
	13	3	0	2	5	1	2
NET	100%	100%	100%	100%	100%	100%	100%
	459	64	85	28	108	135	39

### Table 37 - Q3.39 Quality of this water

Respondents were asked if the quality of the water they use for livestock changes overtime. 19% of livestock owners said that the quality of water for livestock changes especially during the monsoon/rainy season.

Table 30 - Q3.41 Quality change over time
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		Beneficiar ies			Non-beneficiaries		es
Column	NET % n	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH
Yes	19%	23%	18%	25%	13%	19%	23%
	85	15	15	7	14	25	9
No	81%	77%	82%	75%	87%	81%	77%
	374	49	70	21	94	110	30
NET	100%	100%	100%	100%	100%	100%	100%
	459	64	85	28	108	135	39

More beneficiaries mentioned that the water supply for livestock is insufficient or unreliable. 22% of beneficiaries with livestock said that the water supply was not sufficient, and similar to drinking water, the supply is unreliable especially during the months of March, April and May, just before the start of the rainy season. Beneficiary smallholding farmers were more concerned than average, and 24% from that group said that water supply was not sufficient or unreliable.

		Beneficiaries			Non-beneficiaries		
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH
Yes	87%	80%	76%	79%	94%	93%	90%
	400	51	65	22	102	125	35
No	13%	20%	24%	21%	6%	7%	10%
	59	13	20	6	6	10	4
NET	100%	100%	100%	100%	100%	100%	100%
	459	64	85	28	108	135	39

Table 39 - Q3.43 Livestock drinking water supply sufficient and reliable

### 6.6 Food security

A diversified household diet is an important outcome of any programme aiming to help vulnerable groups to cope with the dramatic changes resulting from climate change. Better measure of improved outcomes can be found in the birth weight of children and in the anthropometric measurements of children aged under 5 years. For this study, the main mechanism for measuring a positive outcome would be the increased diversity of food consumption across all groups. Rice is the staple food of the Myanmar population and is consumed on a daily basis by all respondents in the survey.

There is a correlation between dietary diversity and household income, meaning that higher incomes increase food expenditure which results in an increase intake and better quality of their diet. The following Table summarizes food diversity in terms of its consumption over the last 7 days, as reported by respondents from all groups. In addition to the 100% consumption of rice, other daily consumption includes oils and fats with 85%, and vegetables with 19%. More tobacco is consumed daily than fresh vegetables.

The average respondent consumes more fish than beef, pork or chicken. 71% of respondents reported that they consumed fish during the last 7 days, with 49% consuming it at least 2-3 times in the last 7 days. Beef was consumed by 32% in the last 7 days compared to 42% who consumed pork and 54% who consumed chicken during the same period.

Row % n	Not at all	Once in the week	2-3 times per week	Daily	Once per day	Does not eat (choice/ religion)	NET
Rice	0%	0%	0%	0%	100%	0%	100%
	0	0	0	0	840	0	840
Maize	78%	9%	9%	0%	0%	4%	100%
	658	74	74	0	0	34	840
Beans/pulses	9%	11%	52%	12%	15%	1%	100%
	72	95	440	101	126	6	840

Table 40 - O	4 Times the household has ea	ten the following f	oods in the last 7 days
	4. Three the household has ea	ten the following i	Ubus in the last / uays

Potatoes	43%	18%	32%	1%	1%	5%	100%
	361	153	267	11	8	40	840
Sweet potatoes	95%	1%	2%	0%	0%	2%	100%
	799	11	15	0	0	15	840
Fresh vegetables	2%	5%	51%	23%	19%	0%	100%
	17	39	425	196	163	0	840
Fish	28%	22%	40%	5%	4%	2%	100%
	239	181	332	41	32	15	840
Meat (beef)	49%	16%	15%	0%	1%	20%	100%
	411	132	124	0	5	168	840
Pork	46%	22%	19%	0%	1%	12%	100%
	388	181	162	0	8	101	840
Fresh fruit	33%	16%	38%	9%	4%	0%	100%
	277	138	315	74	33	3	840
Wheat/flour/noodles	38%	21%	28%	10%	2%	1%	100%
	322	180	231	87	14	6	840
Eggs	17%	17%	54%	8%	3%	2%	100%
	142	139	451	67	28	13	840
Poultry	44%	20%	32%	0%	2%	2%	100%
	368	170	271	0	13	18	840
Oils/fat	0%	0%	1%	15%	85%	0%	100%
	0	0	6	123	711	0	840
Sugar/honey	64%	8%	14%	11%	3%	1%	100%
	534	67	116	89	26	8	840
Nuts/seeds/grains	59%	13%	21%	5%	2%	1%	100%
	494	106	174	45	16	5	840
Alcohol	53%	4%	5%	8%	4%	26%	100%
	441	32	45	70	35	217	840
Tobacco	35%	1%	3%	9%	31%	22%	100%
	291	8	25	74	261	181	840
Tea/coffee	37%	8%	17%	27%	9%	3%	100%
	314	68	140	224	73	21	840

52% of all respondents reported that there were some months in the preceding 12 when their households did not have enough food to eat. Landless households are slightly more vulnerable especially among the non-beneficiary control sample. Again, smallholding farmers from the control villages seem to be better off, with 44% reporting that there were some months in the last year when they did not have enough food to eat, compared to 52% of beneficiary smallholding farmers. Interestingly, the beneficiary female headed households seem be doing a bit better and fewer of them reported that there were months when they didn't have enough food to meet the needs of the households.

		Beneficiaries			Non-beneficiaries		
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH
Yes	52%	56%	52%	45%	58%	44%	54%
	435	72	66	29	121	91	56
No	48%	44%	48%	55%	42%	56%	46%
	405	56	62	35	87	117	48
NET	100%	100%	100%	100%	100%	100%	100%
	840	128	128	64	208	208	104

Table 41 - Q4.1 Months in the past 12 when the households did not have enough food to
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By analyzing this question by the monthly household income, we can see that there is a correlation between income and having enough to eat; the higher the income, the more likely households have enough to eat. There is also a slight correlation between the number of household members and having enough to eat, with larger households (7+ members) being more likely to suffer food shortages compared to smaller households. On the other hand, there is no correlation between owning livestock and having enough to eat all year round.

There is a correlation between the number of people in the household and children in the household, as such, we can say that not having enough to eat affects households with children more than other households, and that the development of young children is affected as a result.

Column % n	NET	Yes	No
less than 50,000	16%	19%	12%
	131	81	50
50,001-100,000	28%	31%	26%
	238	133	105
100,001-150,000	21%	21%	20%
	175	93	82
150,001-200,000	17%	17%	17%
	145	76	69
200,001 and above	18%	12%	24%
	151	52	99
NET	100%	100%	100%
	840	435	405

Table 42 - Q7.31 average monthly income by household that did not have enough food to eat

The adequacy of food provisioning throughout the year is another key indicator of households' food access and security. The expectation of a positive outcome is for the beneficiary households to improve their access to food over the course of the previous 12 months and at the end-line survey, this will be an important measurement of the success of the program. Household access to food is the result of the ability of the household members to grow, keep, buy or gather food, or to borrow from relatives, friends, the community, government or donors throughout the year to buy food. The ability of households to do this changes overtime and through the year depending on things such as, crop yield, crop prices and other employment availability and income sources, as well as events such as natural disasters.

Over the last 12 months, the worse period in terms of respondents not having enough food to meet their needs was during July and August. Not having enough food to meet the household's needs is something that happens at a different time from when they have water shortages. In this case, it comes during or immediately after the time of the year when fields are being planted, during the flooding months of the wet season. The focus group discussion backup this information. During the year people eat well for 6 months and enjoy good quality rice but then they have to be content with poor quality rice for the rest of the year. The groups confirm that July and August are difficult months and it is possible that some households have to borrow money to buy food. FGD participants said that they have to eat low quality rice and cheaper food and vegetables because of low income.

FGDs with female headed households also confirm that their groups face difficult times. The reason why they cannot access enough food at times is that they don't have enough income and have to eat vegetables rather than meat. *"The fruits and vegetables from the previous year are gone and there hasn't been any from the new season. This, coupled with lack of money, put us in the situation of food shortage."* (Daw Hnint Mar, Farmer, Twin Chaung).

			Beneficiaries		Non-beneficiaries		
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH
January	6%	1%	8%	3%	5%	13%	5%
	28	1	5	1	6	12	3
February	9%	10%	6%	14%	10%	9%	7%
	39	7	4	4	12	8	4
March	18%	22%	20%	31%	13%	21%	11%
	79	16	13	9	16	19	6
April	21%	31%	23%	38%	16%	14%	18%
	90	22	15	11	19	13	10
Мау	17%	14%	11%	28%	21%	13%	16%
	72	10	7	8	26	12	9
June	15%	17%	6%	14%	20%	11%	18%
	64	12	4	4	24	10	10
July	50%	40%	50%	59%	52%	47%	61%
	219	29	33	17	63	43	34
August	51%	40%	50%	55%	52%	53%	57%
	221	29	33	16	63	48	32
September	28%	35%	36%	31%	24%	20%	27%

### Table 43 - Q4.2 When the household has food shortages

	120	25	24	9	29	18	15
October	28%	29%	29%	24%	29%	31%	23%
	123	21	19	7	35	28	13
November	20%	22%	26%	10%	17%	26%	16%
	89	16	17	3	20	24	9
December	7%	7%	14%	3%	2%	11%	7%
	32	5	9	1	3	10	4
NET	100%	100%	100%	100%	100%	100%	100%
	435	72	66	29	121	91	56

Chart 3 – Food and water shortages in last 12 months



Base – n=840

Respondents were also asked a series of questions about what they did or how they coped in situations when there was not enough food in the household. The following Table summarizes the main things household do to deal with food shortages or situations when there is not enough food for the household. Overall, the most common change among households to cope with not enough food in the household was to borrow from relatives and neighbors, followed by changing the diet and buying less expensive food.

Column % n	change the family diet to cheaper or less-preferred foods	use savings in order to have enough food to eat	decrease money spent on health or medicines	borrow food or money for food from relatives, friends or neighbors	borrow money from money lenders	sell, pawn or exchange household's assets
Never	49%	50%	54%	32%	39%	65%
	413	421	455	266	326	547
Sometimes	31%	34%	34%	45%	43%	27%
	263	288	285	376	359	226
Often	20%	16%	12%	24%	18%	8%
	164	131	100	198	155	67
NET	100%	100%	100%	100%	100%	100%
	840	840	840	840	840	840

Table 44 –	Coping	strategies	for food	shortages
	000000	0110100.00		00. 00000

As shown on table 43, most respondents from all groups said that the availability of food from all sources throughout the last 12 months increased (31%) or stayed the same (50%). Still 18% of the respondents said that the availability of food from all sources throughout the last 12 months has decreased, with no noticeable differences between groups.

Respondents were also asked about their households' food security compared to 5 years. A comparison of households' food security during the last 12 months and within the last 5 years is shown in the table below. 54% of all respondents said that there was more food compared to 5 years ago, with 31% mentioning that the food availability had increased in the last 12 months. There remains, however, a significant proportion of respondents who said the availability food had decreased in the last 12 months, with 18% saying it was worse. Interestingly, 16% of the respondents said that households' food security had decreased in the last 5 years, this shows that in the last 12 months things were a bit more difficult for some households, even if for a small proportion of the sample.

с	olumn % n	household's food availability compared to p12m	household more food secure than 5 years ago
Increased		31%	54%
		261	452
Same		50%	30%
		423	249
Decreased		18%	16%
		155	138
Don't know/Don't answer		0%	0%
		1	1
NET		100%	100%
		840	840

Table 45 - Q4.1 Food Security compared to P12M and 5 years ago

Not surprisingly as this is the dry zone of Myanmar, pigeon beans, instead of rice, is the most popular crop especially among smallholding beneficiary farmers. Rice is the main crop planted by non-beneficiary smallholding farmers. The difference can be explained by the difference access that beneficiaries and non-beneficiary farmers have to irrigation water. Interestingly, the number of female headed respondents growing or producing crops is greater than the number with access to land, which could be the results of crop sharing or similar arrangements.

There is a marked contrast in the crops grown or produced by beneficiaries and non-beneficiaries. 65% of small land-holding and 46% of female headed households grew beans against 29% and 18% among non-beneficiaries respectively.

Non-beneficiary households with 42% smallholder farmers and 34% from female headed households grow it. Here, it is necessary to consider the fact that Shwebo township in Sagaing Region is the biggest rice

producer in upper Myanmar while Chauk Township in Magway Region doesn't produce rice at all. This also reflects the variability of the nature of land and irrigation in the Dry Zone to which both townships belong.

		Beneficiaries		Non-beneficiaries	
Column % n	NET	Small Land- holding	Female Headed HH	Small Land- holding	Female Headed HH
Pigeon beans	40%	65%	46%	29%	18%
	177	83	21	61	12
Rice	30%	16%	11%	42%	34%
	135	21	5	87	22
Groundnuts	25%	36%	20%	23%	15%
	113	46	9	48	10
Sesame	14%	14%	13%	15%	11%
	63	18	6	32	7
Green gram	12%	9%	7%	13%	15%
	54	12	3	28	10
Corn	8%	6%	4%	10%	6%
	35	8	2	21	4
NET	100%	100%	100%	100%	100%
	447	128	46	208	65

Table 4C 04 17 k	a da a d		امممناه
Table 40 - Q4.17 K	ey lood products	s grown/ pro	aucea

Of the respondents that have access to land, 88% reported that they sell at least some of the crops they produced. There are no significant differences between the respondent groups here.

Non-beneficiaries

88%

182

13%

26

100%

208

Female

Headed

HH

93%

42

7%

3

45

100%

		Benefi	Non-b					
Column %	NET	Small	Female	Small				
Column %		Lanu-	пеацец	Land-				
n		holding	HH	holding				
Yes	88%	88%	91%	889				
	365	112	29	18				

12%

48

100%

413

# Table 47 - 04,18 Sell food (cash crons)

No

NET

Pigeon beans is a cash crop and an overwhelming majority of producers sell at least part of what they have grown, while a slightly higher proportion chooses to keep the rice they have grown.

9%

3

32

100%

13%

100%

128

16

		Benefi	ciaries	Non-beneficiaries		
Column % n	NET	Small Land- holding	Female Headed HH	Small Land- holding	Female Headed HH	
Pigeon beans	45%	66%	72%	31%	29%	
	163	74	21	56	12	
Rice	30%	13%	17%	38%	45%	
	108	14	5	70	19	
Groundnuts	25%	31%	31%	20%	21%	
	90	35	9	37	9	
Sesame	15%	11%	21%	16%	17%	
	54	12	6	29	7	
Green gram	13%	12%	10%	14%	19%	
	49	13	3	25	8	
Corn	8%	6%	7%	8%	12%	
	29	7	2	15	5	
Onion	6%	6%	0%	8%	5%	
	23	7	0	14	2	
Other	28%	25%	24%	32%	24%	
	103	28	7	58	10	
NET	100%	100%	100%	100%	100%	
	365	112	29	182	42	

#### Table 48 - Q4.19 which crops

Respondents were asked about the causes of their food insecurity with multiple responses recorded for their answers. Responses to questions regarding food security varied across the groups. While the issue of food security for the landless is directly related to the lack of work and lack of money, it is the water related issues such as; draught or no irrigation, crop failures, and lack of money that determine the food security of smallholding farmers. Here again, the dependency of the landless households whose livelihoods and income depend on farmers, who in turn rely on the weather, needs to be factored in; **Daw Saw Htwe** from **Sinka village** in **Chauk** township describes the dependency of casual laborers on framers when she says, *"The productivity of our farms decreased this year. So, landowners hire fewer laborers. As a result, job opportunities for casual laborers have decreased."* In fact, *"Drought results in unemployment for casual workers employed by farmers who can't do their farming."* **Daw Khin Ohn Myint, Aukle village, Chauk** Township. Lack of money by itself does not mean much, it needs to be defined a bit more, is it not enough pay for their work, crop prices are low, etc.

As noticed previously, beneficiary smallholding farmers are a bit more concerned about water and irrigation shortages compared to non-beneficiary farmers who, as we saw previously, have a bit more access to water, while crop failures affect both groups the same.

			Beneficiaries		No	Non-beneficiaries			
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH		
Shortage of work	45%	55%	34%	45%	62%	32%	42%		
	382	71	43	29	129	66	44		
Lack of money	42%	56%	41%	38%	39%	37%	43%		
	352	72	53	24	82	76	45		
No irrigation/draught	33%	23%	52%	25%	24%	42%	28%		
	278	30	66	16	49	88	29		
Crop failure/pests	16%	5%	29%	13%	4%	28%	14%		
	135	7	37	8	9	59	15		
No land/not enough	11%	13%	10%	8%	15%	9%	9%		
	94	16	13	5	32	19	9		
Other	14%	13%	16%	20%	12%	17%	11%		
	121	17	20	13	25	35	11		
Don't Know	3%	1%	2%	6%	2%	3%	2%		
	21	1	3	4	5	6	2		
NET	100%	100%	100%	100%	100%	100%	100%		
	840	128	128	64	208	208	104		

Table 49 - Q4.20 Main cause of food insecurity

### 6.7 Communication

General information about what the government is doing regarding agriculture, workforce or family planning is something respondents get from multiple sources. The three most important sources of information are radio (37%), relatives, friends and neighbors (35%) and television (25%).

Radio is the most important to smallholding farmer households with beneficiaries (48%) and nonbeneficiary (40%) saying it was the main source of information. Female headed households, on the other hand, rely more on relatives, friends and neighbors for information, especially among beneficiary households, while landless households rely on radio and relatives, friends and neighbors. Non-beneficiary landless rely a bit more on relatives, friends and neighbors (40%) than radio (32%). Beneficiaries, however, have very small difference between the two, with radio 36% and relatives, friends and neighbors 34%.

Table 50	- Q5.1.1 Sources o	f information	about what the	government is doing
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			Beneficiaries		No	Ion-beneficiaries	
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH
Radio	37%	36%	48%	25%	32%	40%	35%
	308	46	61	16	66	83	36
Relatives, friends and neighbors	35%	34%	30%	34%	40%	34%	38%
	297	43	38	22	84	71	39

Television	25%	22%	23%	19%	25%	32%	17%
	208	28	30	12	53	67	18
NET	100%	100%	100%	100%	100%	100%	100%
	840	128	128	64	208	208	104

When it comes to information about jobs and prices of goods and crops, respondents rely more on relatives, friends and neighbors than any other mode of communication. Overall, 51% of respondents mentioned that for information on jobs and crop prices, relatives, friends and neighbors are better sources, followed by the radio with 37% and the local market / retailer with 28%.

			Beneficiaries		Non-beneficiaries		
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH
Relatives, friends and neighbors	51%	47%	47%	58%	48%	53%	58%
	428	60	60	37	100	111	60
Radio	37%	35%	50%	27%	35%	40%	30%
	312	45	64	17	72	83	31
Local market / Retailer	28%	17%	40%	25%	22%	34%	28%
	233	22	51	16	45	70	29
Television	14%	14%	11%	8%	16%	19%	8%
	119	18	14	5	34	40	8
NET	100%	100%	100%	100%	100%	100%	100%
	840	128	128	64	208	208	104

Table 51 - Q5.2.1 Sources of market information (such as jobs, prices of goods or crops)

# 6.8 Livestock fodder

Perhaps similar to land ownership in its importance (to a slightly lesser extent), livestock represents an important asset for households. For the vulnerable, livestock owning households included in the survey, livestock can be considered a form of savings as well as being a productive asset for them. There was considerable variation in types of livestock owned by group, with cattle, chickens and pigs the most common livestock owned by respondents. 31% of households reported owning cattle, followed by 23% who said they own chickens.

