Livelihoods and Food Security Trust Fund

Baseline Survey Results

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Livelihoods and Food Security Trust Fund

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Disclaimer

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Townships covered by LIFT Fund Baseline Survey in Myanmar

Abbreviations and Acronyms

HDDS	Household dietary diversity score
HHS	Household hunger scale
EC	European Commission
EU	European Union
FGD	Focus group discussion
GRET	Groupe d'Echange et de Recherche Technologiques
GTZ	German Technical Cooperation
LIFT	Livelihoods and Food Security Trust (Fund)
M&E	Monitoring and evaluation
MAHFP	Months of adequate household food provisioning
MCC	Millennium Challenge Corporation
NGO	Non-government organisation
UN	United Nations
UNDP	United Nations Development Program
UNOPS	United Nations Office for Project Services

Table of Contents

1. Introduction

The multi-donor Livelihoods and Food Security Trust Fund (LIFT) started new programmes of support in the Delta/Coastal, Hilly and Dry zones of Myanmar in 2011 and planned another in Rakhine State in the northern Coastal Zone. As part of its evaluation strategy, LIFT conducted a baseline survey covering 252 villages spread across these zones in late 2011 to provide information that could be used to assess the outcomes and impacts of this support. This document presents the findings of the baseline survey.

2. Background

LIFT is a multi-donor fund with designed to increase food availability and incomes of 2 million poor and vulnerable people in Myanmar. Donors to LIFT currently include Australia, Denmark, the European Union, the Netherlands, New Zealand, Sweden, Switzerland, and the United Kingdom. Recent additional contributions by donors have increased the funds available, and the term of the LIFT programme has been extended until the end of 2016.

LIFT contributes resources to a livelihoods and food securityprogramme tosupport the achievement of Millennium Development Goal 1[1] -the eradication of extreme poverty and hunger in Myanmar. LIFT's purpose is to increase food availability and incomes of two million target beneficiaries; the poor and vulnerable. LIFT works through a trust fund modality providing funding to a broad array of implementing partners including international NGOs, national NGOs and private sector agencies, and UN organisations, which contribute to common programmatic outputs:[2]

- **Output 1: Increased agricultural production and incomes supported through improved production and postharvest technologies, improved access to inputs and markets.** Activities under this output will increase food and livestock production for both consumption and sale thereby supporting food security and income. Support is provided as inputs (e.g., seed, credit), investments in raising productivity (e.g., tillage equipment, bunds, irrigation equipment), technical knowledge and skills (new varieties, optimal fertilizer use, pest/disease control), post-harvest management and marketing support (market linkages, quality control). Increasing the diversity of agricultural income sources and dietary diversity are also objectives of many partner projects (reducing livelihood risks and improving nutrition).
- **Output 2: Targeted households supported in non-agricultural livelihood activities and/or trained in livelihood skills for employment.**Activities under this output generally support the landless and contribute to household incomes, butalsocontribute to food security (e.g., support to wild capture fishery production). Support covers a variety of enterprises and vocations including: mechanical repairs, blacksmiths, masons, carpenters, tailors, food processing, ceramics, and fuel efficient stoves. Again support is in the form ofinputs, capital investments, credit, training and technical assistance, and marketing support.
- **Output 3: Sustainable natural resource management and environmental rehabilitation supported to protect local livelihoods.**Many livelihoods can be affected by environmental degradation and hence activities under this output support sustainable natural resources management. This output also supports practices that are better adapted to climate change and address the associated vulnerabilities. Activities under this output are in the areas of community forestry, mangrove rehabilitation, construction and rehabilitation of

[1] Reduce by half the proportion of people living on less than a dollar a day; achieve full and productive employment and decent work for all, including women and young people; reduce by half the proportion of people who suffer from hunger.
[2] In addition to the below outputs, there are three outputs related more to fund management and as such are not the direct focus of implementing partners.

embankments against flooding and salt water intrusion, soil conservation, watershed management, training and awareness among others.

- **Output 4: Effective social protection measures established that increase the incomes, enhance the livelihood opportunities or protect the livelihoods assets of chronically poor households.**Activities under this output aim to more directly provide a safety net for the most food insecure (who may not benefit from either outputs 1 or 2). To date these have included rice banks for poor households to draw upon throughout the year (buying rice after harvest when rice prices are at their lowest), cash for work, and conditional cash grants. Several LIFT partners are currently investigating with communities other options to pilot.
- **Output 5: Capacity of civil society strengthened to support and promote food and livelihoods security for the poor.**Social actors and social action are key to improving the food and livelihoods security of poor and vulnerable people in Myanmar. LIFT works with different levels of local groups and organisations, and supports their technical, organisational and networking capacity, and its application. Activities under this output cover both aims: capacity to support project planning and management, and capacity for advocacy.