	Table 52	- Q3. 37	Animals	the l	household	currently	owns
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				Beneficiaries		No	on-beneficiaries	
	Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH
No livestock		45%	50%	34%	56%	48%	35%	63%
		381	64	43	36	100	73	65
Chickens		23%	20%	23%	22%	28%	26%	15%
		196	25	29	14	58	54	16

Cattle	31%	16%	49%	30%	19%	46%	21%
	261	21	63	19	40	96	22
Pigs	13%	23%	13%	9%	16%	7%	10%
	109	29	17	6	33	14	10
NET	100%	100%	100%	100%	100%	100%	100%
	840	128	128	64	208	208	104

### Table 53 - Q3.37 Number of animals owned

Column %	2.1	8.1	7.1
n	Cattle	Chickens	Pigs
1	16%	7%	51%
	43	13	56
2	40%	8%	34%
	105	15	37
3	17%	13%	8%
	45	25	9
4	11%	6%	2%
	28	11	2
5	8%	10%	2%
	21	19	2
more than 5	7%	58%	3%
	19	113	3
NET	100%	100%	100%
	261	196	109



Livestock keeping and production for personal consumption and sale support and increase the sustainability of vulnerable groups by positively impacting on their food security and income. We asked all respondents if they shared any livestock with others and only 13% of all livestock owners said they did. The proportion is slightly higher among landless respondents as 17% said they shared livestock. This should be expected since the landless do not have access to land of their own, so they need to share with other as a way of keeping some livestock. Beneficiary female headed farmers were the least likely to share livestock, but the sample is a bit small to make strong conclusions about that.

	Table 54 - Q	6.1 Share	livestock	with	others
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		Beneficiaries			Non-beneficiaries		
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH
Yes	13%	19%	12%	4%	17%	9%	13%
	58	12	10	1	18	12	5
No	87%	81%	88%	96%	83%	91%	87%
	401	52	75	27	90	123	34
NET	100%	100%	100%	100%	100%	100%	100%
	459	64	85	28	108	135	39

Of the respondents that own livestock, 28% practice free grazing which is mainly done in land outside the village (68%) or on communal land in the village (26%). It is mostly males (71%) who herd the cattle when free grazing is practiced and 27% of livestock owners claim to have fodder near the house mainly in the form of trees, grasses and crop residues.

			Beneficiaries			Non-beneficiaries		
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH	
Yes	28%	30%	29%	36%	29%	27%	15%	
	128	19	25	10	31	37	6	
No	72%	70%	71%	64%	71%	73%	85%	
	331	45	60	18	77	98	33	
NET	100%	100%	100%	100%	100%	100%	100%	
	459	64	85	28	108	135	39	

Table 55 - Q6.2 Practice free grazing in the dry season

For the grazing ground for cattle, a big majority, 68% of the respondents reported that their cattle graze outside the village while 26% use the communal village land.

		Beneficiaries			Non-beneficiaries		
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH
On communal village land	26%	37%	12%	40%	29%	27%	0%
	33	7	3	4	9	10	0
Outside the village	68%	58%	80%	60%	65%	68%	83%
	87	11	20	6	20	25	5
Forest area of the village	10%	16%	8%	20%	6%	8%	17%
	13	3	2	2	2	3	1
On pasture of the village	9%	5%	12%	0%	10%	14%	0%
	12	1	3	0	3	5	0
On crop residue (wetland)	2%	0%	4%	0%	0%	5%	0%
	3	0	1	0	0	2	0
On crop residue (dryland)	3%	0%	12%	10%	0%	0%	0%
	4	0	3	1	0	0	0
NET	100%	100%	100%	100%	100%	100%	100%
	128	19	25	10	31	37	6

Table 56 - Q6.3 Where does your cattle graze freely

Only 20% of livestock owners plant fodder for their livestock, yet the majority thinks that there is no enough fodder for their livestock in their village. The majority of respondents that own livestock think that there is either more fodder (40%) or the amount has remained the same (31%) compared to 5 years ago. At the same time 69% of respondents say that they have to buy fodder or feed for their livestock.

			Beneficiaries			Non-beneficiaries			
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH		
Yes	42%	42%	29%	43%	44%	50%	41%		
	195	27	25	12	48	67	16		
No	58%	58%	71%	57%	56%	50%	59%		
	264	37	60	16	60	68	23		
NET	100%	100%	100%	100%	100%	100%	100%		
	459	64	85	28	108	135	39		

Table 57 - Q6.9 Enough fodder for your livestock in your village

# 6.9 Livelihoods and Income

Overall, respondents indicated that off-farm labor was the most important source of income, but this is the result of the number of landless households included in the survey. To other households, mainly the smallholding farmers, agricultural sales was more important. As mentioned, landless households are increasingly reliant on off-farm with 51% reporting off-farm work as the most important source of income. The main (first mentions) sources of income are; off-farm labor (35%), agricultural sales (29%) and on-farm labor (25%).

When considering the main produce from farms in AF and control villages it is immediately clear that nonbeneficiary farmers are better off; on average, they produce more, sell more and get a much greater income as a result. The better productivity could be the result of the better irrigation they enjoy in comparison to beneficiary farmers.

		Q7.3 Production (kilograms)		Q7.4 Sell (kilograms)		Q7.5 consume/use (kilograms)		Q7.6 Income (kyats)	
Ave	erages	AF Villages	Control Villages	AF Villages	Control Villages	AF Villages	Control Villages	AF Villages	Control Villages
Rice	132	3,702	5,818	2,324	4,528	1,334	1,137	729,231	1,330,264
Cereal	70	191	208	157	188	12	16	190,000	255,979
Pulses, beans and peanuts	251	779	957	680	872	30	31	392,129	454,451

Table 58 – Agricultural production, sales, consumption and income

In general, income from agriculture has decreased for 29% of the respondents compared with last year. The reasons include lower yields, crop failure and changes in prices which in part have been the result of natural disasters. It is perhaps the result of lower yields or crop failures that has forced more landless households to look for and do off-farming, including work as domestic and construction workers.

The income of 95% of the households is below 300,000 kyats per month. Over 90% of respondents reported that they had no savings, highlighting that they didn't have spare money for any emergencies

such as health expenditures. 44% of respondents have loans of more than 200,000 kyats and over 46% of respondents have debts amounting to more than 300,000 kyats.

While 33% of respondents mentioned that the last year was better than the one before, other 67% said it was the same (38%) or worse (29%) than the previous year. The survey probed respondents as to the reasons the last period was better or worse. The main reason respondents said it was better was due to better prices and better crop yields, while those who claimed the last year was worse, said that they encountered lower yields, lower prices and bad weather events.

		Beneficia	aries	Non-ben	eficiaries
Column % n	NET	Small Land- holding	Female Headed HH	Small Land- holding	Female Headed HH
Below average	29%	29%	29%	30%	25%
	119	37	9	62	11
about the same level	38%	37%	29%	39%	43%
	155	47	9	80	19
a good year above average	33%	34%	42%	31%	32%
	133	43	13	63	14
NET	100%	100%	100%	100%	100%
	407	127	31	205	44

 Table 59 - Q7.8 Income from agriculture compared to other years

Agriculture was the most important source of casual work for the sample as a whole. 62% of respondents mentioned that they relied on farming. Weeding seems to be the most common or important on-farm labor performed by respondents followed by harvesting and planting. It is clear that on-farm labor is highly seasonal and that not all labor available is needed during the different stages of the farming process.

The average income for males for doing on-farm labor was 3,000 kyats per day, while females only earn about 2,350 kyats per day. On average, respondents mentioned that up to 127 days were spent doing on-farm labor, with a significantly higher number of days worked by non-beneficiary landless households with 159 days compared to 109 from beneficiary landless households.

			Beneficiaries			Non-beneficiaries			
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH		
Planting	36%	30%	27%	38%	44%	33%	43%		
	304	39	35	24	92	69	45		
Weeding	53%	57%	41%	56%	60%	45%	64%		
	447	73	53	36	125	93	67		
Harvesting	41%	39%	32%	36%	51%	38%	40%		

Table 60 - Q7.14 Earned money with on-farm labor

	343	50	41	23	107	80	42
Tilling	19%	16%	18%	8%	22%	24%	14%
	160	21	23	5	46	50	15
No	38%	34%	50%	39%	31%	43%	32%
	318	43	64	25	64	89	33
Other	5%	1%	7%	2%	9%	5%	3%
	43	1	9	1	19	10	3
NET	100%	100%	100%	100%	100%	100%	100%
	840	128	128	64	208	208	104

Sources of income reported for respondent households clearly indicated that casual off-farm labor was the most important source over the entire sample. Being a domestic worker has become an important source of income, especially landless households. Being a domestic worker was mentioned as the off-farm work from 40% of all landless respondents.

Similar to on-farm labor, on-farm salaries are better for males. The average male salary is a bit higher than farm work with a daily wage of 3,250 kyats but females earn only about 1,800 kyats per day, which is considerably lower than on-farm labor. On average, 244 days are spent working of farm with that number going up to 258 among the landless non-beneficiary group while beneficiary female headed households work for only 200 days.

			Beneficiaries		Non-beneficiaries			
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH	
Hawker	4%	4%	2%	6%	5%	4%	4%	
	34	5	2	4	10	9	4	
Government staff	0%	1%	1%	0%	0%	0%	0%	
	4	1	1	0	1	1	0	
Business	6%	13%	5%	8%	4%	3%	7%	
	50	16	7	5	8	7	7	
Shop keeper	2%	1%	3%	0%	2%	4%	1%	
	18	1	4	0	4	8	1	
Craftsman	11%	9%	11%	11%	13%	13%	8%	
	95	12	14	7	28	26	8	
Construction worker	7%	13%	5%	8%	12%	4%	1%	
	62	17	7	5	24	8	1	
Driver	3%	2%	4%	3%	3%	3%	1%	
	22	2	5	2	6	6	1	
Domestic worker	31%	42%	31%	22%	39%	24%	25%	
	264	54	40	14	81	49	26	
No	39%	23%	41%	44%	29%	49%	55%	
	327	29	52	28	60	101	57	
Other	2%	1%	2%	0%	3%	2%	1%	
	16	1	3	0	7	4	1	

### Table 61 - Q7.17 Earned money from off-farm labor

NET	100%	100%	100%	100%	100%	100%	100%
	840	128	128	64	208	208	104

Off-farm labor is the most important source of income for landless households. Smallholding farmer households rely more on agricultural sales for income. Female headed households, on the other hand, earn income from a combination of off-farm labor and agricultural sales. 38% of beneficiary female headed household respondents and 36% from the non-beneficiary reported off-farm labor to be their major source of income followed by agricultural sales for 33% for beneficiary and 29% for non-beneficiary.

The table below shows that for beneficiary and non-beneficiary small landholding farmers and female headed households, agriculture related work (agricultural sales and on-farm labor) contribute to more than half of their households' income. For landless households, on the other hand, on-farm labor represents the second biggest source of income for that group. This means that agriculture is the main sector of the economy.

			Beneficiaries			Non-beneficiaries			
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH		
off-farm labor	44%	68%	36%	38%	57%	27%	36%		
	369	87	46	24	118	57	37		
Agricultural sales	29%	1%	48%	33%	1%	61%	29%		
	242	1	62	21	2	126	30		
On-farm labor	25%	31%	13%	27%	41%	11%	32%		
	214	40	16	17	85	23	33		
Remittance	1%	0%	3%	3%	1%	0%	3%		
	12	0	4	2	2	1	3		
Pension	0%	0%	0%	0%	0%	0%	1%		
	3	0	0	0	1	1	1		
NET	100%	100%	100%	100%	100%	100%	100%		
	840	128	128	64	208	208	104		

### Table 62 - Q7.20 Most important income source

# 6.10 Savings

Overwhelmingly respondents reported that they don't have savings, in fact 91% of all respondents said that their household has no savings. This highlights a situation where households live from pay day to pay day, and have no money to deal with any major issues that might affect their lives, such as medical emergencies. This is certainly a sign of how vulnerable households from all groups are.

			Beneficiaries		No	on-beneficiari	es
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH
less than 25,000	2%	2%	1%	2%	3%	3%	2%
	19	2	1	1	7	6	2
25,001-50,000	1%	3%	2%	0%	2%	0%	2%
	12	4	2	0	4	0	2
50,001-75,000	0%	0%	0%	0%	1%	0%	0%
	2	0	0	0	2	0	0
75,001-100,000	1%	2%	1%	0%	0%	1%	2%
	8	2	1	0	1	2	2
100,001-150,000	1%	1%	1%	0%	1%	0%	0%
	6	1	1	0	3	1	0
150,001-200,000	0%	0%	0%	0%	0%	1%	0%
	4	0	0	0	1	3	0
200,001-300,000	1%	1%	2%	0%	1%	2%	0%
	10	1	2	0	2	5	0
300,001 kyats and above	2%	1%	2%	3%	2%	3%	0%
	18	1	3	2	5	7	0
No savings	91%	91%	92%	95%	88%	88%	94%
	761	117	118	61	183	184	98
NET	100%	100%	100%	100%	100%	100%	100%
	840	128	128	64	208	208	104

Table 63 - Q7.23 Have savings - how much in total

Survey respondents were asked if they had taken any loans in the last year and to share with us the reason for taking those loans. 76% of all respondents have taken a loan with a total of 33% of all respondents borrowing more than 300,000 kyats. Smallholding farmers are considerably more in debt compared to other groups. **U Win Khine**, a small landholding farmer from **Aukle in Chauk** township reported, "*Because of the bad weather, the harvest is not good which in turn drive people into the vicious circle of loans and debts.*" The percentage of both beneficiary and non-beneficiary landless and female headed households who have taken loans amounting to more than 300,001 Kyats is also significantly higher than those borrowing smaller amounts. **Daw San Kyi**, from a landless household in **Ohyin village in Nyaung U** township reported, "We have to pay back the loans taken earlier while we also have to find ways to *survive. Sometimes we don't have anything to eat. We try hard to pay back and manage to survive. It's fine when we sell things. We can pay our debts when we come back. It doesn't work for families with children. When we invest in trades its ok but I myself can't do."* 

			Beneficiaries		No	on-beneficiari	es
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH
less than 25,000	2%	5%	1%	0%	2%	0%	2%
	13	6	1	0	4	0	2
25,001-50,000	4%	9%	2%	2%	6%	1%	6%
	36	11	3	1	12	3	6
50,001-75,000	3%	4%	2%	8%	2%	1%	4%
	23	5	2	5	5	2	4
75,001-100,000	7%	8%	5%	8%	9%	5%	7%
	59	10	7	5	19	11	7
100,001-150,000	8%	9%	5%	9%	10%	5%	9%
	64	12	6	6	21	10	9
150,001-200,000	8%	10%	8%	9%	7%	10%	7%
	71	13	10	6	15	20	7
200,001-300,000	11%	11%	13%	13%	12%	10%	9%
	92	14	16	8	25	20	9
300,001 kyats and above	33%	19%	43%	23%	20%	53%	30%
	277	24	55	15	41	111	31
No loan	24%	26%	22%	28%	32%	15%	28%
	205	33	28	18	66	31	29
NET	100%	100%	100%	100%	100%	100%	100%
	840	128	128	64	208	208	104

Table 64 - Q7.24 Have taken loans – how much

Overall, there are small differences in borrowing based on respondent types. Smallholding farmers are slightly more likely to borrow, while landless households are less likely to do so. Interestingly, nonbeneficiary smallholding farmers is the most likely group to borrow and at the moment 55% from that group owes more than 300,000 kyats. About 44% of respondents have loans more than 200,000 kyats.

Smallholding farmers are considerably more likely to borrow form the government, while landless households tend to borrow from family and friends more than other sources. Government overall is the main source of loans with 40% of respondents mentioning that, followed by family and friends with 35%. Other sources of loans were used a bit less. For example, 20% borrowed from PACT, and 15% from money lenders.

As mentioned, the main difference between groups is that smallholding farmers borrowed considerably more from the government. In total, 63% of farmers from both groups borrowed from the government. In other words, for 59% of farmers from the beneficiary and 65% farmers from the non-beneficiary groups, their source of loan is the government.

			Beneficiaries		No	on-beneficiari	es
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH
Government	40%	20%	59%	37%	12%	65%	36%
	254	19	59	17	17	115	27
Family/friend	35%	45%	35%	28%	39%	28%	36%
	223	43	35	13	56	49	27
PACT Myanmar	20%	15%	13%	11%	27%	19%	27%
	124	14	13	5	38	34	20
Mya Sein Yaung	16%	23%	34%	39%	8%	5%	5%
	99	22	34	18	12	9	4
Money lender	15%	17%	10%	17%	19%	15%	13%
	98	16	10	8	27	27	10
Shop-keeper	5%	2%	4%	4%	5%	3%	11%
	29	2	4	2	7	6	8
Micro-credit provider (low interest, 2.5% or less)	4%	4%	2%	4%	4%	6%	4%
	26	4	2	2	5	10	3
Village Savings and Loans Association	2%	4%	1%	2%	3%	0%	4%
	13	4	1	1	4	0	3
Other	17%	19%	13%	22%	19%	14%	20%
	108	18	13	10	27	25	15
NET	100%	100%	100%	100%	100%	100%	100%
	635	95	100	46	142	177	75

Table 65 - Q7. 25 From whom did you borrow

Most loans were for purchasing food with 43% of the total sample mentioning that as the most important use of the money. This was particularly important to landless households, with 61% or borrowers doing it for that main reason. This figures clearly illustrates the importance of taking loans as a way coping with food shortages in the households. **Daw Yin Yin Myint**, a landless tailor from **Ywar Thit village** in **Min Gyan** township reported, *"We borrowed money to buy food."* As mentioned, this is especially the case for landless households. In comparison, only 31% of smallholding farmers took loans to purchase food, though that figure goes up to 44% among beneficiary smallholding households.

Table 66 - Q7.26	most important	use of the loans	taken in the	last year
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		Beneficiaries			Non-beneficiaries		
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH
Food purchases	43%	64%	44%	37%	58%	23%	32%
	270	61	44	17	83	41	24
Buy agricultural inputs	20%	0%	16%	15%	1%	48%	21%
	125	0	16	7	1	85	16
Business investment	12%	7%	12%	13%	11%	12%	16%
	75	7	12	6	16	22	12

Health emergency	9%	8%	7%	13%	13%	2%	15%
	54	8	7	6	18	4	11
School/education fees/costs	6%	6%	6%	4%	6%	6%	4%
	36	6	6	2	9	10	3
Purchase of animals/ medicine for animals	3%	5%	5%	4%	2%	1%	5%
	21	5	5	2	3	2	4
House purchase or construction	2%	2%	4%	4%	1%	2%	1%
	15	2	4	2	2	4	1
Purchase of working tools or equipment	2%	1%	0%	0%	4%	1%	3%
	10	1	0	0	6	1	2
Repayment of loans	1%	1%	3%	7%	1%	0%	1%
	9	1	3	3	1	0	1
Others	1%	1%	2%	2%	0%	3%	0%
	9	1	2	1	0	5	0
Home improvement including water supply	1%	0%	0%	0%	2%	1%	1%
	6	0	0	0	3	2	1
Construction other than house	0%	0%	1%	0%	0%	1%	0%
	2	0	1	0	0	1	0
Land purchase/rent	0%	1%	0%	0%	0%	0%	0%
	1	1	0	0	0	0	0
Purchase of other assets	0%	2%	0%	0%	0%	0%	0%
	2	2	0	0	0	0	0
NET	100%	100%	100%	100%	100%	100%	100%
	635	95	100	46	142	177	75

Respondents were also asked about their household level of debt and to encourage their participation and answer to a rather personal question, the respondents were given the scale ranges of values for current levels of debt. Overall, 85% of respondents shared that they were currently in debt, with 57% owing more than 200,000 kyats at the moment. The percentage of small landholding farmers from both groups having more than 300,000 Kyats of debts is highest. This correlates with previous comments about small land holding farmers taking more loans than landless or female headed households.

#### Table 67 - Q7.27 have debts

		Beneficiaries			Non-beneficiaries		
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH
less than 25,000	1%	3%	0%	0%	2%	1%	0%
	7	3	0	0	3	1	0
25,001-50,000	6%	11%	6%	0%	6%	2%	13%
	38	10	6	0	9	3	10
50,001-75,000	2%	1%	1%	4%	4%	1%	0%
	10	1	1	2	5	1	0
75,001-100,000	6%	7%	7%	4%	6%	2%	12%

	38	7	7	2	9	4	9
100,001-150,000	6%	6%	4%	7%	8%	6%	8%
	41	6	4	3	12	10	6
150,001-200,000	7%	11%	8%	9%	6%	5%	4%
	43	10	8	4	9	9	3
200,001-300,000	11%	12%	9%	11%	13%	10%	9%
	68	11	9	5	19	17	7
300,001 kyats and above	46%	36%	54%	46%	35%	56%	47%
	293	34	54	21	49	100	35
No debts	15%	14%	11%	20%	19%	18%	7%
	97	13	11	9	27	32	5
NET	100%	100%	100%	100%	100%	100%	100%
	635	95	100	46	142	177	75

The questionnaire also asked about other sources of household income such as remittances and 15% of households mentioned that they received help from a family member. 25% of beneficiary female headed households mentioned receiving remittances (n=16 cases) which is proportionally higher compared to other groups. Most remittances are sent from within Myanmar (86%) with almost 48% of remittances being less than 50,000 kyats. Interestingly, 63% of the remittances received by non-beneficiary farmers are over 75,000 kyats, which is much more than what other groups receive.

		Beneficiaries			Non-beneficiaries		
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH
Yes	15%	13%	16%	25%	15%	15%	13%
	130	16	20	16	32	32	14
No	85%	88%	84%	75%	85%	85%	87%
	710	112	108	48	176	176	90
NET	100%	100%	100%	100%	100%	100%	100%
	840	128	128	64	208	208	104

# Table 68 - Q7.28 Get remittance from a family member

Respondents were simply asked what the average total income was for their household from all sources in a normal month. This was a closed question using set ranges of monthly income. From this questions we expect to get an idea of the income within each group to compare with each other and their overall situation in terms of food security and other measures of household wealth.

To facilitate comparison, we grouped the income ranges into equal intervals of 50,000 kyats. The most common household monthly income range reported by respondents was 50,000 to 100,000 kyats in all groups except for the non-beneficiary farmers who have a higher income compared to other groups. The proportion of non-beneficiary female-headed households with a monthly income between 50,000 and 100,000 Kyats is significantly higher at 41%. Overall 44% of respondents have an income lower than 100,000 kyats, but only 31% of non-beneficiary farmers share that with other groups, while beneficiary

female headed households, on the other hand, had the highest proportion of households with low income with 27% reporting an income under 50,000 kyats per month.

		E	Beneficiaries		Non-beneficiaries			
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH	
less than 50,000	16%	18%	17%	27%	14%	11%	16%	
	131	23	22	17	30	22	17	
50,001-100,000	28%	29%	25%	27%	32%	20%	41%	
	238	37	32	17	67	42	43	
100,001-150,000	21%	20%	24%	19%	21%	23%	15%	
	175	25	31	12	44	47	16	
150,001-200,000	17%	19%	18%	14%	14%	22%	13%	
	145	24	23	9	29	46	14	
200,001 and above	18%	15%	16%	14%	18%	25%	13%	
	151	19	20	9	38	51	14	
NET	100%	100%	100%	100%	100%	100%	100%	
	840	128	128	64	208	208	104	

Table 69 - Q7.31 Average total monthly income for your HH from all sources

Overall respondents believe that their income is increasing (37%) or at least stayed the same (41%) in the last year. The lowest income group, beneficiary female headed households, mentioned that income was stable (50%) or increased (36%), and together this makes them the most positive group with 86% total saying things are the same or better. On the other hand, the highest proportion from any group to say that income had decreased were the beneficiary smallholding farmers, with 26% saying that income had decreased in the last year.

FGD participants agree that farming along with off-farm labor are the main sources of income. Some groups mentioned how people can earn 4,000 Ks for cleaning weeds the whole day and 3,000 Ks for harvesting compared to 2,500 Ks last year. **Mr. Nyan Lin from Than Bo (North) village** said "*Last year, I could earn 1,000MMK per day. But now, I can earn 2,000 or 3,000MMK per day. The crop productivity has increased in this year compared to last year thanks to the rainfall."* 

The increase in wages is partly the result of labor shortage as people go to cities to work in companies and restaurants since there is no regular work. In general, however, there is agreement that wages have increased, while commodity prices have also increased. On the other hand, some FGDs also mentioned that laborers could be worse off because farmers do not hire them. Farmers prefer to use harvesters but the people in villages depend on farming or farming jobs for their livelihood and the use of harvesters means fewer jobs.

Females have also received pay increases: "Last year, we got 800 kyats for doing weeding on someone else's farm. We get 1000MMK. We work from 7AM to 10AM, and got 800MMK last year, but now, we get 1,000MMK for doing the same." Daw Mar Thi from Kan Gyi Gone village.

	·		Beneficiaries		Non-beneficiaries		
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH
Increased	37%	41%	34%	36%	40%	35%	32%
	309	53	43	23	84	73	33
Stable	41%	34%	41%	50%	36%	44%	50%
	345	43	52	32	74	92	52
Decreased	22%	25%	26%	14%	24%	21%	18%
	186	32	33	9	50	43	19
NET	100%	100%	100%	100%	100%	100%	100%
	840	128	128	64	208	208	104

Table 70 - Q7.32 income compared to previous year

Households were asked about the farming machinery they own as it could help to calculate overall household wealth. Information about the ownership of agricultural equipment and machinery by groups, not only shows the wealth of a household or group, but also shows the investment households make in agriculture. If agricultural production is to meet household needs and increase food security, an investment is required in technologies that lift productivity in agriculture. Any changes in technologies can be assessed during the end-line of this project.

The table below shows that out of n=840, 513 respondents or 61% said that they possess no farming machinery. Not surprisingly, 82% of the landless households from both groups reported that they have no farming machinery. Sprayers and carts are the most common farming tools that beneficiary and nonbeneficiary small landholding farmers have, with the latter at a significant higher percentage with of 43% having sprayers compared to 27% for the beneficiary farmers.

Table 71	- 07.35 Do	vou have farm	machinery?
	- Q7.33 D0	you have farm	machine y:

			Beneficiaries			Non-beneficiaries		
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH	
Sprayer	18%	0%	27%	5%	2%	43%	18%	
	151	0	35	3	5	89	19	
Cart	15%	0%	30%	13%	3%	28%	13%	
	124	0	38	8	7	58	13	
Mattock	9%	5%	10%	6%	11%	12%	5%	
	76	6	13	4	23	25	5	
Edger	8%	8%	5%	9%	9%	11%	8%	
	70	10	6	6	18	22	8	

Irrigation pump	7%	0%	9%	2%	2%	16%	3%
	55	0	12	1	5	34	3
Spade	6%	3%	6%	3%	7%	9%	2%
	49	4	8	2	14	19	2
Sickle	4%	1%	0%	3%	6%	7%	3%
	33	1	0	2	12	15	3
Power tiller	2%	0%	4%	2%	0%	5%	0%
	16	0	5	1	0	10	0
Other	4%	2%	2%	0%	2%	8%	7%
	33	2	3	0	5	16	7
No farm machinery	61%	89%	40%	73%	77%	34%	68%
	513	114	51	47	160	70	71
NET	100%	100%	100%	100%	100%	100%	100%
	840	128	128	64	208	208	104

Smallholding farming households own much of the means of production, the equipment, but in general there is a low level of sophistication and technology used in agriculture at the moment. Any change and investment will have an impact on productivity. The program can support other groups, landless and female headed households to invest in agricultural equipment and machinery, so they can offer their services to farmers, ensuring that those households have other sources of income and livelihood.

# 6.11 Housing and household assets

The questionnaire collected data on the ownership of household assets which again allows the assessment of a household's wealth. Households were asked about the ownership of various assets including; owning a house, type of dwelling, walls, floor, type of toilet used and other household items owned by members of the household.

Overwhelmingly, respondents own their home with an overall 94% saying they did. The highest proportion among any group was from female headed households with 98% saying they owned the house.

Table 72 - Q7.36 own a house

		Beneficiaries			Non-beneficiaries		es
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH
Yes	94%	92%	93%	97%	91%	95%	99%
	788	118	119	62	189	197	103
No	6%	8%	7%	3%	9%	5%	1%
	52	10	9	2	19	11	1
NET	100%	100%	100%	100%	100%	100%	100%
	840	128	128	64	208	208	104

Wooden and bamboo products are the main building materials for dwellings, while only 2% of the households have a brick house. There are very small variations between different groups or between beneficiary and non-beneficiary households. This may be the best physical indicator of the living standard of people in the rural areas of the Dry Zone of Myanmar in general.

		Beneficiaries		Non-beneficiaries		es	
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH
Wooden house	47%	38%	44%	41%	49%	50%	52%
	391	49	56	26	102	104	54
Bamboo	35%	42%	36%	38%	34%	29%	35%
	290	54	46	24	70	60	36
Hut with post life 2-3 years	9%	11%	7%	14%	11%	8%	5%
	75	14	9	9	22	16	5
Hut with post life 1 year	5%	7%	3%	2%	5%	4%	5%
	39	9	4	1	11	9	5
Brick house	2%	0%	2%	5%	1%	3%	2%
	17	0	3	3	2	7	2
Brick nogging	3%	2%	8%	2%	0%	6%	2%
	28	2	10	1	1	12	2
NET	100%	100%	100%	100%	100%	100%	100%
	840	128	128	64	208	208	104

Table 73 - Q8.1 Type of dwelling (Observation)

Landless households are more likely to have Thatch / Large Leaves / Palm / Dhani roofing compared to other groups, while beneficiaries overall are also more likely to have Thatch / Large Leaves / Palm / Dhani roofing compared to non-beneficiaries. Conversely, non-beneficiary households are more likely to have zinc/corrugated sheet with 80% having that type of roof compared to only 69% from beneficiary households.

A clear and overwhelming majority of households use bamboo as the main construction material for walls. All household groups were similar in this aspect which means the use of bamboo must be related to its availability more than the wealth of households. Finally, 55% of households has a simple dirt earth floor, with 25% using bamboo and only 13% using wood as flooring material.

	Beneficiaries		Non-beneficiaries				
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH
Thatch / Large Leaves / Palm / Dhani	20%	32%	21%	23%	23%	11%	13%
	167	41	27	15	47	23	14
Bamboo	3%	2%	1%	6%	4%	4%	4%

### Table 74 - Q8.2 Roof material

	28	3	1	4	8	8	4
Wood	0%	0%	0%	0%	0%	0%	0%
	1	0	0	0	0	1	0
Zinc/Corrugated sheet	76%	63%	76%	70%	74%	84%	83%
	636	80	97	45	153	175	86
Tile / Brick	1%	3%	2%	0%	0%	0%	0%
	8	4	3	0	0	1	0
NET	100%	100%	100%	100%	100%	100%	100%
	840	128	128	64	208	208	104

# Table 75 - Q8.3 Wall material

		Beneficiaries		Non-beneficiaries		es	
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH
Bamboo	85%	84%	73%	75%	90%	87%	90%
	712	107	94	48	188	181	94
Thatch / Large Leaves / Palm / Dhani	6%	13%	11%	13%	5%	1%	3%
	54	17	14	8	10	2	3
Tile / Brick	5%	1%	11%	6%	1%	7%	3%
	40	1	14	4	3	15	3
Wood	2%	1%	3%	5%	2%	2%	2%
	18	1	4	3	4	4	2
Corrugated sheet	1%	1%	0%	0%	1%	1%	0%
	5	1	0	0	2	2	0
Concrete	1%	1%	1%	2%	0%	2%	2%
	9	1	1	1	0	4	2
Others (specify)	0%	0%	1%	0%	0%	0%	0%
	2	0	1	0	1	0	0
NET	100%	100%	100%	100%	100%	100%	100%
	840	128	128	64	208	208	104

### Table 76 - Q8.4 Floor material

		Beneficiaries			Non-benefic	iaries	
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH
Wood	13%	11%	16%	17%	8%	16%	13%
	110	14	21	11	17	34	13
Concrete	5%	2%	7%	9%	2%	7%	6%
	42	3	9	6	4	14	6
Brick	2%	0%	5%	2%	1%	2%	1%
	15	0	6	1	2	5	1
Bamboo	25%	27%	20%	17%	30%	20%	28%
	206	35	26	11	63	42	29
Earth	55%	59%	52%	55%	58%	54%	53%

	465	75	66	35	121	113	55
Others (specify)	0%	1%	0%	0%	0%	0%	0%
	2	1	0	0	1	0	0
NET	100%	100%	100%	100%	100%	100%	100%
	840	128	128	64	208	208	104

The main type of toilet used by al groups is a flush to pit latrine. Overall 66% of respondents uses this type of latrine. 19% of respondents still have no facilities and have to use the field or the bush, and that figure increases to 23% among beneficiaries compared to only 16% of non-beneficiaries.

		Beneficiaries		Non-beneficiaries			
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH
Flush/piped sewer system	1%	0%	1%	0%	1%	1%	0%
	6	0	1	0	3	2	0
Flush to septic tank	1%	1%	1%	2%	0%	0%	1%
	6	1	1	1	1	1	1
Flush, to pit latrine	66%	59%	66%	66%	65%	72%	63%
	551	75	84	42	135	150	65
Flush, to elsewhere	2%	2%	2%	0%	0%	2%	4%
	13	2	3	0	0	4	4
Ventilated improved pit latrine	4%	4%	4%	2%	3%	6%	5%
	35	5	5	1	6	13	5
Pit latrine with slab	8%	9%	5%	8%	9%	5%	10%
	63	11	7	5	19	11	10
Pit latrine without slab / open pit	1%	0%	2%	2%	0%	2%	1%
	10	0	3	1	1	4	1
Hanging toilet	0%	1%	0%	0%	0%	0%	0%
	1	1	0	0	0	0	0
No facilities, or bush or field	19%	27%	20%	23%	21%	12%	17%
	159	34	25	15	43	24	18
NET	100%	100%	100%	100%	100%	100%	100%
	840	128	128	64	208	208	104

Table 77 - Q8.5 Type of toilet facility is used by the house

Respondents were read a list of household assets and were asked if they or anyone else in the household owned any of those items. The combination of answers paint a striking picture of the wealth level for each group. Clearly, non-beneficiary smallholding farmers are in a better position compared to all other groups, they owned more individual assets or combination of assets, in fact, a higher proportion of non-beneficiary farmers own the top six assets compared to other groups. On the other hand, female headed households own fewer assets compared to other groups. Indeed, for every asset type, a smaller proportion of female headed households owns that asset compared to other groups.

The most commonly owned asset is mobile phone, with 71% of households saying that someone in the households owns a mobile phone, with 69% of beneficiary and 72% of non-beneficiary households owning mobile phones. This is also significant in that the percentage of mobile phone ownership across all types of respondent households under both the beneficiary and non-beneficiary groups is higher than the percentage of ownership for each of the remaining items. The second most own item is motorcycles with 61% of households owning one.

		Beneficiaries			Non-beneficiaries		
Column % n	NET	Landless	Small Land- holding	Female Headed HH	Landless	Small Land- holding	Female Headed HH
Cell phone	71%	67%	75%	59%	73%	80%	55%
	595	86	96	38	151	167	57
Motorcycle	61%	56%	74%	42%	60%	75%	39%
	516	72	95	27	124	157	41
Bicycle	40%	31%	32%	28%	46%	54%	29%
	337	40	41	18	96	112	30
Radio	38%	30%	44%	23%	40%	44%	36%
	322	39	56	15	84	91	37
TV	33%	22%	34%	34%	30%	45%	28%
	278	28	44	22	62	93	29
DVD / EVD player	28%	20%	31%	25%	26%	38%	18%
	234	26	40	16	54	79	19
Sewing machine	6%	2%	10%	3%	5%	9%	8%
	53	2	13	2	10	18	8
Fridge	4%	2%	3%	2%	2%	7%	3%
	31	3	4	1	5	15	3
Trawler jeep	2%	1%	2%	0%	0%	4%	1%
	13	1	3	0	0	8	1
Boat with motor	0%	2%	0%	0%	0%	0%	0%
	4	3	0	0	0	1	0
Other	1%	2%	2%	0%	1%	1%	1%
	11	3	2	0	3	2	1
NET	100%	100%	100%	100%	100%	100%	100%
	840	128	128	64	208	208	104

# Table 78 - Q8.6 Other assets

# **7** VILLAGE SUMMARY

The main purpose of the following summary is to provide a baseline at village level. As previously mentioned, MSR's team conducted the survey in 43 villages as there were only 16 respondents in one of them (Gway Pin Yoe). In the additional village, Kyauk Tan, the remaining 4 interviews were conducted.

The summary displays key indicators related to water access, food security, and livelihoods in each village. Apart from being the baseline for each village, the summary can inform future strategies and needs of projects implemented by UNDP and their partners.

Despite the range of answers and variability between villages, it is possible to observe some general trends. One of the most important concerns the causes of food insecurity. The majority of respondents in nearly all villages said that lack of money (either mentioned as shortage of labor or money) is the main cause of food insecurity. Droughts or floods were also mentioned by a significant number of respondents, particularly in Shwe Ka Hpyu (55%), Myit Nar Kaing (55%), Koke Ke Ywar Thit (45%), and Kyauk Yan Min (45%).

Regarding livelihoods, with the exception of Shwe Ka Hpyu (70%), Gway Pin Kone (70%), and Twin Chaung (75%), 80% or more of respondents owned their own house. These numbers are positively high especially when we consider that 40% of respondents were *landless*, that is, don't own farmland. Along this line, in most of the villages about 50% of the respondents had farmland, which means that only about 50% of the female headed households had farmland.

Irrigation is one variable that is highly uniform at the individual village level. So when irrigation water is available most households with farmland would use and when it was not available for the village as a whole only a few households would have an irrigation system, exemplified by Ah Neint.

Water collection system variad considerable from village to village and often according to the season, as included in the summary below.

At the broadest level, the household survey confirms that food security and agricultural resilience are complex phenomena made of dependent and independent variables. For example, there is no clear correlation between ownership of livestock and food security. One possible reason is the low number of livestock owned, which could not be enough to secure food in lean months. However, a strategy aimed at improving livestock production could still increase food security but strong evidence for such a strategy would need to be generated.

Equally, there is no clear correlation between water availability and food security. In Yone Taw, all households with farming land have irrigation system, water provision is reliable and available to all households throughout the year and yet 55% of the households didn't have enough to eat for a least one month in the previous 12 months. However, in Tint Tei, where water is also sufficient and reliable and all

households with farming land use irrigation, the number of households that didn't have enough to eat for a least one month in the previous 12 months drops to 15%, the lowest level among all villages (only Ma Khauk had the same number).

By adding the monthly income variable to that comparison, we start to understanding why Tint Tei might have a much lower number of households didn't have enough to eat in the past year.

	Yone Taw	Tint Tei
less than 50,000	25%	5%
50,001-100,000	25%	10%
100,001-150,000	40%	10%
150,001-200,000	5%	30%
200,001 and above	5%	45%

# Table 79 - Average Monthly Income

Therefore, when compared to Yone Taw, a higher income in Tint Tei might have diminished food scarcity, especially because in both villages food insecurity is primarily linked to lack of money (65%). It is important, however, to limit the scope of such comparison. It only means that in the case of Tint Tei a combination of water availability, irrigation, land for farming and comparatively higher incomes is related to a higher level of food availability throughout the year.

Such finding can be used for further analysis, by, for example, comparing the two villages with the highest levels of food availability throughout the year, Ma Khauk and Tint Tei. Both villages have almost identical water availability, irrigation, proportion of households with livestock and average monthly income. Again, this means there is a correlation between such variables in those two villages but they are not found across all villages. For example, Tha Pyay Taw has reliable and sufficient water throughout the year, 80% of households with farming land use irrigation, 70% own livestock, income distribution similar to Ma Khauk and Tint Tei but surprisingly 75% of households didn't have enough to eat for at least one month in the previous year, 5 times more than the number of Ma Khauk and Tint Tei.

Such complexity does not invalidate comparisons but highlights the need to include a range of variables and work at both household type and village level. With this in mind, we produced the summary for each village that follows.