LIFT is implemented through a variety of local implementing partners (IPs) who were successful in submitting proposals that supported the LIFT purpose in the areas targeted. An initial one-year of support was provided to partners working in the delta region of Myanmar. This Delta I sub-programme finished in early 2011. Two new three-year sub-programmes commenced in 2011 providing funding support to IPs working in the delta (the Delta II sub-programme) and more widely across the country (the Countrywide sub-programme). A fourth programme of support is planned in Rakhine State to provide support to the four townships most affected by Cyclone Giri which hit in October 2010 (the Rakhine/Giri sub-programme). Other new sub-programmes and modalities of LIFT Fund support are expected over the life of the Fund and may require separate evaluation strategies and baseline studies as they are unlikely to be covered by this baseline.

3. Objectives of the baseline survey

The LIFT baseline survey aimed to provide representative quantitative and qualitative information on livelihoods and food security covering villages proposed by LIFT partners working in the Delta II and Countrywide sub-programmes, and comparable control villages. Baseline information was required to represent the three broad agro-ecological zones covered in the Delta II and Countrywide sub-programmes plus cover a fourth area where a new LIFT sub-programme will commence in 2012 (Giri-affected areas of Rakhine State).

The baseline survey results will be a fundamental part of LIFT's evaluation strategy that includes a *before-after*assessment of LIFT interventions and a *with-without*analysis using results from control villages.

The baseline surveyaims to provide the basis to evaluate the effectiveness and outcomes of LIFT support to households particularly in terms of their livelihoods and food security. Findings of the survey in LIFT villages and control villages will be compared with findings at mid-term and, more importantly,the end of the Delta II, Countrywide and Rakhine (Giri-affected) sub-programs.

4. Methodology, resources and budget

4.1 Sampling

The sampling methodology was designed toallow statistical comparisons among the three agroecological zones (Coastal/Delta, Hilly and Dry zones). In addition,sampling included a similarly sized sample of the Rakhine (Giri-affected) area which in some respects represented an oversampling of the coastal zone, but was required to provide baseline information prior to the proposed new Rakhine/Giri sub-programme. Eight-hundred households were also selected as a control.

Total sample size was 4,000 households drawn in a two-stage sampling process from 252 villages chosen with probability proportional to their number of households. Eight-hundred households were then randomly selected from each zone (coastal/delta, hilly and dry), 800 from Rakhine (Giri-affected areas), and 800 as a control. In each village 16 households were randomly selected (using a process of systematic random selection from the list of households) and an average of 16 households per village were interviewed using a formal questionnaire.[3]Sample size was based on the formula to estimate a proportion in a sample with a known level of confidence and precision to reflect the proportion in the population. For example, we could consider the adoption of new livelihoods or agricultural practices promoted under LIFT. We assume a large population but don't know the variability among households with regard to practices being used, we therefore assume p=0.5 (maximum variability). If we want a 95% confidence level and a 5% precision, then using the formula below:

$n=(Z*Z)pq/(e*e) = 1.96*1.96*0.5*0.5/(0.05*0.05) = 385$

The basic sample size of 385 for each stratum was doubled to allow for a design effect (due to clustering in the two stage sampling design) and rounded up to 800 households per stratum. The 2,400 households should therefore be sufficient to represent the three zones (coastal/delta, hilly and dry). The villages in these zones were selected (with probability proportional to size) from all villages where LIFT partners were planning to implement their projects.[4]

A further 50 villages and 800 households were randomly selected from all villages that had been moderately or severely affected by Cyclone Giri in the four Rakhine townships that had suffered damage. In this case, given that the new sub-programme had yet to commence, it was impossible to determine which villages LIFT would work in. Therefore these 50 villages and 800 households would inevitably include some villages and households where LIFT partners would not be working, that could serve as a control.[5]

An additional 800 households were selected from 50 control villages to cover the three zones (coastal/delta, hilly and dry) to serve as a control for the 2,400 households in the 150 LIFT villages in these zones. These control villages were selected by LIFT partners to represent villages where they were not planning to work but had similar characteristics to the villages in which they planned to work.