# Village Summary: Ah Neint

% of farming HHs	% using irrigation water
45%	44%

**Drinking water** 

	Dry	Wet
	Season	Season
Shallow well	70%	70%
Deep-tube well	15%	15%

	Dry	Wet
	Season	Season
0	85%	85%
up to 100 m	0%	0%
101-200 m	10%	10%
201-300 m	5%	5%
up to 1 km	0%	0%
more than 1 km	0%	0%

Average distance to water source

drinking water supply sufficient and reliable - 100%

Water for livestock - Proportion of households that own livestock: 50%

Food Security - Lack of food in the past year: 50% didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers): shortage of work 60% lack of money 35%

# Livelihoods - Sources of income

### Average household monthly income

less than 50,000	5%
50,001-100,000	25%
100,001-150,000	35%
150,001-200,000	15%
200,001 and above	20%

Proportion of household who own a house: 100%





# Village Summary: Than Bo (North)

### Irrigation water

% of farming HHs	% using irrigation water
50%	0%

### **Drinking water**

	Dry	Wet
	Season	Season
Deep-tube well	100%	100%
Pond	-	5%

	Dry	Wet
	Season	Season
0	0%	0%
up to 100 m	35%	40%
101-200 m	40%	40%
201-300 m	20%	15%
up to 1 km	5%	5%
more than 1 km	0%	0%

Average distance to water source

Drinking water supply sufficient and reliable – 95% Yes

# Water for livestock - Proportion of households that own livestock: 55%

Food Security - Lack of food in the past year: 75% didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers): shortage of work 60% lack of money 60%

# Livelihoods - Sources of income

### Average household monthly income

less than 50,000	20%
50,001-100,000	25%
100,001-150,000	25%
150,001-200,000	15%
200,001 and above	15%

# Proportion of household who own a house: 95%




# Village Summary: Sin Ka

0	
% of farming HHs	% using irrigation
	water
50%	0%

**Drinking water** 

Irrigation water

	Dry	Wet
	Season	Season
Deep-tube well	100%	90%
Pond	-	10%

	Dry	Wet
	Season	Season
0	20%	25%
up to 100 m	35%	40%
101-200 m	5%	5%
201-300 m	5%	5%
up to 1 km	20%	25%
more than 1 km	15%	0%

Average distance to water source

Drinking water supply sufficient and reliable – 95% Yes

Water for livestock - Proportion of households that own livestock: 55%

Food Security - Lack of food in the past year: 70% didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers): shortage of work 70% lack of money 65%

# Livelihoods - Sources of income

### Average household monthly income

less than 50,000	30%
50,001-100,000	40%
100,001-150,000	20%
150,001-200,000	0%
200,001 and above	10%

Proportion of household who own a house: 100%



# Village Summary: Auk Lel

% of farming HHs	% using irrigation water
50%	0%

### **Drinking water**

Irrigation water

	Dry	Wet
	Season	Season
Deep-tube well	90%	90%
River	10%	10%

	Dry Season	Wet Season
0	5%	5%
up to 100 m	25%	45%
101-200 m	45%	45%
201-300 m	0%	0%
up to 1 km	25%	5%
more than 1 km	0%	0%

Average distance to water source

Drinking water supply sufficient and reliable – 100% Yes

Water for livestock - Proportion of households that own livestock: 85%

Food Security - Lack of food in the past year: 80% didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers): shortage of work 70% lack of money 35%

### Livelihoods - Sources of income

### Average household monthly income

less than 50,000	25%
50,001-100,000	55%
100,001-150,000	15%
150,001-200,000	0%
200,001 and above	5%

Proportion of household who own a house: 90%



# Village Summary: Htan Chauk Pin

### Irrigation water

% of farming HHs	% using irrigation water
50%	0%

### **Drinking water**

	Dry	Wet
	Season	Season
Deep-tube well	90%	10%
Unprotected well/spring	-	75%
Truck	10%	-

	Dry	Wet
	Season	Season
0	10%	55%
up to 100 m	15%	10%
101-200 m	30%	20%
201-300 m	25%	10%
up to 1 km	15%	5%
more than 1 km	5%	0%

Average distance to water source

Drinking water supply sufficient and reliable – 100% Yes

Water for livestock - Proportion of households that own livestock: 55%

Food Security - Lack of food in the past year: 70% didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers): shortage of work 60% lack of money 50%

# Livelihoods - Sources of income

### Average household monthly income

less than 50,000	10%
50,001-100,000	50%
100,001-150,000	20%
150,001-200,000	10%
200,001 and above	10%

Proportion of household who own a house: 95%



# Village Summary: Ma Hlwa Taung

### **Irrigation water**

% of farming HHs	% using irrigation water
50%	0%

### **Drinking water**

	Dry	Wet
	Season	Season
Deep-tube well	30%	-
Pond	35%	40%
Rainwater / Tank	-	60%

	Dry	Wet
	Season	Season
0	20%	35%
up to 100 m	15%	10%
101-200 m	5%	35%
201-300 m	15%	15%
up to 1 km	25%	5%
more than 1 km	20%	0%

Average distance to water source

Drinking water supply sufficient and reliable – 55% Yes

Water for livestock - Proportion of households that own livestock: 70%

Food Security - Lack of food in the past year: 80% didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers): shortage of work 65% lack of money 55%

# Livelihoods - Sources of income

### Average household monthly income

less than 50,000	10%
50,001-100,000	60%
100,001-150,000	0%
150,001-200,000	20%
200,001 and above	10%

### Proportion of household who own a house: 100%



### Village Summary: Koke Ke Ywar Thit

### **Irrigation water**

% of farming HHs	% using irrigation water
50%	0%

### **Drinking water**

	Dry	Wet
	Season	Season
Deep-tube well	20%	20%
Protected well	75%	75%

	Dry Season	Wet Season
0	0%	0%
up to 100 m	0%	0%
101-200 m	0%	0%
201-300 m	90%	90%
up to 1 km	10%	10%
more than 1 km	0%	0%

Average distance to water source

Drinking water supply sufficient and reliable – 55% Yes

### Water for livestock - Proportion of households that own livestock: 85%

Food Security - Lack of food in the past year: 70% didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers): shortage of work 50% lack of money 45% droughts-floods 45%

### Livelihoods - Sources of income

### Average household monthly income

less than 50,000	25%
50,001-100,000	55%
100,001-150,000	15%
150,001-200,000	0%
200,001 and above	5%

### Proportion of household who own a house: 100%



# Village Summary: Kyauk Yan

Irrigation	water
------------	-------

% of farming HHs	% using irrigation water
50%	0%

**Drinking water** 

	Dry	Wet
	Season	Season
Truck	90%	60%
Shallow well	10%	-
Rainwater/ Tank	-	40%

	Dry	Wet
	Season	Season
0	85%	100%
up to 100 m	0%	0%
101-200 m	5%	0%
201-300 m	5%	0%
up to 1 km	5%	0%
more than 1 km	0%	0%

Average distance to water source

Drinking water supply sufficient and reliable – 70% Yes

Water for livestock - Proportion of households that own livestock: 50%

Food Security - Lack of food in the past year: 55% didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers): shortage of work 50% droughts-floods 45%

# Livelihoods - Sources of income

### Average household monthly income

less than 50,000	10%
50,001-100,000	20%
100,001-150,000	15%
150,001-200,000	50%
200,001 and above	5%

Proportion of household who own a house: 100%



# Village Summary: Gway Pin Yoe

### Irrigation water

% of farming HHs	% using irrigation water
38%	0%

### **Drinking water**

	Dry	Wet
	Season	Season
Protected Well	38%	19%
Trunk/Unprotected well	38%	-
Rainwater/ Tank	-	44%

	Dry	Wet
	Season	Season
0	25%	44%
up to 100 m	0%	0%
101-200 m	6%	0%
201-300 m	31%	25%
up to 1 km	38%	31%
more than 1 km	0%	0%

Average distance to water source

Drinking water supply sufficient and reliable – 44% Yes

Water for livestock - Proportion of households that own livestock: 50%

Food Security - Lack of food in the past year: 56% didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers): shortage of work 81% droughts-floods 44%

# Livelihoods - Sources of income

### Average household monthly income

less than 50,000	19%
50,001-100,000	38%
100,001-150,000	38%
150,001-200,000	6%
200,001 and above	0%

# Proportion of household who own a house: 100%



# Village Summary: Hta Naung Taing

### Irrigation water

% of farming HHs	% using irrigation water
50%	100%

### **Drinking water**

	Dry	Wet
	Season	Season
Protective well	35%	
Shallow well	30%	25%
Rainwater/ Tank		40%

	Dry	Wet
	Season	Season
0	40%	60%
up to 100 m	0%	0%
101-200 m	20%	20%
201-300 m	5%	0%
up to 1 km	15%	20%
more than 1 km	20%	0%

Average distance to water source

Drinking water supply sufficient and reliable – 100% Yes

Water for livestock - Proportion of households that own livestock: 50%

Food Security - Lack of food in the past year: 40% didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers): shortage of work 50% droughts-floods 45%

# Livelihoods - Sources of income

### Average household monthly income

less than 50,000	5%
50,001-100,000	30%
100,001-150,000	10%
150,001-200,000	15%
200,001 and above	40%

Proportion of household who own a house: 95%



# Village Summary: Shar Taw

Irrigation	water
------------	-------

% of farming HHs	% using irrigation water
38%	50%

**Drinking water** 

	Dry	Wet
	Season	Season
Shallow well	45%	50%
Protected well	25%	25%

	Dry	Wet
	Season	Season
0	65%	65%
up to 100 m	0%	0%
101-200 m	15%	15%
201-300 m	15%	15%
up to 1 km	5%	5%
more than 1 km	0%	0%

Average distance to water source

Drinking water supply sufficient and reliable –95% Yes

Water for livestock - Proportion of households that own livestock: 45%

Food Security - Lack of food in the past year: 35% didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers): shortage of work 50% droughts-floods 40%

# Livelihoods - Sources of income

### Average household monthly income

less than 50,000	0%
50,001-100,000	15%
100,001-150,000	35%
150,001-200,000	20%
200,001 and above	30%

Proportion of household who own a house: 85%



# Village Summary: Ya Thar

Irrigation w	vater
--------------	-------

% of farming HHs	% using irrigation water	
45%	11%	

**Drinking water** 

	Dry	Wet
	Season	Season
Protected well	75%	70%
Rainwater/ Tank	15%	25%

	Dry	Wet
	Season	Season
0	20%	30%
up to 100 m	0%	0%
101-200 m	0%	5%
201-300 m	50%	40%
up to 1 km	20%	25%
more than 1 km	10%	0%

Average distance to water source

Drinking water supply sufficient and reliable -35% Yes

Water for livestock - Proportion of households that own livestock: 60%

Food Security - Lack of food in the past year: 70% didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers): shortage of work 55% droughts-floods 30%

### Livelihoods - Sources of income

### Average household monthly income

less than 50,000	5%
50,001-100,000	40%
100,001-150,000	15%
150,001-200,000	15%
200,001 and above	25%

Proportion of household who own a house: 100%



# Village Summary: Nant Thar Hlaing

### Irrigation water

% of farming HHs	% using irrigation	
	water	
45%	33%	

### **Drinking water**

	Dry	Wet
	Season	Season
Shallow well	60%	60%
Hand Pump	25%	25%

	Dry	Wet
	Season	Season
0	90%	95%
up to 100 m	0%	0%
101-200 m	10%	5%
201-300 m	0%	0%
up to 1 km	0%	0%
more than 1 km	0%	0%

Average distance to water source

Drinking water supply sufficient and reliable –95% Yes

### Water for livestock - Proportion of households that own livestock: 70%

Food Security - Lack of food in the past year: 75% didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers): shortage of work 50% lack of money 40%

### Livelihoods - Sources of income

### Average household monthly income

less than 50,000	20%
50,001-100,000	25%
100,001-150,000	30%
150,001-200,000	20%
200,001 and above	5%

### Proportion of household who own a house: 90%



# Village Summary: Nga Paing Taw

### Irrigation water

% of farming HHs	% using irrigation water
50%	0%

### **Drinking water**

	Dry	Wet
	Season	Season
Deep-tube well	65%	-
Protected well	25%	25%
Rainwater/ Tank	-	55%

	Dry	Wet
	Season	Season
0	30%	60%
up to 100 m	0%	0%
101-200 m	0%	0%
201-300 m	35%	5%
up to 1 km	15%	35%
more than 1 km	20%	0%

Average distance to water source

Drinking water supply sufficient and reliable - 85% Yes

Water for livestock - Proportion of households that own livestock: 65%

Food Security - Lack of food in the past year: 50% didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers): lack of money 35% droughts/floods 35%

# Livelihoods - Sources of income

### Average household monthly income

less than 50,000	25%
50,001-100,000	35%
100,001-150,000	10%
150,001-200,000	10%
200,001 and above	20%

### Proportion of household who own a house: 100%



# Village Summary: Shwe Ka Hpyu

### Irrigation water

% of farming HHs	% using irrigation water
50%	0%

### **Drinking water**

	Dry	Wet
	Season	Season
Deep-tube well	75%	40%
Protected well	25%	-
Pond	-	35%

	Dry	Wet
	Season	Season
0	50%	40%
up to 100 m	5%	0%
101-200 m	0%	0%
201-300 m	40%	50%
up to 1 km	5%	10%
more than 1 km	0%	0%

Average distance to water source

Drinking water supply sufficient and reliable – 100% Yes

Water for livestock - Proportion of households that own livestock: 65%

Food Security - Lack of food in the past year: 55% didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers): lack of money 45% droughts/floods 55%

# Livelihoods - Sources of income

### Average household monthly income

less than 50,000	25%
50,001-100,000	25%
100,001-150,000	40%
150,001-200,000	10%
200,001 and above	0%

Proportion of household who own a house: 70%



# Village Summary: Kyo Pin Thar

### Irrigation water

% of farming HHs	% using irrigation water
50%	0%

### **Drinking water**

	Dry	Wet
	Season	Season
Deep-tube well	80%	25%
Public tap	20%	-
Rainwater/ Tank	-	65%

	Dry	Wet
	Season	Season
0	0%	45%
up to 100 m	0%	0%
101-200 m	0%	0%
201-300 m	55%	20%
up to 1 km	20%	30%
more than 1 km	25%	5%

Average distance to water source

Drinking water supply sufficient and reliable – 100% Yes

Water for livestock - Proportion of households that own livestock: 70%

Food Security - Lack of food in the past year: 55% didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers): lack of money 45% drou

# droughts/floods 40%

# Livelihoods - Sources of income

### Average household monthly income

less than 50,000	25%
50,001-100,000	30%
100,001-150,000	15%
150,001-200,000	20%
200,001 and above	10%

Proportion of household who own a house: 100%



# Village Summary: Ohn Hne Chaung

### **Irrigation water**

% of farming HHs	% using irrigation water
50%	90%

### **Drinking water**

	Dry	Wet
	Season	Season
River	85%	85%
Deep well	10%	15%

	Dry Season	Wet Season
0	10%	10%
up to 100 m	0%	0%
101-200 m	0%	0%
201-300 m	55%	55%
up to 1 km	10%	35%
more than 1 km	25%	0%

Average distance to water source

Drinking water supply sufficient and reliable – 100% Yes

### Water for livestock - Proportion of households that own livestock: 60%

Food Security - Lack of food in the past year: 50% didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers): lack of money 50% lack of work 30%

### Livelihoods - Sources of income

### Average household monthly income

less than 50,000	30%
50,001-100,000	35%
100,001-150,000	10%
150,001-200,000	15%
200,001 and above	10%

# Proportion of household who own a house: 95%



# Village Summary: Kan Gyi Kone (Ywar Thit)

### **Irrigation water**

% of farming HHs	% using irrigation water
50%	0%

### **Drinking water**

	Dry	Wet
	Season	Season
Public system	90%	70%
Deep well	10%	15%

	Dry Season	Wet Season
0	100%	85%
up to 100 m	0%	0%
101-200 m	0%	0%
201-300 m	0%	5%
up to 1 km	0%	10%
more than 1 km	0%	0%

Average distance to water source

Drinking water supply sufficient and reliable – 95% Yes

# Water for livestock - Proportion of households that own livestock: 70%

Food Security - Lack of food in the past year: 75% didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers): lack of money 50% lack of work 40%

### Livelihoods - Sources of income

### Average household monthly income

less than 50,000	10%
50,001-100,000	30%
100,001-150,000	25%
150,001-200,000	25%
200,001 and above	10%

Proportion of household who own a house: 100%



# Village Summary: U Yin Su

% of farming HHs	% using irrigation water
45%	0%

Irrigation water

Drinking v	vater
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	Dry	Wet
	Season	Season
Protected well	75%	65%
Deep well	15%	15%

	Dry Season	Wet Season
0	15%	10%
up to 100 m	0%	0%
101-200 m	0%	0%
201-300 m	20%	30%
up to 1 km	30%	40%
more than 1 km	35%	20%

Average distance to water source

Drinking water supply sufficient and reliable – 85% Yes

Water for livestock - Proportion of households that own livestock: 70%

Food Security - Lack of food in the past year: 80% didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers): drought-flood 45% lack of land 35%

# Livelihoods - Sources of income

### Average household monthly income

less than 50,000	25%
50,001-100,000	35%
100,001-150,000	15%
150,001-200,000	25%
200,001 and above	0%

Proportion of household who own a house: 90%



# Village Summary: Ma Yaunt Ye (Shwe Hlaing)

### **Irrigation water**

% of farming HHs	% using irrigation water
50%	0%

### **Drinking water**

	Dry	Wet
	Season	Season
Deep well	80%	25%
Public System	20%	-
Rainwater/Tank	-	75%

	Dry	Wet
	Season	Season
0	60%	95%
up to 100 m	0%	0%
101-200 m	0%	0%
201-300 m	30%	5%
up to 1 km	10%	0%
more than 1 km	0%	0%

Average distance to water source

Drinking water supply sufficient and reliable – 95% Yes

Water for livestock - Proportion of households that own livestock: 40%

Food Security - Lack of food in the past year: 55% didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers): lack of work 45% droughts-flood 35%

# Livelihoods - Sources of income

### Average household monthly income

less than 50,000	25%
50,001-100,000	30%
100,001-150,000	5%
150,001-200,000	15%
200,001 and above	25%

Proportion of household who own a house: 95%



# Village Summary: Taung Bi

% of farming HHs	% using irrigation water
40%	0%

# Drinking water

Irrigation water

	Dry	Wet Season
River	35%	40%
Public System	35%	45%

	Dry	Wet
	Season	Season
0	50%	55%
up to 100 m	0%	0%
101-200 m	0%	0%
201-300 m	25%	20%
up to 1 km	0%	25%
more than 1 km	25%	0%

Average distance to water source

Drinking water supply sufficient and reliable – 95% Yes

Water for livestock - Proportion of households that own livestock: 45%

Food Security - Lack of food in the past year: 50% didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers): lack of money 40% drought-flood 40%

# Livelihoods - Sources of income

### Average household monthly income

less than 50,000	5%
50,001-100,000	0%
100,001-150,000	20%
150,001-200,000	25%
200,001 and above	50%

Proportion of household who own a house: 100%



# Village Summary: Twin Chaung

Irrigation water	
% of farming HHs	% using irrigation water
50%	10%
5070	1070

### **Drinking water**

	Dry	Wet
	Season	Season
Public System	85%	85%

	Dry	Wet
	Season	Season
0	95%	95%
up to 100 m	0%	0%
101-200 m	0%	0%
201-300 m	5%	5%
up to 1 km	0%	0%
more than 1 km	0%	0%

Average distance to water source

Drinking water supply sufficient and reliable - 50% Yes

Water for livestock - Proportion of households that own livestock: 80%

Food Security - Lack of food in the past year: 50% didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers): lack of work 60%,

lack of money 20%

# Livelihoods - Sources of income

### Average household monthly income

less than 50,000	30%
50,001-100,000	50%
100,001-150,000	10%
150,001-200,000	5%
200,001 and above	5%

Proportion of household who own a house: 75%



# Village Summary: Te Gyi Kone

% of farming HHs	% using irrigation		
	water		
50%	30%		

### **Drinking water**

Irrigation water

	Dry	Wet
	Season	Season
Protected well	55%	55%
Deep well	15%	15%

	Dry Season	Wet Season
0	65%	65%
up to 100 m	20%	20%
101-200 m	10%	10%
201-300 m	5%	5%
up to 1 km	0%	0%
more than 1 km	0%	0%

Average distance to water source

Drinking water supply sufficient and reliable – 100% Yes

Water for livestock - Proportion of households that own livestock: 20%

Food Security - Lack of food in the past year: 60% didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers). Tack of work 45%

# Livelihoods - Sources of income

### Average household monthly income

less than 50,000	20%
50,001-100,000	20%
100,001-150,000	30%
150,001-200,000	10%
200,001 and above	20%

Proportion of household who own a house: 95%



# Village Summary: Taung Kyar

Irrigation	water
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% of farming HHs	% using irrigation water
55%	0%

### **Drinking water**

	Dry	Wet
	Season	Season
Rainwater Tank	25%	80%
Unprotected well	25%	-
Pond	-	15%

	Dry	Wet
	Season	Season
0	20%	45%
up to 100 m	15%	0%
101-200 m	30%	15%
201-300 m	25%	20%
up to 1 km	5%	15%
more than 1 km	5%	5%

Average distance to water source

Drinking water supply sufficient and reliable – 45% Yes

Water for livestock - Proportion of households that own livestock: 75%

Food Security - Lack of food in the past year: 65% didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers): lack of work 60%

lack of money 40%

# Livelihoods - Sources of income

### Average household monthly income

less than 50,000	5%
50,001-100,000	25%
100,001-150,000	30%
150,001-200,000	25%
200,001 and above	15%

Proportion of household who own a house: 100%



# Village Summary: Kyaung Kone

# Irrigation water

% of farming HHs	% using irrigation water
50%	0%

### **Drinking water**

	Dry	Wet
	Season	Season
Protected well	55%	60%
River	25%	20%

	Dry	Wet
	Season	Season
0	25%	25%
up to 100 m	0%	5%
101-200 m	0%	0%
201-300 m	45%	45%
up to 1 km	30%	25%
more than 1 km	0%	0%

Average distance to water source

Drinking water supply sufficient and reliable – 100% Yes

# Water for livestock - Proportion of households that own livestock: 65%

Food Security - Lack of food in the past year: 50% didn't have enough at least in one month.



# Livelihoods - Sources of income

### Average household monthly income

less than 50,000	15%
50,001-100,000	25%
100,001-150,000	15%
150,001-200,000	20%
200,001 and above	25%

Proportion of household who own a house: 85%



# Village Summary: Myit Nar Kaing

### **Irrigation water**

% of farming HHs	% using irrigation water
50%	0%

### **Drinking water**

	Dry	Wet
	Season	Season
Hand Pump	75%	75%
Shallow well	10%	10%

	Dry	Wet
	Season	Season
0	75%	75%
up to 100 m	5%	5%
101-200 m	15%	15%
201-300 m	5%	5%
up to 1 km	0%	0%
more than 1 km	0%	0%

Average distance to water source

Drinking water supply sufficient and reliable - 60% Yes

Water for livestock - Proportion of households that own livestock: 70%

Food Security - Lack of food in the past year: 40% didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers) drought-flood 55%

# Livelihoods - Sources of income

### Average household monthly income

less than 50,000	0%
50,001-100,000	30%
100,001-150,000	40%
150,001-200,000	20%
200,001 and above	10%

Proportion of household who own a house: 100%



# Village Summary: Ma Yoe Taw (North)

### **Irrigation water**

% of farming HHs	% using irrigation water
50%	60%

### **Drinking water**

	Dry	Wet
	Season	Season
Pond	35%	35%
Protected well	20%	20%

	Dry Season	Wet Season
0	30%	30%
up to 100 m	5%	5%
101-200 m	40%	40%
201-300 m	15%	15%
up to 1 km	10%	10%
more than 1 km	0%	0%

Average distance to water source

Drinking water supply sufficient and reliable – 95% Yes

Water for livestock - Proportion of households that own livestock: 80%

Food Security - Lack of food in the past year: 35% didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers) lack of work 70%

### Livelihoods - Sources of income

### Average household monthly income

less than 50,000	10%
50,001-100,000	25%
100,001-150,000	15%
150,001-200,000	20%
200,001 and above	30%

Proportion of household who own a house: 100%



# Village Summary: Kyaung Ywar

### **Irrigation water**

% of farming HHs	% using irrigation
	water
50%	100%

### **Drinking water**

	Dry	Wet
	Season	Season
Deep well	50%	55%
Shallow well	30%	30%

	Dry Season	Wet Season
0	100%	100%
up to 100 m	0%	0%
101-200 m	0%	0%
201-300 m	0%	0%
up to 1 km	0%	0%
more than 1 km	0%	0%

Average distance to water source

Drinking water supply sufficient and reliable - 100% Yes

# Water for livestock - Proportion of households that own livestock: 35%

Food Security - Lack of food in the past year: 45% didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers) lack of work 50%

# Livelihoods - Sources of income

### Average household monthly income

less than 50,000	5%
50,001-100,000	30%
100,001-150,000	20%
150,001-200,000	20%
200,001 and above	25%

Proportion of household who own a house: 95%



# Village Summary: Tha Pyay Taw

### Irrigation water

% of farming HHs	% using irrigation water
50%	80%

### **Drinking water**

	Dry	Wet
	Season	Season
Deep well	30%	25%
Shallow well	35%	30%

	Dry Season	Wet Season
0	85%	80%
up to 100 m	0%	0%
101-200 m	5%	5%
201-300 m	10%	15%
up to 1 km	0%	0%
more than 1 km	0%	0%

Average distance to water source

Drinking water supply sufficient and reliable – 100% Yes

Water for livestock - Proportion of households that own livestock: 70%

Food Security - Lack of food in the past year: 75% didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers) lack of work 60% lack of money 30%

### Livelihoods - Sources of income

### Average household monthly income

less than 50,000	0%
50,001-100,000	20%
100,001-150,000	25%
150,001-200,000	30%
200,001 and above	25%

Proportion of household who own a house: 100%



# Village Summary: Ngar Su Kone

### Irrigation water

% of farming HHs	% using irrigation
	water
45%	100%

### **Drinking water**

	Dry	Wet
	Season	Season
Deep well	15%	-
Shallow well	-	5%
Hand Pump	85%	90%

	Dry	Wet
	Season	Season
0	95%	95%
up to 100 m	5%	5%
101-200 m	0%	0%
201-300 m	0%	0%
up to 1 km	0%	0%
more than 1 km	0%	0%

Average distance to water source

Drinking water supply sufficient and reliable – 100% Yes

Water for livestock - Proportion of households that own livestock: 35%

Food Security - Lack of food in the past year: 45% didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers) lack of money 75% lack of work 20%

# Livelihoods - Sources of income

### Average household monthly income

less than 50,000	15%
50,001-100,000	20%
100,001-150,000	20%
150,001-200,000	20%
200,001 and above	25%

Proportion of household who own a house: 95%



# Village Summary: Ma Khauk

Irrigation water	
% of farming HHs	% using irrigation water
50%	30%

### **Drinking water**

	Dry	Wet
	Season	Season
River	100%	100%
Public Tap	-	10%

	Dry	Wet
	Season	Season
0	80%	85%
up to 100 m	0%	0%
101-200 m	0%	10%
201-300 m	10%	0%
up to 1 km	10%	5%
more than 1 km	0%	0%

Average distance to water source

Drinking water supply sufficient and reliable – 100% Yes

Water for livestock - Proportion of households that own livestock: 75%

Food Security - Lack of food in the past year: 15% didn't have enough at least in one month.



Livelihoods - Sources of income

### Average household monthly income

less than 50,000	5%
50,001-100,000	5%
100,001-150,000	25%
150,001-200,000	25%
200,001 and above	40%

Proportion of household who own a house: 95%





# Village Summary: Gway Pin Kone

### Irrigation water

% of farming HHs	% using irrigation water
50%	0%

### **Drinking water**

	Dry	Wet
	Season	Season
Protected well	30%	30%
Shallow well	30%	25%

	Dry	Wet
	Season	Season
0	50%	50%
up to 100 m	5%	5%
101-200 m	5%	5%
201-300 m	25%	30%
up to 1 km	15%	10%
more than 1 km	0%	0%

Average distance to water source

Drinking water supply sufficient and reliable – 85% Yes

# Water for livestock - Proportion of households that own livestock: 55%

Food Security - Lack of food in the past year: 40% didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers) lack of money 50% lack of work 50%

# Livelihoods - Sources of income

### Average household monthly income

less than 50,000	5%
50,001-100,000	30%
100,001-150,000	30%
150,001-200,000	20%
200,001 and above	15%

Proportion of household who own a house: 70%



# Village Summary: Min Kyaung

Irrigation water	
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% of farming HHs	% using irrigation water
50%	40%

### **Drinking water**

	Dry	Wet
	Season	Season
Deep well	90%	90%
Hand Pumpl	10%	10%

	Dry	Wet
	Season	Season
0	0%	0%
up to 100 m	40%	40%
101-200 m	10%	10%
201-300 m	20%	25%
up to 1 km	30%	25%
more than 1 km	0%	0%

Average distance to water source

Drinking water supply sufficient and reliable – 100% Yes

Water for livestock - Proportion of households that own livestock: 20%

Food Security - Lack of food in the past year: 20% didn't have enough at least in one month.



Livelihoods - Sources of income

### Average household monthly income

less than 50,000	30%
50,001-100,000	15%
100,001-150,000	10%
150,001-200,000	5%
200,001 and above	40%

Proportion of household who own a house: 100%

Comparison to previous year



# Village Summary: Thar Yar Kone

Irrigation water	
% of farming HHs	% using irrigation
	water
50%	100%

### **Drinking water**

	Dry	Wet
	Season	Season
Hand Pump	100%	100%

	Dry	Wet
	Season	Season
0	75%	75%
up to 100 m	0%	15%
101-200 m	0%	0%
201-300 m	20%	5%
up to 1 km	5%	5%
more than 1 km	0%	0%

Average distance to water source

Drinking water supply sufficient and reliable – 100% Yes

Water for livestock - Proportion of households that own livestock: 15%

**Food Security** - Lack of food in the past year: 60 % didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers) lack of money 55%

lack of work 40%

# Livelihoods - Sources of income

### Average household monthly income

less than 50,000	20%
50,001-100,000	25%
100,001-150,000	10%
150,001-200,000	25%
200,001 and above	20%

Proportion of household who own a house: 100%



# Village Summary: Oke Shit Kan

Irrigation water	Irri	igation	water
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% of farming HHs	% using irrigation water
50%	100%

**Drinking water** 

	Dry	Wet
	Season	Season
Pond	70%	65%
Hand Pump	30%	20%

	Dry	Wet
	Season	Season
0	20%	15%
up to 100 m	20%	5%
101-200 m	5%	5%
201-300 m	0%	5%
up to 1 km	30%	65%
more than 1 km	25%	5%

Average distance to water source

Drinking water supply sufficient and reliable – 95% Yes

Water for livestock - Proportion of households that own livestock: 30%

**Food Security** - Lack of food in the past year: 45 % didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers) lack of money 50% lack of work 40%

# Livelihoods - Sources of income

### Average household monthly income

less than 50,000	10%
50,001-100,000	25%
100,001-150,000	35%
150,001-200,000	5%
200,001 and above	25%

Proportion of household who own a house: 100%





# Village Summary: Thit Gyi Taw

Irrigation water		
	% of farming HHs	% using irrigation
		water
	45%	100%

### **Drinking water**

	Dry	Wet
	Season	Season
Pond	45%	50%
Hand Pump	50%	40%

	Dry Season	Wet Season
0	60%	60%
up to 100 m	10%	15%
101-200 m	25%	20%
201-300 m	5%	5%
up to 1 km	0%	0%
more than 1 km	0%	0%

Average distance to water source

Drinking water supply sufficient and reliable – 90% Yes

Water for livestock - Proportion of households that own livestock: 70%

Food Security - Lack of food in the past year: 35 % didn't have enough at least in one month.



Livelihoods - Sources of income

### Average household monthly income

less than 50,000	10%
50,001-100,000	40%
100,001-150,000	25%
150,001-200,000	15%
200,001 and above	10%

Proportion of household who own a house: 90%



# Village Summary: Tha But Taw (East)

### **Irrigation water**

% of farming HHs	% using irrigation	
	water	
45%	100%	

### **Drinking water**

	Dry	Wet
	Season	Season
Protected well	5%	5%
Hand Pump	95%	95%

	Dry	Wet
	Season	Season
0	70%	70%
up to 100 m	0%	0%
101-200 m	10%	10%
201-300 m	0%	0%
up to 1 km	20%	20%
more than 1 km	0%	0%

Average distance to water source

Drinking water supply sufficient and reliable – 100% Yes

Water for livestock - Proportion of households that own livestock: 45%

**Food Security** - Lack of food in the past year: 30 % didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers) lack of money 45% lack of work 25%

### Livelihoods - Sources of income

### Average household monthly income

less than 50,000	50%
50,001-100,000	25%
100,001-150,000	20%
150,001-200,000	5%
200,001 and above	0%

Proportion of household who own a house: 80%



### Village Summary: Yone Taw

Batton trater		
% of farming HHs	% using irrigation	
	water	
50%	100%	

**Drinking water** 

Irrigation water

	Dry	Wet
	Season	Season
Hand Pump	100%	100%

	Dry	Wet
	Season	Season
0	100%	100%
up to 100 m	0%	0%
101-200 m	0%	0%
201-300 m	0%	0%
up to 1 km	0%	0%
more than 1 km	0%	0%

Average distance to water source

Drinking water supply sufficient and reliable – 100% Yes

Water for livestock - Proportion of households that own livestock: 55%

**Food Security** - Lack of food in the past year: 55 % didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers) lack of work 50% lack of money 45%

# Livelihoods - Sources of income

# Average household monthly income

less than 50,000	25%
50,001-100,000	25%
100,001-150,000	40%
150,001-200,000	5%
200,001 and above	5%

Proportion of household who own a house: 95%


# Village Summary: Tint Tei

% of farming HHs	% using irrigation	
	water	
55%	100%	

#### **Drinking water**

Irrigation water

	Dry	Wet
	Season	Season
Hand Pump	30%	15%

	Dry	Wet
	Season	Season
0	40%	80%
up to 100 m	10%	5%
101-200 m	30%	15%
201-300 m	10%	0%
up to 1 km	5%	0%
more than 1 km	5%	0%

Average distance to water source

Drinking water supply sufficient and reliable – 100% Yes

Water for livestock - Proportion of households that own livestock: 20%

Food Security - Lack of food in the past year: 15 % didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers) lack of money 65% lack of work 20%

# Livelihoods - Sources of income

#### Average household monthly income

less than 50,000	5%
50,001-100,000	10%
100,001-150,000	10%
150,001-200,000	30%
200,001 and above	45%

Proportion of household who own a house: 100%



# Village Summary: Pan Yan

% of farming HHs	% using irrigation water
55%	100%

#### **Drinking water**

	Dry	Wet
	Season	Season
Hand Pump	45%	45%
Pond	35%	25%

	Dry	Wet
	Jeason	3643011
0	70%	75%
up to 100 m	0%	0%
101-200 m	10%	10%
201-300 m	0%	0%
up to 1 km	20%	15%
more than 1 km	0%	0%

Average distance to water source

Drinking water supply sufficient and reliable – 100% Yes

# Water for livestock - Proportion of households that own livestock: 35%

Food Security - Lack of food in the past year: 20 % didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers) lack of money 40% lack of work 25%

# Livelihoods - Sources of income

#### Average household monthly income

less than 50,000	5%
50,001-100,000	15%
100,001-150,000	30%
150,001-200,000	5%
200,001 and above	45%

Proportion of household who own a house: 90%



# Village Summary: Kyar (west)

#### **Irrigation water**

% of farming HHs	% using irrigation water
45%	100%

#### **Drinking water**

	Dry	Wet
	Season	Season
Hand Pump	25%	-
Pond	75%	35%
River	-	35%

	Dry	Wet
	Season	Season
0	45%	55%
up to 100 m	0%	0%
101-200 m	5%	25%
201-300 m	10%	0%
up to 1 km	35%	20%
more than 1 km	5%	0%

Average distance to water source

Drinking water supply sufficient and reliable – 90% Yes

Water for livestock - Proportion of households that own livestock: 55%

Food Security - Lack of food in the past year: 50 % didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers) lack of money 60% lack of work 40%

# Livelihoods - Sources of income

#### Average household monthly income

less than 50,000	30%
50,001-100,000	35%
100,001-150,000	5%
150,001-200,000	15%
200,001 and above	15%

Proportion of household who own a house: 85%



# Village Summary: Khun Taung Gyi

#### Irrigation water

% of farming HHs	% using irrigation water
50%	100%

#### **Drinking water**

	Dry	Wet
	Season	Season
Rainwater /Tank		15%
Pond	100%	85%

	Dry Season	Wet Season
0	20%	35%
up to 100 m	0%	0%
101-200 m	30%	20%
201-300 m	15%	15%
up to 1 km	35%	30%
more than 1 km	0%	0%

Average distance to water source

Drinking water supply sufficient and reliable – 100% Yes

#### Water for livestock - Proportion of households that own livestock: 20%

**Food Security** - Lack of food in the past year: 30 % didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers) lack of money 65% lack of work 35%

#### Livelihoods - Sources of income

#### Average household monthly income

less than 50,000	5%
50,001-100,000	25%
100,001-150,000	20%
150,001-200,000	35%
200,001 and above	15%

Proportion of household who own a house: 90%



# Village Summary: Kyauk Tan (additional village)

#### **Irrigation water**

% of farming HHs	% using irrigation water
100%	0%

#### **Drinking water**

	Dry	Wet
	Season	Season
Rainwater /Tank	-	50%
Protected well	50%	25%
Shallow well	25%	-

	Dry	Wet
	Season	Season
0	25%	75%
up to 100 m	0%	0%
101-200 m	0%	0%
201-300 m	50%	0%
up to 1 km	0%	25%
more than 1 km	25%	0%

Average distance to water source

Drinking water supply sufficient and reliable – 50% Yes

Water for livestock - Proportion of households that own livestock: 75%

Food Security - Lack of food in the past year: 25 % didn't have enough at least in one month.



Two main cause of food insecurity (multiple answers) lack of money 50%

long term debts 50%

# Livelihoods - Sources of income

#### Average household monthly income

less than 50,000	0%
50,001-100,000	75%
100,001-150,000	25%
150,001-200,000	0%
200,001 and above	0%

Proportion of household who own a house: 100%



# 8 CONCLUSION

The primary purpose of the survey is to understand the impact of the AF project. While attributing observed changes to the project alone is not possible, we have designed a survey that can give strong indications of such attribution. To do that, we grouped the data in two levels: AF and non-intervention, subdivided into household types and village level. Such ordering of the data provided important nuances to understand the context into which the project is being developed and to assess impact.

The data was presented in the report in a complementary form. The household type and participation or not in the project was detailed in chapter 6 and the specific characteristics of each village summarized in chapter 7. All relevant data collect is presented in the report. We also include detailed analysis. In the next pages, we summarize findings, patterns and specificities from both village and household levels and, when pertinent, recommendations.

# **Food Security**

There is a correlation between household income and the quality and quantity of food consumed by households. Rice is the main staple of food consumed by all households but many respondents can only afford better quality rice for 6 months; in the rest of the year they must be content with lower quality rice. The months of July and August, the rainy season, are months when households are more likely to experience food shortage, with households borrowing from relatives, neighbours and friends to make ends meet. Food security of landless households depends on the availability of employment opportunities while for smallholding farmers the productivity of their land is the main determinant of their food security.

Shortage of work and lack of money are the two most common causes of food scarcity. Interventions aimed at increase and generating income among respondents could have a significant impact in increasing food security. A regular income could increase the ability of secure food as it floats throughout the year, being more difficult in lean months.

In general, there is more food availability in the last 12 months and more than 5 years ago although some villages showed a decrease. Rice is the main food consumed by all households, with 100% reporting they ate rice on the day of the interview. Overall, 52% of all respondents reported that there were some months in the preceding 12 when their households did not have enough food to eat.

# Water

Lack of infrastructure is the main barrier to access water in the Dry Zone despite the availability of surface water from rivers and storage. AF villages have significantly less access to water through irrigation compared to control villages. Non-beneficiary small landholding farmers have significantly better access to water, and in that sense, they are very different (better off) compared to beneficiary smallholding farmers. Deep tube-wells are the main source of drinking water for the dry and wet seasons, while the

source of drinking water for livestock, (55% of households keep livestock), is deep and shallow wells. The average water consumption per person for all groups is 21 litters per month and there is a correlation between household income and water consumption. The findings point out that non-beneficiary smallholding farmers have better infrastructure to access and use water.