The list of villages included in the survey is provided at Annex A.

[3] There were two small villages selected that had less than 16 households so that another village was selected to make up the total of 16 households.
[4] The IPs in the LIFT Delta 2 and Countrywide sub-programmes collectively planned to cover 69 townships and 3,580 villages (as at 24th February 2012).
[5] The relative proportions of "LIFT villages" and "control villages", and the suitability of these control villages, will be assessed once the new sub-programme is underway.

4.2 Village profiles

The characteristics of each village selected for the survey were documented through a process of key informant interviews with representatives from the village authorities and leaders. A set format for this information was developed and pre-tested in Myanmar language, and enumerators were trained in collecting and recording the required information. The English language version of the village profile format is provided at Annex B.

4.3 Questionnaire for household survey

The questionnaire for the household survey component of the baseline survey was designed around key expected outcomes and associated indicators of the LIFT programme. Indicators were also identified for critical questions and key assumptions inherent within the LIFT strategy and programme. However, not all of these indicators were selected for inclusion in the evaluation strategy.

The baseline survey did not include anthropometric measurements to assess nutritional status of children. The estimated sample size to show a 5% change in acute or chronic malnutrition (e.g., chronic reducing from 45% to 40%) would be 2,458 children per stratum. This would require a sample of at least three times as many households (assuming one in three households would have a child under 5). It was therefore decided to use other indicators of household level food security and, where possible,to use nutrition data collected from the national Integrated Household Living Conditions Surveys (2010 and 2015).[6]

The aim was to have a questionnaire that was simple to answer and record responses, and not take more than 45 minutes on average to complete. There were no open questions in the questionnaire making recording of answers simple and quick. All questions were carefully translated and tested and additional response options added as required. Qualitative information was collected by means of focus group discussions (FGDs) with various community sub-groups (e.g., vulnerable/poorest women, vulnerable/poorest men, wealthier agricultural producers, etc.). These used open questions focussing on specific themes.

4.3.1 Questionnaire content

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

<u>Demographic information</u>

- Dependency ratios (relevant to food and livelihood security, amount of household labour for casual work or own agricultural production,etc.)
- Proportion of households with disabled members (and in subsequent surveys will allow assessment of participation of such households in LIFT)
- School attendance for school aged children (this relates to coping strategies)
- Household literacy (important to assess ability to read labels on inputs, access market price information etc).

<u>Household income</u>

- Major sources of income for each agro-ecological zone and social group
- Significance of new sources of income introduced by LIFT partners (frequency and % of households reporting each specific income source)
- Changes in the main sources of household income overtime

[6] The Integrated Household Living Conditions Surveys also estimate share of food expenditure in overall household expenditure, however some concern has been expressed over the accuracy of these survey results at the sub-national level.

- Average household monthly income from all sources (using a simple scale)[7]
- Perception of the change in level of household income from the previous year
- Incidence of working for in-kind payment
- Significance of cash-for-work support (changes in frequency of households benefiting, representation of cash-for-work within the major sources of income)
- Significance of non-agricultural income generation support (changes in frequency and % of households that earn income from non-agricultural enterprises, representation of non-agricultural income sources and enterprises within the five major sources of income).

Casual employment as a source of income for the household

- Number of days of casual employment in the past 12 months (disaggregated by: agricultural/non-agricultural work, and work by male/female household members)[8]
- Perception of changes in availability in casual work from the previous year.

Employment of farm labour

- Days of farm labour employed by farming households (this can be correlated with area of land cultivated, main crops sold, and changes in agricultural assets/practices influenced by LIFT)[9]
- Perception of changes in farm labour employment from the previous year.

Food security

- Number and percentage of households with increased dietary diversity (household dietary diversity score is one measure of improved household food consumption which in turn is an outcome of improved household food access)
- Number and % of households with Months of Adequate Household Food Provisioning (MAHFP) below certain threshold (another measure of household food access)
- Number and % of households with Household Hunger Scale (HHS) score above a certain threshold, median HHS score
- Number and % of households with Coping Strategy Index score above a certain threshold
- Perception of changes in household food supply from the previous year.

Access to land for agriculture

- Number and % of households owning land, and accessing land for agriculture through rental, share farming and other arrangements
- Distribution of land owned by households
- Percent of household land cultivated during main monsoon season (an indicator of agricultural production[10])
- Area and percent of total household land that can be irrigated.