There was no direct correlation between access to water and food security but such relations might exist in combination with other variables. As discussed on chapter 6, in some villages a combination of water availability (both drinking water and for agriculture) and comparatively higher income was associated with higher food security. While such findings cannot be generalized, they are important references for future planning and implementation of projects, and to examine association in the end-line survey.

# Households, Livelihoods and Income

The average household has 4.2 household members with an average dependency ratio for under 15 years old of 32%. A very high number of children aged 4-14 are not attending school, 17%. This might be explained by the need to generate income for the household or to look after younger children while parents are working.

On average, respondents that own land have 3 acres of land. The study found out that there is a correlation between land ownership and income, meaning that land owners are better off than those who don't own land. Flush to pit latrine is the most common type of toilet with 66% using it.

Non-agriculture labor is the main source of income for the landless households with 74% doing off-farm work, yet still 68% also do on-farm seasonal work. For smallholding farmer households, sales of agriculture produce and on-farm labor are the main sources of income. The overall sentiment is that household income has remained the same (41%) or improved (37%) in the last 12 months. 91% of respondents reported that they have no savings and 85% of all respondents currently have debt. A large percentage of households (76%) reported to have taken a loan within the last one year. The main purpose of borrowing money was to buy food, followed by buying farm machinery and business investment.

If a single factor had to be linked to food insecurity that would be income. As discussed, the main causes of food insecurity are lack of income or money and villages with higher income tended to face less food scarcity, although there were exceptions.

# Information and Communication

Overall, 51% of respondents mentioned that for information on jobs and crop prices, relatives, friends and neighbors are better sources, followed by the radio with 37% and the local market / retailer with 28%.

Radio is the main source of information followed by relatives, friends, and neighbors, and television to know government's policies and plans regarding agriculture, workforce or family planning.

#### Loans, Savings and Assets

91% of all respondents have no savings. 76% of all respondents have taken a loan in the last year. Small landholding farmers mostly take loans from the government and have more debts than other groups. The purpose of most loans taken is to buy food. 85% of all respondents currently have debt while 57% have debts exceeding 200,000 Kyats.

Almost all respondents (94%) reported that they own their house. Mobile phone is the majority of respondents across the different groups.

#### Livestock

55% of respondents keep livestock and cattle has the highest proportion of ownership with 31% of households, followed by chickens (23%) and pigs (13%). Free grazing is practiced by a large proportion of cattle owners, mainly outside the village (68%), as well as using communal village land (26%), but in total 69% of cattle owners buy fodder or feed for their livestock. Water supply for livestock was reported to be insufficient or unreliable during the months of March to May, while the quality of water is acceptable, but changes during the rainy season.

Number of livestock are low and do not seem enough to prevent food scarcity for part of the households.



# ANNEX A - VILLAGE PROFILE SUMMARY

- AF villages are on average 8.7 miles from the nearest town, compared to control villages that are 10 from the nearest town. Villagers mostly use motorcycles in dry and wet seasons to visit to nearest town and depending on distance it takes up to 90 minutes in the dry season or 120 minutes in the wet seasons to get there.
- The most 3 common water resources are shallow tube well (<200 feet), pond and tube well (motor pump). 8 AF Villages and 17 Control villages out of 43 said that "Shallow Tube well (<200 feet)" is very important water resource for drinking and other household uses. 11 AF villages and 12 Control villages out of 43 said that they rely heavily on "ponds" for drinking and other household uses, but 9 AF Villages and 5 Control villages mentioned that the pond is not available to access for the whole year. 8 AF villages and 15 Control villages mentioned that "tube well (motor pump)" is very important water resource for drinking and other household uses and it is available to access for the whole year.</li>
- 7 AF villages and 7 Control villages have no electricity. The remaining 29 villages (10 AF villages and 19 Control villages) have electricity, either supplied by the government, organized by the village, or through a private/commercial generator.
- 32 villages out of 43 said that they belong to the village road is accessible by car or truck in all weather. Another 9 villages (1 AF and 8 Control villages) said that the road is accessible by car or truck in dry weather, while the two remaining Control villages mentioned that they have just the rough track suitable for trawlargee but not for cars or trucks.
- 25 villages (9 AF and 16 Control) had experienced earthquakes, floods and cyclones. Villages don't have preparations for earthquakes, water scarcity or drought. They do have preparations for flood disaster, 3 control villages use sandbags, and have a family disaster management plan, listen to weather forecasts and sign up for early warning alerts. They also store food in advance before a flood or cyclone event.
- In total 17 AF and 26 Control villages were completed. In term of availability of financial assistance, 12 AF villages and 23 control villages said that they have savings and loan associations operating in the village. All villages do not have access to private banks within their village, but 13 AF and 26 Control villages have access to low interest micro- credit in the village. The most popular type of lender in control villages is "taking loan from government" while "farmers association/cooperative" is the most popular type of lender in AF village.
- 29 villages (11 AF village and 18 control villages) said they have self-help groups in the village and 13 villages (5 AF village and 8 control village) mentioned that NGOs have been working in the village in the past 24 months.

# **ANNEX B - LIST OF VILLAGES COVERED IN THE HOUSEHOLD SURVEY**

# **AF Villages**

Township	Village Tract	Village	Team	Landless	Farmer	Women
Chaule	Than Bo	Than Bo (North)	Hnin Wai Lwin	8	8	4
Chauk	HteinKan	Sin Ka	Hnin Wai Lwin	8	8	4
	Thar Si	Twin Chaung	Tin Tin Khaing	8	8	4
Monywa	TeGyiKone	TeGyiKone (East)	Tin Tin Khaing	8	8	4
	Taung Kya	TaungKyar	Tin Tin Khaing	8	8	4
	KokeKe	KokeKeYwarThit	Zar Chi Soe	8	8	4
Myingyan	ChaungDaung	Kyauk Yan	Zar Chi Soe	8	8	4
	Gway Pin Yoe	Gway Pin Yoe	Zar Chi Soe	8	8	4
	Nga Min May	NgaPaing	Kyaw Khaing Soe	8	8	4
Nyaung U	ShweKaHpyu	ShweKaHpyu	Kyaw Khaing Soe	8	8	4
	Ku Taw	Kyo Pin thar (East)	Kyaw Khaing Soe	8	8	4
	Chi Par	Ngar Su Kone	Hnin Wai Lwin	8	8	4
	Min Kyaung	Min Kyaung	Hnin Wai Lwin	8	8	4
Shwe Bo	Ta Ga Nan	Thar YarKone	Hnin Wai Lwin	8	8	4
	Ma Khauk	Ma Khauk	Naw Htoo Phaw	8	8	4
	Gway Pin Kone	Gway Pin Kone	Naw Htoo Phaw	8	8	4
				128	128	64
					320	

Township	Village Tract	Village	Team	Landless	Farmer	Women
	Pa Khan Nge	Auk Lel	Hnin Wai Lwin	8	8	4
Chauk	SweiPaukKan	HtanChauk Pin	Hnin Wai Lwin	8	8	4
	Aw Zar Taw	Ma HlwaTaung	Hnin Wai Lwin	8	8	4
	KyaungKone	KyaungKone	Tin Tin Khaing	8	8	4
	KhaWeaKyin	Myit Nar Kaing	Tin Tin Khaing	8	8	4
Monywa	Ma Yoe Taw	Ma Yoe Taw (North)	Tin Tin Khaing	8	8	4
	Kya Paing	KyaungYwar	Tin Tin Khaing	8	8	4
	Hpan Khar Kyin	Thapyay Taw	Tin Tin Khaing	8	8	4
	HtaNaungTaing	HtaNaungTaing	Zar Chi Soe	8	8	4
	Shar Taw	Shar Taw	Zar Chi Soe	8	8	4
Myingyan	Ya Thar	Ya Thar	Zar Chi Soe	8	8	4
	Ngar Nan	Nant Thar Hlaing	Zar Chi Soe	8	8	4
	Thar Paung	Ah Neint	Zar Chi Soe	8	8	4
	Let Pan Chay Paw	OhnHneChaung	Kyaw Khaing Soe	8	8	4
	TuYwinTaing	KanGyiKone (YwarThit)	Kyaw Khaing Soe	8	8	4
Nyaung U	Taung Bi Lay	U Yin	Kyaw Khaing Soe	8	8	4
	Pyun	ShweHlaing	Kyaw Khaing Soe	8	8	4
	Taung Bi	Taung Bi	Kyaw Khaing Soe	8	8	4
	Oke Shit Kan	Oke Shit Kan	Hnin Wai Lwin	8	8	4
	Htan Sin	Thit Kyi Taw	Naw Htoo Phaw	8	8	4
	Tha But Taw	Tha But Taw (East)	Naw Htoo Phaw	8	8	4
Shura Ba	YwarSoe	YwarSoe	Naw Htoo Phaw	8	8	4
SIIWE DU	Tint Tei	Tint Tei	Naw Htoo Phaw	8	8	4
	Pan Yan	Pan Yan	Naw Htoo Phaw	8	8	4
	Nyaung Pin Thar	Nyaung Pin Thar (West)	Naw Htoo Phaw	8	8	4
	KhunTaungGyi	KhunTaungGyi	Naw Htoo Phaw	8	8	4
		·		208	208	104
					520	

# **Control Villages**

# **ANNEX C - HOUSEHOLD QUESTIONNAIRE**

# INFORMED CONSENT AND INTRODUCTION

Informed consent: it is necessary to introduce the household to the survey and obtain the consent of all prospective respondents to participate. If a prospective respondent (e.g. a woman decision maker) is not present at the beginning of the interview, be sure to return to this page and obtain consent before interviewing him or her. Ask to speak with a responsible adult in the household.

Hello. My name is _______. I am working with MSR, a Research Agency in Myanmar, and we are conducting a survey to learn about how food, water, livelihood and economic prosperity is impacted by climate change.

Twenty households in each village have been selected randomly so that we can collect information on your access to water and of food households grow and eat. Your household is among those selected and we would like to ask you as head of the household or spouse some questions about your household access to water, livelihoods and food situation. This survey will be conducted again in 3 years from now and we would like to return at that time and conduct another interview with you.

All of the answers you give will be confidential and will not be shared with anyone other than members of our survey team. You don't have to participate in the survey, but we hope you will agree to answer the questions since your views are important. If I ask you any question you don't want to answer, just let me know and I will go on to the next question or you can stop the interview at any time. In case you need more information about the survey, you may contact the person listed on this card.

We can return later today if you don't have time to finish all the questions now.

Do you have any questions about the study or about your participation?

ASK THE FOLLOWING CONSENT QUESTIONS OF ALL PROSPECTIVE RESPONDENTS.

Do you agree to participate in the survey? Yes / No

My signature affirms that I have read the verbal informed consent statement to the respondent(s), and I have answered any questions asked about the study. The respondent consented to the interview.

INTERVIEWER'S NAME:		 	
SIGNATURE:	 	 	

DATE: ____/ 2016

# Section 1. General information

ID1.1 Region	
Sagaing	1
Mandalay	2
Magway	3

# ID1.2 Township

Shwebo	1
Monywa	2
Myingyan	3
Nyaung U	4
Chauk	5

ID1.3	Vil	lage	tract	name
-------	-----	------	-------	------

ID1.6 Village MIMU code	
-------------------------	--

# ID1.7 AF/Control Village ID1.8

AF	1
CV	2

ID1.9 Interview date	/2016 [dd/mm/2016]
ID1.10 Interview start	/hr
ID1.11 Interview end	/hr
ID1.12 Enumerator	

#### Section 2. Household

Q2.1 Respondent name

#### Criteria for the respondent

Only head of household or spouse can be used as respondents. The head of HH has to be a living member of the HH and determined by the HH members themselves. The head of HH can be female. (If the head of household or spouse cannot provide information the interviewer can ask the de facto head of HH (e.g. member who earns main income.)

#### Q2.2 Position in the HH

Head of HH	1
Spouse	2

#### Q2.3 Sex

male	1
Female	2

#### Q2.4 Age _____years

#### Q2.5 What is marital status of the head of household

Married	1
single	2
widowed	3
divorced (legally recognized separation)	4
separated (still legally married)	5

#### Q2.6 Respondent's ethnicity

Bamar	1	Indian	9
Kachin	2	Chinese	10
Kayah	3	Mixed ethnicity	11
Kayin	4	Pa-O	12
Chin	5	Palaung	13
Mon	6	Danu	14
Rakhine	7	Other ethnic group (specify)	15
Shan	8		

#### Q2.7 Respondent's religion

Buddhist	1
Christian	2
Hindu	3
Islam	4
Other (specify)	5

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Q2.8	Total number o	f HH members							
	Has to have stayed in the HH at some time during the past 3 months. For our purposes today, members of a household are adults or								
	children that liv	e together, eat	from the "sam	ne pot" and are	normally consi	idered to be re	gular HH mem	bers.	
	Q2.9	Q2.10	Q2.11	Q2.12	Q2.13	Q2.14	Q2.15	Q2.16	Q2.17
	Name	Relationshi	Gender	Age	Is [Name] at	Education	Does	Current	If not working/
		p to	M=1	< 1 year=0	school?	level	[Name]	Form of	studying
		household	F=2		(for age		Work?	work	is [Name]
		head			under 25)		(for age	(Occupation	disabled in any
					Yes=1		10+)[IM2]	)	way?
					No=2		Yes=1		Yes=1
							No=2		No=2
1									
2									
3									
4									
5									

RELATIONSHIP TO HOUSEHOLD HEAD		EDUCATION	
Head	1	No-formal education	0
Spouse/partner	2	Grade 1-11 passed	1-11
Son/daughter	3	College first year passed to undergrad	12
Son/daughter-in-law	4	Bachelor's degree	13
Stepchild	5	Graduate degree	14
Grandchild	6		
Parent	7	TYPE OF EMPLOYMENT	
Parent-in-law	8	Cultivate on their own land	1
Brother/sister	9	Work on someone's land as hired labor	2
Brother/sister-in-law	10	Work on household's non-farm business	3
Grandparent	11	Work on someone's non-farm business	4
Other relative	12	Daily non-farm wage labor	5

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Adopted child	13	Other (Specify)	6
Others (specify)	14		

#### Landholding

Q2.18 Does your household have a farmland or land for aquaculture?

Yes	1
No – Skip to section Q3.19 - DRINKING WATER	2

Q2.19 If yes - Total landholding - how many acres does your household have?	ac
Q2.20 Wetland [Le]with surface irrigation	ac
Q2.21 Wetland [Le]with pump irrigation)	ac
Q2.22 Dryland [Ya] rain fed lands	ac
Q2.23 Dryland with canal irrigation (Surface irrigation from dam with gravity flow	ac
Q2.24 Dryland with pump irrigation(Surface irrigation with motorized pumps/ river pump irrigation scheme, etc.)	ac
Q2.25 Homestead garden	ac
Q2.26 Agroforestry	ac
Q2.27 Others:	ac

# 3. Fresh Water Access IRRIGATION WATER – Have Landholding

#### Q3.1 Do you use irrigation water?

Yes	1
No- Skip to section Q3.19 - DRINKING WATER	2

#### Q3.2 If YES, what is the irrigation water source? Multiple choice possible

irrigation channel	1
river	2
tube well	3
pond	4
private or government	5
lake	6
other(specify)	7

# Q3.3 If YES, what is the irrigation type? Multiple choice possible

Canal irrigation	1
motorized pump irrigation	2
tube-well irrigation	3
treadle pump (by foot or hand)	4
other(specify)	5

#### Q3.4 How many acres of your land is irrigated?

Total land acres	ac
Total irrigated land acres	ac

#### Q3.5 Do you irrigate your wetland (rice paddy)?

Yes	1
No	2 >> Q3.7
Not applicable	98>>Q 3.7

#### Q3.6 What are your costs for wetland irrigation? Yearly fees+ pump and other costs

Ks/year	
---------	--

#### Q3.7 Do you irrigate your Dryland?

Yes	1
No	2>> Q3.10
Not applicable	98>>Q 3.10

# Q3.8 If Yes, which crops do you grow on your irrigated Dryland? - Multiple response

vegetables	1
sesame	2
pigeon beans	3
groundnuts	4
corn	5
cotton	6
chickpea	7
green gram	8
onion	9
sunflower	10
sugarcane	11
tanakha	12
latex tree(Hlaw Phyu/ Wild Almond)	13
other(specify)	14

#### Q3.9 What are your costs for dryland irrigation? Yearly fees+ pump and other costs

Ks/year	
Q3.10 Do you irrigate your homestead garden?	
Yes	1
No – Skip to Q3.13	2
Not applicable	98>>Q 3.13

#### Q3.11 If Y, what is the source of the irrigation water? – Multiple response

channel irrigation	1
motorized pump irrigation	2
tube-well irrigation	3
treadle pump	4
other:	5

#### Q3.12 Which crops do you grow in your homestead garden? - Multiple response

Vegetables	1
onion	2
tomato	3
chilli	4
potato	5
cassava	6
salad	7
herbs	8
eggplant	9
squash	10
bitter gourd	11
betel leaves, cut flowers,	12
other:	13

#### Q3.13 Is the irrigation water supply sufficient and reliable?

Yes – Skip to Q3.15	1
No	2

#### Q3.14 If N, when is water scarce? – Multiple response

January	1
February	2
March	3
April	4
May	5
June	6
July	7
August	8
September	9
October	10
November	11
December	12

# Q3.15 What is the quality of the irrigation water?

Good	1>>Q3.17
fair	2
bad	3

#### Q3.16 If fair or bad: what causes this?

Smell	1
color	2
dissolved matter ("muddy")	3
dissolved matter "salty"	4

# Q3.17 Does quality change over time?

Yes	1
No - – Skip to Q3.19	2

#### Q3.18 If Y, when?

In dry season	1
in monsoon	2
other:	3

# **DRINKING WATER**

Q3.19 What is your drinking water source in the dry season?

Public tap Water system into dwelling or plot	1
Public tap	2
deep-tube well	3
shallow tube-well- hand-dug well	4
Protected well/spring- brick well	5
Unprotected well/spring	6
Pool / Pond / Lake / Dam / Stagnant water	7
River / Stream / Canal	8
Rainwater collection / Tank	9
Bottled water	10
hand pump	11
water harvesting	12
truck	13
other:	14

#### Q3.20What is your drinking water source in the wet season?

Public tap Water system into dwelling or plot	1
Public tap	2
deep-tube well	3
shallow tube-well- hand-dug well	4
Protected well/spring- brick well	5
Unprotected well/spring	6
Pool / Pond / Lake / Dam / Stagnant water	7
River / Stream / Canal	8
Rainwater collection / Tank	9
Bottled water	10
hand pump	11
water harvesting	12
truck	13
other:	14

#### Q3.21How much water does your household use in a month on average?

___ [Gallon]

#### Q3.22What is distance to the water source in the dry season?

[miles]

#### Q3.23What is distance to the water source in the wet season?

____ [miles]

# Q3.24How much time is needed for collection of daily amount of drinking water in the dry season?

[Minutes]

#### Q3.25How much time is needed for collection of daily amount of drinking water in the wet season?

[Minutes]

#### Q3.26How many people are responsible for collecting drinking water?

____ [#]

# Q3.27 Who collects drinking water

Male	1
Female	2

#### Q3.28What is the quality of the drinking water?

Good	1
fair	2
bad	3

# Q3.29If fair or bad: what causes this?

Smell	1
color	2
dissolved matter ("muddy")	3
dissolved matter "salty"	4

#### Q3.30Does water quality change over time?

Yes	1
No	2

# Q3.31When is water quality fair or bad?

January	1
February	2
March	3
April	4
May	5
June	6
July	7
August	8
September	9
October	10
November	11
December	12

# Q3.32 Is the drinking water supply sufficient and reliable?

Yes – Skip to Q3.34	1
No	2

# Q3.33If N, when?

January	1
February	2

March	3
April	4
May	5
June	6
July	7
August	8
September	9
October	10
November	11
December	12

# Q3.34 How much do you pay for drinking water?

(kyats/month)	
Number	
Unit	

Unit	Code
Meter	1
Bucket	2
Gallon	3

# Q3.35Do you sell drinking water?

Yes	1
No – Skip to Q3.37	2

#### Q3.36 If Yes: How much do you earn daily?

____Ks/day

# DRINKING WATER FOR LIVESTOCK

# Q3.37How many animals does your household currently own?

No livestock – Skip to Section 4	
Cattle	
Buffalo	
Horses	
Goats	
Sheep	
Pigs	
Chickens	
Ducks	
Other 1 (specify)	

Other 2 (specify)	
Other 3 (specify)	

# Q3.38What is the source of drinking water for those animals? If owns livestock

River	1
pond	2
deep-well	3
shallow-well	4
irrigation channel	5
Other:	6

#### Q3.39What is the quality of this water?

Good	1
fair	2
bad	3

# Q3.40If fair or bad: what causes this?

Smell	1
color	2
dissolved matter ("muddy")	3
dissolved matter "salty"	4

#### Q3.41Does water quality change over time?

Yes	1
No	2

# Q3.42 If Yes, when?

In dry season	1
in monsoon	2
other:	3

# Q3.43Is the livestock drinking water supply sufficient and reliable?

Yes	1			
No	2			
Q3.44If No, when is water scarce?				
January	1			
February	2			
March	3			
April	4			
May	5			

June	6
July	7
August	8
September	9
October	10
November	11
December	12

# Section 4. Food Security

During the past week, how many times has your household eaten the following foods?

Q4 CIRCLE RESPO	E THE CORRECT	>once per day	Daily	2-3 times per week	Once in the week	Not at all	Don't eat because of personal preference or religion
А	Rice	4	3	2	1	0	9
В	Maize	4	3	2	1	0	9
С	Beans/pulses	4	3	2	1	0	9
D	Potatoes	4	3	2	1	0	9
E	Sweet potatoes	4	3	2	1	0	9
F	Fresh vegetables	4	3	2	1	0	9
G	Fish	4	3	2	1	0	9
Н	Meat (beef)	4	3	2	1	0	9
I	Pork	4	3	2	1	0	9
J	Fresh fruit	4	3	2	1	0	9
К	Wheat/flour/noodles	4	3	2	1	0	9
L	Eggs	4	3	2	1	0	9
М	Poultry	4	3	2	1	0	9
N	Oils/fat	4	3	2	1	0	9
0	Sugar/honey	4	3	2	1	0	9
Р	Nuts/seeds/grains	4	3	2	1	0	9
Q	Alcohol	4	3	2	1	0	9
R	Tobacco	4	3	2	1	0	9
S	Tea/coffee	4	3	2	1	0	9

Q4.1Were there months in the past 12 months in which your household did not have enough food to meet your household's needs? This includes food from any source such as from your own production, purchase or exchange. (Months of Adequate Household Food Provisioning)

Yes	1
No	2

January	1
February	2
March	3
April	4
May	5
June	6
July	7
August	8
September	9
October	10
November	11
December	12

#### Q4.2If YES, when? – Multiple response

Q4.3In the past 12 months, did your family reduce the size and/ or the number of meals eaten in a day because there was not enough food to eat?

Never	1
Sometimes	2
Often	3

Q4.4In the past 12 months, did your family change the family diet to cheaper or less-preferred foods, in order to have enough food to eat?

Never	1
Sometimes	2
Often	3

Q4.5 In the past 12 months, did your family eat wild food (e.g. berries, fruits, roots, leaves, insects, small animals etc.) more frequently than usual, in order to have enough food to eat?

Never	1
Sometimes	2
Often	3

# Q4.6In the past 12 months, did your HH sell off (or consume) seeds meant for planting next season's crops in order to have enough food to eat?

Never	1
Sometimes	2
Often	3

Q4.7In the past 12 months, did your HH use savings in order to have enough food to eat?

Never	1
Sometimes	2
Often	3

Q4.8In the past 12 months, did one or more children from your HH discontinue school in order to save money or work to bring in additional income, so that your HH had enough food to eat?

Never	1
Sometimes	2
Often	3

Q4.9In the past 12 months, did you or any member of your HH decrease money spent on health or medicines, so that your HH had enough food to eat?

Never	1
Sometimes	2
Often	3

Q4.10In the past 12 months, did your HH borrow food or money for food from relatives, friends or neighbors, in order to have enough to eat?

Never	1
Sometimes	2
Often	3

Q4.11In the past 12 months, did your HH borrow money from money lenders, loans associations, banks, traders or shop keepers in order to buy enough food to eat?

Never	1
Sometimes	2
Often	3

Q4.12In the past 12 months, did your HH sell, pawn or exchange any of the household's assets, including tools, equipment or any other possessions, in order to buy enough food to eat?

Never	1
Sometimes	2
Often	3

Q4.13 In the past 12 months, did your HH sell (or consume) more of your livestock than usual (e.g. cattle, goats, chicken, ducks, pigs, buffalo) in order to have enough food to eat?

Never	1
Sometimes	2
Often	3

Q4.14In the past 12 months, did your HH sell, mortgage or rent any of your land, in order to have enough food to eat?

Never	1
Sometimes	2
Often	3

Q4.15Overall, how would you compare your household's food availability from all sources in the past 12 months with the previous year?

Increased	1
Same with previous 12 months	2
Decreased	3
Don't know/Don't answer	99

# Q4.16Is your household now more food secure than 5 years ago? What is the general trend?

Increased	1
Same with previous 12 months	2
Decreased	3
Don't know/Don't answer	99

# Q4.17 What are the key food products that you grow/produce yourself? - Multiple choices allowed!

Rice	1
Sesame	2
Pigeon beans	3
Chick peas	4
Groundnuts	5
Corn	6
Green gram	7
Onion	8
Sunflower	9
Sorghum	10
Millet	11
Lentil	12
Soy Bean	13
Cassave	14
Potato	15
Pumpkin	16
Eggplant	17
Okra	18
Chilli	19
Fruit tress	20

Cabbage	21
Cauliflowers	22
Other (Specify)	23
Do not grow	24

#### Q4.18Do you sell food (cash crops)?

Yes	1
No	2

# Q4.19If Yes, which crops? Multiple choices allowed!

Rice	1
Sesame	2
Pigeon beans	3
Chick peas	4
Groundnuts	5
Corn	6
Green gram	7
Onion	8
Sunflower	9
Sorghum	10
Millet	11
Lentil	12
Soy Bean	13
Cassave	14
Potato	15
Pumpkin	16
Eggplant	17
Okra	18
Chilli	19
Fruit trees	20
Cabbage	21
Cauliflowers	22
Other (Specify)	23

# Q4.20 What do you see as main cause of your food insecurity? Multiple choices allowed!

No land	1
Shortage of land	2
Limited irrigation water	3
Dependency on timely and sufficient rainfall (rain-fed dryland)	4
Pests and diseases	5

CC (droughts-floods)	6
Shortage of labor	7
Lack of quality seed	8
Crop failure	9
Long-term debts	10
Lack of money	11
Inability to by inputs as results of drought-related income decrease	12
Post-harvest loses	13
Other:	14

# **5. Information and Communication**

Q5.1 What are the three most important sources of information about what the government is doing (such as agricultural extension, workfare, family planning, etc.)?

Relatives, friends and neighbors	1
Community bulletin board	2
Local market	3
Community or local newspaper	4
National newspaper	5
Radio	6
Television	7
Groups or associations	8
Business or work associates	9
Political associates	10
Community leaders	11
An agent of the government	12
NGOs	13
Internet	14
Other (specify)	15

# Q5.2 What are the three most important sources of market information (such as jobs, prices of goods or crops)?

Relatives, friends and neighbors	1
Community bulletin board	2
Local market	3
Community or local newspaper	4
National newspaper	5
Radio	6
Television	7
Groups or associations	8
Business or work associates	9

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Political associates	10
Community leaders	11
An agent of the government	12
NGOs	13
Internet	14

#### 6. Fodder Availability. Move after water for livestock - If have livestock

Q6.1Do you share animals with others?

Yes	1
No	2

#### Q6.2Do you practice free grazing in the dry season?

Yes	1
No	2

#### Q6.3If Yes, where does your cattle/animals graze freely? Multiple choice possible

On communal land in the village	1
Outside the village	2
In the forest area of the village	3
On pasture of the village	4
On crop residue (wetland)	5
On crop residue (dryland)	6
Other:	7

#### Q6.4Who herds the animals?

Male	1
Female	2

#### Q6.5Do you own fodder near to the house?

Yes	1
No	2

#### Q6.6If Yes, what are these fodder sources? MA

Fodder trees	1
Fodder grasses	2
Crop residue	3
Other:	4

#### Q6.7 Do you plant fodder species?

Yes							1	

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No

Q6.8If Yes, what kind of fodder speciesFodder species:_

#### Q6.9Do you think there is enough fodder for your animals in your village?

Yes	1
No	2

#### Q6.10How is fodder availability compared with 5 years ago

Reduced	1
Stable	2
Improved	3

#### Q6.11Would you have more animals if there was more fodder available in your village?

Yes	1
No	2

#### Q6.12Do you buy fodder or feed for your animals?

Yes	1
No	2

#### Q6.13If Yes, what kind of fodder or feed?

Straw	1
Нау	2
Leaves	3
Grass	4
Feed	5
Other:	6

#### Q6.14How much does this cost you yearly?

Ks	[per year]			
----	------------	--	--	--

#### 7. Livelihoods - Sources of income

#### Q7.1What is the area of your land for agriculture?

ac of dryland	ac
ac of wetland	ac
I have no agricultural land	

#### Q7.2Do you have a homestead garden?

Yes	1
No	2

If no Agricultural land skip to Q7.10

# Q7.3What was the production of your agricultural land? [Expressed in kgs per crop]?

rice	kg
cereals	kg
pulses, beans and peanuts	kg
tubers and root crops	kg
vegetables	kg
fruit	kg
tanakha	kg
flowers	[pieces?]
Other(Specify):	kg

# Q7.4How much of this production did you sell?

rice	kg
cereals	kg
pulses, beans and peanuts	kg
tubers and root crops	kg
vegetables	kg
fruit	kg
tanakha	kg
flowers	[pieces?]
Other(Specify):	kg

#### Q7.5 How much of this production did you consume/use?

rice	kg
cereals	kg
pulses, beans and peanuts	kg
tubers and root crops	kg
vegetables	kg
fruit	kg
tanakha	kg
flowers	[pieces?]
Other(Specify):	kg

# Q7.6 How much income do you earn from agriculture?

rice	kg
cereals	kg
pulses, beans and peanuts	kg

tubers and root crops	kg
vegetables	kg
fruit	kg
tanakha	kg
flowers	[pieces?]
Other(Specify):	kg
Total	ks

# Q7.7 Where do the inhabitants of this community generally sell their agricultural and livestock?

Community market	1
Market in neighboring areas	2
Domestic middlemen	3
Exporters	4
Public institutions	5
Cooperatives	6
Local stores and shops	7
Only self-consumption / no outside sales	8

# Q7.8How will you categorize this income from agriculture compared to other years?

Below average	1
about the same level	2>> Q7.10
a very good year above average	3

# Q7.9To what will you attribute this difference in income? Multiple response

Lower yield	1
changes in prices	2
Market transportation costs	3
Other (specify)	4

# Q7.10Did you sell any forest products?

Timber	1
Firewood	2
NFTP (mushrooms, wild fruits, other)	3
Other (specify)	4
Didn't sell	5>> Q 7.12

# Q7.11If Yes, how much did you earn with this last year?

Ks	KS
1/2	 ND

#### Q7.12Did you sell any livestock products

Milk	1
Meat	2
Wool	3
Eggs	4
whole animal	5
No	6>> Q 7.14
Didn't sell	7

#### Q7.13If Yes, how much income did you earn from livestock products?

Ks /year _____KS

#### Q7.14Did you earn money with on-farm labor?

Planting	1
Weeding	2
Harvesting	3
Tilling	4
No – Skip to Q7.17	5
Other:	6

#### Q7.15If Yes, what was your daily wage for this labor?

Male	Ks/day
Female	Ks/day

#### Q7.16How many days per year did you do on-farm labor?

____days

#### Q7.17Did you earn money with off-farm labor?

Hawker	1
Government staff	2
Business	3
Shop keeper	4
Craftsman	5
Construction worker	6
Driver	7
Domestic worker	8
No – Skip to Q7.20	9
Other (Specify)	10

#### Q7.18If yes, what was your daily wage for this labor?

Male	Ks/day
Female	Ks/day

# Q7.19How many days per year did you do off-farm labor?

days			

# Q7.20What is your most important income source?

Agricultural sales	1
on-farm labor	2
off-farm labor	3
remittance	4
pension	5
cash-for-work	6
Animal's product sales	7
Other (Specify)	8

#### Q7.21What is your second important income source?

Agricultural sales	1
on-farm labor	2
off-farm labor	3
remittance	4
pension	5
cash-for-work	6
Animal's product sales	7
Other (Specify)	8

#### Q7.22What is your third important income source?

Agricultural sales	1
on-farm labor	2
off-farm labor	3
remittance	4
pension	5
cash-for-work	6
Animal's product sales	7
Other (Specify)	8

# Q7.23Do you have savings? - If yes, how much in total have you saved?

<ks25,000< th=""><th>1</th></ks25,000<>	1
25,001-50,000	2
50,001-75,000	3
75,001-100,000	4
-----------------	---
100,001-150,000	5
150,001-200,000	6
200,001-300,000	7
Ks300,001+	8
NO savings	9

## Q7.24 Have taken any loans in the last year?

<ks25,000< th=""><th>1</th></ks25,000<>	1
25,001-50,000	2
50,001-75,000	3
75,001-100,000	4
100,001-150,000	5
150,001-200,000	6
200,001-300,000	7
Ks300,001+	8
NO loans	9

## If borrowed

Q7.25From whom did you borrow money?

Private bank	1
Micro-credit provider (low interest, 2.5% or less)	2
Village Savings and Loans Association	3
Family/friend	4
Money lender	5
Shop-keeper	6
Government	7
Other:	8

## Q7.26 What was the most important use of the *loans* taken in the last year?

Home improvement including water supply	1
House purchase or construction	2
Construction other than house	3
Land purchase/rent	4
Purchase of working tools or equipment	5
Food purchases	6
Purchase of agricultural inputs	7
Purchase of animals/medicine for animals	8
Purchase of other assets	9
Health emergency	10

Business investment	11
Repayment of loans	12
School/education fees/costs	13
Migration expenses	14
Other:	15

## Q7.28 Do you have any debts?

<ks25,000< th=""><th>1</th></ks25,000<>	1
25,001-50,000	2
50,001-75,000	3
75,001-100,000	4
100,001-150,000	5
150,001-200,000	6
200,001-300,000	7
Ks300,001+	8
NO debts	9

## Q7.29Do you get remittance from a family member?

Yes	1
No	2>> Q 7.31

## Q7.29a If yes

in-country	1
ex-country	2

#### Q7.30If yes, how much remittance do you receive per month?

<ks25,000< th=""><th>1</th></ks25,000<>	1
25,000-50,000	2
50,000-75,000	3
75,000-100,000	4
100,001 and above	5

## Q7.31What is the average total monthly income for your HH from all these sources?

<ks25,000< th=""><th>1</th></ks25,000<>	1
25,001-50,000	2
50,001-75,000	3
75,001-100,000	4
100,001-150,000	5
150,001-200,000	6
200,001-300,000	7

Ks300,001+	8
NO Income	9

#### Q7.32How do you compare your household income over the last year with the previous year?

Increased	1
Stable	2
Decreased	3

#### Q7.33Do you practice share cropping / lease land?

Yes	1
No	2

## Q7.33a If yes,

share cropping	1
land leasing	2

## Q7.34If Yes, do you sell the produce?

Yes	1
No	2

## Q7.35Do have farm machinery?

Thresher	1
power tiller	2
tractor	3
sprayer	4
irrigation pump	5
cart	6
seeder	7
other:	8

#### Q7.36 Do you own a house

Yes	1
No	2

## 8. Housing & Assets

Q8.1 Please describe the household's type of dwelling (Observation)

Brick house	1
Brick nogging	2
Wooden house	3
Bamboo	4

Hut with post life 2-3 years	5	
Hut with post life 1 year	6	
Others (specify)	7	

## Q8.2 Please describe the household's dwelling characteristics (Do not ask) (Observation) Roof

Thatch / Large Leaves / Palm / Dhani	1
Bamboo	2
Wood	3
Zinc/Corrugated sheet	4
Tile / Brick	5
Concrete	6
Others (specify)	7

## Q8.3 Major construction material of the external (outer) walls of dwelling

Thatch / Large Leaves / Palm / Dhani	1
Bamboo	2
Wood	3
Corrugated sheet	4
Tile / Brick	5
Concrete	6
Others (specify)	7

## Q8.4 Major construction material of the floor

Wood	1
Parquet	2
Concrete	3
Brick	4
Bamboo	5
Earth	6
Others (specify)	7

#### Q8.5 What type of toilet facility is used by the house?

Flush, to piped sewer system	1
Flush to septic tank	2
Flush, to pit latrine	3
Flush, to elsewhere	4
Ventilated improved pit latrine	5
Pit latrine with slab	6
Pit latrine without slab / open pit	7
Composting toilet	8
Bucket	9
Hanging toilet	10

No facilities, or bush	or field	11
Others (specify)		12

## Q8.6 Does your household, including all members, own any of the following items?

Bicycle	1
Motorcycle	2
Trishaw	3
Trawler jeep (Trawler-cum-jeep)	4
Car	5
Truck	6
Boat without motor	7
Boat with motor	8
Fridge	9
Radio	10
TV	11
DVD / EVD player	12
Computer	13
Washing machine	14
Sewing machine	15
Landline phone	16
Cell phone	17
Agricultural machine	18
Other means of Production	19
Other (specify)	20

#### **END OF THE QUESTIONNAIRE**

# **ANNEX D - VILLAGE PROFILE**

## INFORMED CONSENT AND INTRODUCTION

**Informed consent:** it is necessary to introduce the village leaders to the survey and obtain the consent of all prospective respondents to participate. If a prospective respondent (e.g. a woman decision maker) is not present at the beginning of the interview, be sure to return to this page and obtain consent before interviewing him or her. Ask to speak with an important person in the village.

Hello. My name is _______. I am working with MSR/UNDP. We are conducting a survey to determine the success of the UNDP project 'Addressing Climate Change Risks on Water Resources and Food Security in the Dry Zone of Myanmar', which has been funded from Adaptation Fund on fresh water access, food security, and rural livelihoods and income. We are interviewing 840 households in 42 villages Shwebo, Monywa, Myingyan, Nyaung U, and Chauk Townships in the Dry Zone where UNDP is working. These include some villages where UNDP has been working and other villages where UNDP has never worked.

Each village has been selected randomly so that we can collect information on the livelihoods and the kinds of food households grow and eat to see whether UNDP's support has been effective. Your village is among those selected and we would like to ask you as an important member of the village some questions about your village. In total, the questions should take about 15 minutes of your time.

Your information will help UNDP know how best to provide support, and to understand if this assistance is helping households and children in this village. We ask for your open and honest information. The results will be summarized for the 42 selected villages. I hope you will assist us and the UNDP project so that it can work more effectively to support the poor and vulnerable people of Myanmar.

We can return later today if you don't have time to finish all the questions now. All of the answers you give will be confidential and will not be shared with anyone other than members of our survey team. You don't have to be in the survey, but we hope you will agree to answer the questions since your views are important. If I ask you any question you don't want to answer, just let me know and I will go on to the next question or you can stop the interview at any time. In case you need more information about the survey, you may contact the person listed on this card.

#### GIVE CARD WITH CONTACT INFORMATION

Do you have any questions about the study or about your participation?

## ASK THE FOLLOWING CONSENT QUESTIONS OF ALL PROSPECTIVE RESPONDENTS. AS APPLICABLE, CHECK AND SIGN THE CONSENT BOX BELOW.

[NAME], do you agree to participate in the survey? NAME: ______ RESPONDENT AGREED _____ RESPONDENT DID NOT AGREE _____

#### ADDITIONAL VILLAGE LEADERS ASKED TO PARTICIPATE

		RESPONDENT Agreed	RESPONDENT Didn't agree
1	NAME		
	Do you agree to participate in the survey?		
2	NAME		
	Do you agree to participate in the survey?		
3	NAME		
	Do you agree to participate in the survey?		