Crop production

- Mean crop yield estimates for main monsoon and non-monsoon (winter/summer) crops grown by households[11]

[7] Annual incomes from each separate source using recall is not accurate and would take more than 20 minutes of our 45 minute questionnaire. It is sometimes triangulated with household expenditure to ensure income and expenditure are roughly equal. This takes even further time. It is particularly difficult when there are many sources of income, variable seasonal income, income that comes irregularly, several household members earning/generating income, and income that comes from frequent small sales from extended harvesting periods etc.

[8] This is broken down for agricultural work in order to assist respondents to total the days household members worked.

[9] Important to test the assumption that increased production by farmers will result in increased farm labor opportunities for the landless and land poor.

[10] LIFT supports increased area cultivated as well as increased production per unit area (yields).

[11] In order to simplify recall, this section only focuses only on the main monsoon crop and the main non-monsoon crop grown in the preceding 12 months. Annual crops are the focus. Perennial crops have issues of age of planting, extended harvest seasons etc and are not commonly the subject of IP interventions.

- Rating of crop yields compared with the average season
- Number and percentage of farmers applying key inputs or practices (improved varieties, sowing/planting technologies, fertilizers and pesticides)
- Frequency and % of main crops cultivated by farming households – monsoon and non-monsoon
- Significance of any new crops being introduced or being adopted.

Constraints to crop production

- Perspectives of households on major constraints (frequency and percent) that can be compared with the focus of subsequent IP interventions.[12]

Marketing of crops[13]

- Frequency and % of households accessing market price information from different sources
- Frequency and % of households selling at different market locations
- Frequency and % of households selling individually/collectively
- Perceptions of households on the quality of the main crop they sold in the preceding 12 months.

Credit

- Frequency and % of households accessing credit from low interest micro-finance groups, village savings and loans associations and all other formal and informal sources
- Frequency and % of households using loans for different purposes (most important use and second most important use) – provides some understanding of whether loans support sustainable livelihoods or are a coping strategy
- Access to, source of, and use of loans by different socio-economic groups
- Current level of indebtedness (tabulated against sources of income, monthly income and land holding size provides a measure of "affordability")
- Perceptions of the level of household indebtedness over time.

Ownership of livestock, agricultural equipment and other household assets etc

- Frequency and % of households with different livestock assets (these assets are a factor in household income and wealth, but also important to assess impact of IP interventions that provide livestock to land less, poor and vulnerable households)
- Frequency and % of households with different agricultural equipment and machinery (to assess wealth, impact of IP interventions related to agricultural equipment provision, and general changes in agricultural investment and technologies)
- Frequency and % of households with other household assets as a proxy indicator of wealth
- Frequency and % of households with boats, nets, aquaculture ponds (to assess impact of IP interventions related to fishery support, also a factor in food security/income).

Training

- Number and % of households that have received prior training in crop production, livestock, fisheries, or any other vocational skill (to assess significance of training interventions)
- Perceptions of the importance/usefulness of this past training to their household livelihood or food security
- Sex disaggregation of training participants for those households who had received training.

[12] This can indicate whether on subsequent questioning the major/most common constraints have changed. Changes may be due to the impact of IP projects addressing constraints (but could also be due to increased farmer awareness of the value chain and key constraints, or changes in uncontrolled factors [climate, pest and disease outbreaks, input/crop prices nationally/internationally etc]).

[13] IPs in the Delta 2 and the Countrywide sub-programmes that support marketing predominantly support marketing of *crops*.

The English language version of the questionnaire is provided in Annex C.

4.4 Focus group discussions

Qualitative information has been collected by means of focus group discussions (FGDs) with various community sub-groups. These have used open questions developed focussing on specific themes (see Annex D). FGDs were undertaken in 12 villages: threerandomly selected from the villages selected for the household survey in each of the four "strata" (coastal zone, dry zone, hill zone and Rakhine Giri-affected areas). The townships and villages where the FGDs took place are provided in Annex E.

The FGDs were conducted with four major groups:

- Agricultural producers (mixed men and women)
- People involved in other non-agricultural livelihoods/activities (mixed men and women) to cover the main types of non-agricultural activity
- Representatives from the poorest and most vulnerable households (separate groups of women and men).