My signature affirms that I have read the verbal informed consent statement to the respondent(s), and I have answered any questions asked about the study. The respondent consented to the interview.

INTERVIEWER'S NAME AND CODE

_____/___/_2016

SIGNATURE AND DATE

	/2010	6
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## Questionnaire No

SECTION 1: GENERAL INFORMATION					
1.1	Village name		II		
1.2	Village MIMU code/AF code				
1.3	Village tract name		۱۱		
1.4	Township name				
1.5	State/Region				
1.6	UNDP project Village/ Control Village	UNDP project Village1 Control Village2			
1.7	Interview date	DD_/MM/ <u>2016</u>	//2016		
		Name	Code		
1.8	Enumerator		II		
1.9	Supervisor				
1.10	Editor				

Name of UNDP Implementing Partners who are working or plan to work in this village:	1
	2
	3
	4
	5

## **Respondent information**

	Name	Sex Male 1 Female2	Designation/Occupation
Respondent-1		12	
Respondent-2		12	
Respondent—3		12	
Respondent—4		12	
Respondent—5		12	
Village telephone no (Phone number of village authority).			

1. Households		Total
1.1	# of households	
2. Village po	pulation	Total
2.1	Male	۱۱
2.2	Female	II

10.	What are the average wages per day (Kyat) paid locally			
10.1	MaleKyats			
10.2	Female	Kyats		

# 11. Village access and proximity to services

	Multiple answers	Distance from ple answers village		Mode of Transport		Time needed (One-way) (minutes)		Cost (Kyats) (One-way)	
		(mile)	Wet	Dry	Wet	Dry	Wet	Dry	
		а	b	С	d	е	f	g	
11.1	Nearest township								
11.2	Sub-rural health centre								
11.3	Primary school (govt)								
11.4	Middle school (govt)								
11.5	High school (govt)								
11.6	Bank								

## Codes for Column b and c:

On foot1	Motor cycle
Ox-cart/ horse cart2	Car
Trailer Jeep3	Boat
Bicycle4	Other Specify

12. Standard of road access to the village: TICK ONE THAT BEST DESCRIBES THE SITUATION				
<b>No road</b> reaching all the way to the village (e.g. access by water sea/river)	1			
Rough track reaching all the way to the village (bullock cart or walking only)	2			
Rough track Suitable for trawlargee but not for cars/trucks	3	II		
Accessible by car/truck in dry weather only	4			
Accessible by car/truck in all weather	5			

	Туре	Yes1 No0	If 'yes', No. of HH		
14. Ava	ilability of electricity				
14.1	Electricity (Govt)				
14.2	Electricity organized by village				
14.3	Electricity (Private/commercial generator)				
15. Infra	15. Infrastructure/facilities within the village				
	Туре	Yes1 No0	Number		
15.1	Primary school (govt)				
15.2	Middle school (govt)				
15.3	High school (govt)	II			
15.4	Non govt school	II			
15.5	Sub rural health centre				
15.6	Grain bank/seed bank	II			
15.7	Emerald green project				
15.8	Cyclone shelter				

Are there any functioning self-help groups in the village?

SHG refers to cooperative activities centered in the community and it is defined as a group or association of individuals with common interests and economic needs who undertake a systematic economic activity, participating

16. directly in decision making and sharing benefits on an equitable basis. In addition the experiences of SHG have led to attempts to build local level organizations like cooperatives, credit societies, neighborhood or community development associations, water sharing associations and women's groups.



17.	. If yes, what are they and what do they do?							
	Name of self help group		Main a	ctivities	No of member HHs	No. of male membe rs	No. of female membe rs	When did it last meet? (indicate the month/year)
	Name	Code	Main activitie s	Code				
	а		ł	D	с	d	е	F  M_  M_  Y_  Y_
1								
2								
3								
4								
5								
6								
7								

NOTE: If members are households, use column c. If members are individuals, use column d & e.

10	Have any NGOs been working in the village in the	Yes1	if "⊃" ▶⊃0		
10.	past 24 months?	No2	11 2 20	II	

19	If yes, what have been their major activities in the village?						
	Name of NGO	NGO code	Major activities?	Activities Code			
	а		b				
1							
2							
3							
4							
5							
6							
7							
8							

20.	Has any government or non-government agency conducted training for any members of the village in the past 12 months?	Yes1 No2	If "2" ▶22	
-----	----------------------------------------------------------------------------------------------------------------------	-------------	------------	--

21.	If yes, what type of training?			
	Name of agency or NGO Or Government technical department	NGO code	Nature of training	Training Code

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	а		b	
1				
2				
3				
4				
5				
6				
7				
8				

## 22. Source of credit in this village

	Type of lender	Interest rate (%) Per month	Term of loan (moths) Write dash (- ) if no term fixed.	Frequency of repayment	Repayment (in cash/kind) Cash1 Kind Specify 2	Collateral needed (Y/N) Yes 1 No 2
		а	b	С	d	е
1						
2						
3						
4						
5						

<u>NOTE</u>: In the "Type of lender" column, fill in the following codes:

Private bank	1
Micro-credit provider (low interest, of 2.5% per month or less	2
Village Savings and Loans Association	3
Family/friend	4
Money lender	5
Shop-keeper	6
Private company	7
Farmers Association/Cooperative	8
Pre-sale of product to trader	9
Government	10
Emerald Green loan	11
Pact Myanmar loan	12
Other (specify)	88

		Yes1 No2
23.	Is there any savings and loan association operating in this village?	
24.	Does the village have access to low interest micro-credit?	

	Name of Savings and Loan group or microcredit provider		Main objective for providing credit	Total no. current loans in village	No. current Ioans to
	Name	Code		from these sources	women
	а		В	С	d
1		II	II	II	
2		١١			
3		۱۱			
4		۱۱			
5					
6					

## 25. If yes to either or both questions, complete the following table

## Note: Codes for Main objective for providing credit:

Agri	1
Fishery	2
Small business	3
Non-farm IGA Specify	4
Other Specify	5

## 26. Water sources For domestic use in the village

			Does your village	Quantity 1 Very	Purpose of use	All-year- round availability
	Main water source		use this source 1 Yes 2 No	important 2 important 3 Minor	Drinking1 Other HH uses2 Both3	Yes1 No0
26.1	River	1	12	1 2 3		II
26.2	Creek	2	12	1 2 3		II
26.3	Pond	3	1 2	1 2 3		
26.4	Brick well	4	1 2	1 2 3		
26.5	Hand-dug well	5	1 2	1 2 3		
26.6	Shallow Tube well (< 200 feet)	6	12	1 2 3		

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26.7	Deep Tube Well (>200 feet)	7	1	2	1 2 3	II	
	Tube Well (Motor pump;		1	2	1 2 3		
	run by air compressor,	8					II
	submersible pump by						
26.8	electric or diesel engines)						
26.9	Tube well (Hand pump)	9	1	2	1 2 3		
26.10	Spring water (natural)	10	1	2	1 2 3		
26.11	Spring water (stored)	9	1	2	1 2 3		
	Public water supply	10	1	2	1 2 3	1 1	1 1
26.12	system	10				II	II
26.13	Government Dam	11	1	2	1 2 3		
26.14	Private Dam						
26.15	Rain water storage tank	12	1	2	1 2 3		
26.16	Purchased water	13	1	2	1 2 3		
	Other (specify)	14	1	2	1 2 3	1 1	1 1
26.17		14				II	II
	Other (specify)	15	1	2	1 2 3		
26.18		13				11	II
	Other (specify)	16	1	2	1 2 3		
26.19		10				II	11

			Purpose of use	
27.	Is there any irrigation system in this village?	Yes1 No2	Drinking 1 Other HH uses2 Agriculture 3	١١

## 28. What are the major crops produced in the village?

Season Name	Crop Name
Dry Season (MAR-MAY)	
Wet Season (JUN-OCT)	
Cool Season (LAST CROP)	

29. What are the major farming activities?					
Season Name	Activities				
Dry Season (MAR-MAY)					
Wet Season (JUN-OCT)					
Cool Season (LAST CROP)					

#### 30(a).Does your village experience any natural or manmade disaster?

Yes1	
No2>> Q33(a)	

## 30(b).What types of natural or manmade disaster did your village experience? MA

Types of natural or manmade disaster	Code
Earthquake	1
Flooding	2
Cyclone	3
Drought	4
Water scarcity	5
Land sliding	6
Broken River bank	7
Fire	8
Other (specify)	9

#### 30(c). When did your village face that natural or manmade disaster last time?

	Code
Within last 6 months	1
Within last 1 year	2
Within last 2-3 years	3
Within last 4-5 years	4
Within last over 5 years	5

## 30(d). How often did your village face that natural or manmade disasters?

	Code
More than 1 time within 1 year	1
Yearly	2
Once within 2-3 years	3
Once within 4-5 years	4

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Seldom

31(a).Do you have that natural or manmade disaster preparedness action (for each type of disaster)?

5

No=2>> Q 32(a)

**31(b). If "yes",** how can people prepare/get ready for **natural or manmade** disasters? **CODE ALL THAT APPLY AND RECORD VERBATIM IN OTHER CATEGORY. MULTIPLE CODE.** 

a) Make permanent adjustments to my home, e.g. Flooding: using stilts to raise the	1
home, Earthquake: follow building codes	
b) Make temporary adjustments to my home, Earthquake: fix furniture to the walls,	2
Flooding: using sandbags	
c) Have disaster preparedness plan (for family or local area / community)	3
d) Learn a skill, e.g. how to swim, first aid, how to build a shelter.	4
e) Sign up for early warning alerts	5
f) Listen to weather forecasts	6
g) Store food	7
h) Save money	8
i) Take actions to make sure people can get easily to a place of safety (e.g. repair	9
routes to shelters, make shelters safer)	
j)Join a local/village/community disaster committee	10
k) Take out insurance in case of a disaster	11
I)Plant trees	12
m)Construct dams/roads/footpaths	13
Other (specify)	14
Don't know	88
Not applicable	99

#### 32(a). Did you respond on your last recently disaster?

Yes=1					
No=2>>0	Q33 (a)				

#### 32(b). If "Yes", How did you respond on your last recently disaster?

Raise an alarm	1
Keep on top of weather reports	2
Follow emergency plan	3
Evacuate to safe place	4
Have emergency supplies e.g. torches, medication, food, fuel.	5
Pray to god	6

Other (specify)	7
Don't know	88
Refused/No answer	99

## 33(a). Months during which water is scarce

		Yes	1
		No0	
January	1	1	
February	2	2	
March	3	3	
April	4	4	
May	5	5	
June	6	6	
July	7	7	
August	8	8	
September	9	9	
October	10	10	
November	11	11	
December	12	12	

# 33(b). If "Y", any impact on?

	Yes=1, No=2
Impact on Irrigation water	
Impact on Drinking water	
Impact on drinking water for livestock/animals	

End of the village profile

# **ANNEX E - FOCUS GROUP DISCUSSION GUIDE**

#### Focus group discussion guide for UNDP Impact Assessment survey

**Informed consent:** it is necessary to introduce to each participant the purpose of the Focus Group Discussion and gain their consent before starting the Focus Group Discussion. Only, once each participant has given his or her consent can the Focus Group Discussion start.

Hello. My name is _______. I am working with MSR/UNDP. We are conducting Focus Group Discussion sessions to determine the effectiveness of the UNDP project 'Addressing Climate Change Risks on Water Resources and Food Security in the Dry Zone of Myanmar', which has been funded from Adaptation Fund on fresh water access, food security, and rural livelihoods and income. We are doing this to help understand the views of people about their community and how the different types of support given through the UNDP project are working and can be improved.

As part of a small group with fellow villagers, we would like to ask your views on a range of issues. In total, we will be undertaking 20 Focus Group Discussions in 20 villages in Shwebo, Monywa, Myingyan, NyaungU, and Chauk Townships in the Dry Zone where UNDP is working. In your village we will be undertaking 1 Focus Group Discussions. The views expressed in your group will be included in a report and the information will be used to help improve projects so they can better support villagers such as yourselves in the future.

The answers and information you give will be completely confidential. Nevertheless, with your permission, we wish to record the event to enable us to better analysis what is said. This will enable us to explain what people in this community and others think in a report, but we will not mention any names. Your personal contributions and views will not be shared with anyone else in a way that can identify you.

During the Focus Group Discussion, one of my colleagues from MSR will ask questions to you and the other participants and another colleague will record with your permission and write down the answers from the group. The discussion will take about 1.5 hours to complete and we will have some refreshments which you can consume during or after the Focus Group Discussion.

We value your participation and your inputs to improve our program. However, you are not required to participate and you are, of course, free to leave at any time.

The note-keeper should record the following identifier information:

Village tract of focus group

Village of focus group

Date of Discussion

Number of focus group participants

Gender of focus group participants

Male-

Female-

	Name	Age	Sex	Education Level	Marginal Farmer/Landless Yes/NO	Signature
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

Guide questions

- In the following sections, we want to explore a number of key research questions. Ask the main question first, and then use the detailed questions to help you and the participants explore particular issues in depth or obtain more information.
- Be flexible: add your own questions to find out other interesting information, and only ask questions that seem relevant to the group.
- Remember the key issues we want to understand. Phrase questions in ways people will understand easily. Change the order around if it helps keep an interesting conversation going.
- Use your 'village information summary table' and your knowledge from the Village Profile (Key Informant Interview) to quickly understand what projects have been operating in the village.

## General overview

 Do you believe households in your community are better off, worse off or they remain the same compared to two years or so? How (in what ways) and why (what brought these changes about)?

Probes: Is this the case for everyone in your village? Or are there differences between groups of people – the better off/the poor, those with land/without land, men/women? Changes based on: a) Income/livelihood activities b) Assets c) Food security d) Any other factors

2. What were the most significant changes in the community over the last year? (Probe for positive and negative changes). Why are these the most important changes? What brought these changes about?

## Livelihoods and income

- 3. How do you and other people in the community earn an income? (Describe activities briefly, probe for agricultural and non-agricultural; casual or wage labour; full-time employment)
- 4. Have there been changes in people's incomes over the last year? If so, what has changed? Changes in amount? Changes in sources? How (in what ways) and why (what brought these changes about)?

#### Assets

5. In the village, over the last two years, have there been changes in assets? If so, what have been the biggest changes? Why have there been these changes?

Probes – changes in a) household assets (such as furniture, mobile phones, motorbikes etc.), b) household livestock, c) ownership of agriculture equipment, d) sources of household lighting, e) materials of the house – roof, walls, f) Family Business such as weaving, glazed earth wares

5(a) In the village, is there anyone who has land access in the form of communal land?

## **Food security**

- 6. How do you describe the current food security situation in your community in general? Have there been months where households have been short of food? If so which months? How has the food supply changed over the last year? If so, what has changed? How has the food access or availability changed in the village? How (in what ways) and why (what brought these changes about)?
- 7. Are there any local groups, Local groups / individual farmers (Paddy bank/ Corn bank) by rural communities / DOA Community initiated groups with own fund and management actively promoting food and livelihoods security in your village? In addition, is there any group formed by outsiders and received revolving fund for livelihood purpose such as Emerald Green project by the government?

Probe: What are these groups doing? What impact (positive and negative) are these groups having for your village? What are these groups' strengths and weaknesses?

Village Development Events

(Use your 'village package' and your knowledge from the local implementing partner to probe for the activities you know have taken place in that village)

Are you aware of any development efforts in your village? (If yes) What have they been doing? (Use your village package if they can NOT remember any such projects). Development efforts:

Is it self-help basis or supported or donated by outsiders (government / private) especially related to access to water?

- 8. Of all the types development efforts, which were the:
  - a. Most relevant to the needs of this village
  - b. Which ones have had the biggest impact on the village
  - c. Have there been any negative impacts on the village? If so in what ways? Explain further the negative impacts.
- 9. Were community members involved in the planning process of these development efforts, were they involved in deciding what would be most useful for this village? How? Who from the community were involved? Were some people left out? Who and why?
- 10. Do you feel these development efforts in your village will have longer term impacts on your village? What and why?

Probe: Which activities will be the most sustainable (used in the longer term)? Why those and not others? Which the least? Why?

Savings and credit and revolving funds

- 11. Do you belong to a **savings and loans group**, **a revolving fund** or a **credit facility** based in your community (*probe with example*)?
  - Have your households taken out loans? What for? How does this new credit/revolving fund compare with what you used before? (Other sources of credit, money lenders, payment terms, interest rates etc.)?
  - Do you think this new credit/revolving fund is making a difference for the households involved? How/why? Any problems for some households?
  - Is the overall level of household indebtedness increasing/decreasing? Is the magnitude of debt increasing or decreasing, relative be to households' increase or decrease in income and assets?
  - How have these saving/credit schemes affected this community? Was it useful (if not, why not)? What are the main changes it triggered? (*Probe for small businesses, investments, credit worthiness, etc.*)
  - Is it still operating? How? If not, why not?

Community organisations

12. Does your village have any village organisations – such as village development committees, mothers groups? Over the last year, have there been any changes to these organisations (number of organisations, type of organisations, how often they meet

etc.)? What are the changes? Why? Do you actively participate in any of these groups? Why?

Probe: Who are the target groups (e.g. elderly, youth, and women mothers)? Who participates in these groups - are there differences in participation – for men and women, based on age, those who are poor compared to those better off?

Different groups within your village

- 13. I now want to briefly ask you if the development projects in your village have impacted different groups differently Did the following groups of people have the same chance of participating (or lower/higher chances)?:
  - Women/men
  - The disabled
  - Poor/non-poor

Why? How could the current targeting be improved?

14. Were the impacts (both positive and negative) different for the different groups? How were the results different between men versus women? Between poor and non-poor. The abled versus the disabled? (probe for different impacts of different activities)

15. Do you think the status of women has changed last year? In what ways and why? Probes: a) Economic empowerment, b) decision making (household, community), c) other

Climate Change

- 16. Is there any changes related to climate in these years? Please Explain (Such as Flood, Drought, Extreme temperature)
- Is there any experiences related to scarcity of water? Please explain in detail. (How prepared/How respond) Because of scarcity of water, do they migrate or does production decrease?

Resilience

- 17. How do people in your village cope with shocks, such as natural disasters (Drought, Extreme temperature and Floods and illnesses in families?
- 18. What types of support can people get within the community? Have these types of support increased or decreased over the last year? How (in what ways) and why (what brought these changes about)?
- 19. How do you describe the level of social cohesion of your community?

Probe: Does your community work together, makes decisions together?

20. Do you think your community has become more or less united compared to over the last year? How (in what ways) and why (what brought these changes about)? To finish the discussion, ask if anyone has any questions and thank everyone for their time. Remember that sometimes the best comments come once the focus group is ended, so stay to chat for a short while and then record your impressions and any good quotes.

#### **FGDs in AF Villages**

Township	Village Tract	Village	Type of HH
Chauk	Pa Khan Nge	Auk Lel	Farmer
	SweiPaukKan	HtanChauk Pin	Farmer
Monywa	KyaungKone	KyaungKone	Landless
	Ma Yoe Taw	Ma Yoe Taw (North)	Landless
Myingyan	HtaNaungTaing	HtaNaungTaing	Landless
	Shar Taw	Shar Taw	Female
Nyaung U	TuYwinTaing	KanGyiKone (YwarThit)	Female
	Taung Bi Lay	U Yin	Landless
Shwo Bo	Oke Shit Kan	Oke Shit Kan	Farmer
SIIWE DU	KhunTaungGyi	KhunTaungGyi	Farmer

## **FGDs in Control Villages**

Township	Village Tract	Village	Type of HH
Chauk	Than Bo	Than Bo (North)	Landless
	HteinKan	Sin Ka	Landless
Monywa	Thar Si	Twin Chaung	Farmer
	TeGyiKone	TeGyiKone (East)	Farmer
Myingyan	KokeKe	KokeKeYwarThit	Landless
	ChaungDaung	Kyauk Yan	Landless
Nyaung U	ShweKaHpyu	ShweKaHpyu	Farmer
	Ku Taw	Kyo Pin thar (East)	Female
Shwo Bo	Min Kyaung	Min Kyaung	Farmer
SHWE BU	KyaukMyaung	Ma Khauk	Female