FGD questions focussed on a few main areas of inquiry including:

- Major livelihoods (agricultural and non-agricultural livelihoods, cooperation in production, employment of casual labour, constraints, access to land, communal resources, livelihood and poverty trends)
- Food security (risks to household food security, factors in vulnerability, changes/trends in food security)
- Coping strategies (common coping strategies for different socio-economic and livelihood groups, social capital in the community as related food security,access to and use of credit).

4.5 Field work resources and logistics

The household interview field work for the baseline survey started in late September 2011, and was completed by the beginning of November 2011, taking 42 days to complete.[14]

Fourteen teams comprising 51 interviewers (22 of whom were male and 29 female) were employed for the household survey. All interviewers were carefully trained in administering the questionnaire and were involved in the pre-test and associated debrief. Fourteen of the 51 were trained as supervisors; one for each team.

Questionnaires were first drafted in English and then translated into Myanmar, Kachin, and two Shan languages before careful testing. Changes were made to all questionnaires following testing; mainly to clarify wording.

Focus group discussion instructions and checklists for each sub-group were also developed in English and then translated into Myanmar before field testing. Two separate teams each of three persons were employed for the 48 FGDs; four FGDs in each of the 12 villages. These six persons received separate training from those trained for the household survey. The two FGD teams worked separately and spent three or four days in each village. All 48 FGDs were completed by the middle of November, 2011. Transcripts of each FGD were originally recorded in Myanmar then translated into English. Translations were completed in early January 2012.

4.6 Data analysis and reporting

All questionnaires were checked by supervisors in the field prior to leaving each village to ensure they were completed fully and correctly. Questionnaire data was then double entered into *CSPro* and data

[14] Household surveys were completed just before the main monsoon harvest.

entry errors identified and corrected systematically until no transcription/entry errors remained. Analysis was then undertaken using *SPSS*. The first round of tabulations provided simple frequency tables. The LIFT FMO then provided guidance on more complex analysis to determine results of food security indices, two way and three way queries and tables among others. The FMO continued the analysis using SPSS as new requirements for analysis emerged.

The large dataset offers opportunities for considerable further analysis than presented below. However, it is upon completion of subsequent evaluations (particularly at the end of the Delta 2, Countrywide and Rakhine/Giri sub-programmes) that the analysis will be most informative, particularly in the assessment of LIFT outcomes and effectiveness.

4.7 Limitations of the research

It is important to emphasise some of the main limitations to this study.

Identification of LIFT villages
The sampling strategy was based on a sampling frame of LIFT villages and their household populations provided by all LIFT partners that were contracted at the time under the Delta 2 and Countrywide sub-programmes. Over the course of implementation of partner projects it is expected that some of their initially selected villages will change. These changes had already begun at time of writing. The implications are that by the time of subsequent evaluations there will be a larger population representing control villages and a smaller population representing LIFT villages. Given the oversampling inherent in the sampling design this should not present a problem.[15]

Selection of control villages
Selection of control villages is always a difficult undertaking. Ideally control villages should be similar to 'treatment' villages in all characteristics other than the LIFT intervention. Given the lack of socio-economic information on the villages in any one township there was little published secondary information with which to make such a comparison. It was therefore left to LIFT partners to choose comparable villages to those they had chosen for their LIFT projects based on their knowledge of the townships in which they planned to work.Guidance was provided to help them in this selection. Furthermore, while initial selection of the control may have been appropriate, future development assistance may impact on control villages selected for interventions by other programs. This will need to be investigated in subsequent evaluations.

Respondent recall, perceptions and bias
It is important to acknowledge that the data collected are influenced, as in all question-based surveys, on respondent knowledge of their own household (livelihoods and food security), on the accuracy of their recall, and on various biases that influence responses, among other factors. Interviewer skills and approach are also important, particularly the extent of probing in questions demanding multiple responses (e.g., sources of household income). Questions for which responses are least likely to be accurate include those on:

- Average household monthly income from all sources
- Crop areas
- Crop yields
- Comparisons of household income, food security, casual labour opportunities and levels of assets and wealth with previous years.

The first three of the above are generally difficult to collect accurately and last of these may be influenced by respondents' hopes for future project support.

[15] If more than 30 villages initially selected as LIFT villages are substituted by partners there may be a case to include a sample of the new villages in subsequent evaluations.

5. Findings from the baseline survey

5.1 Survey coverage

The household survey included households from nine states/regions and from three agro-ecological zones. It covered LIFT villages from the Delta 2 and Countrywide sub-programmes as well as control villages and villages from four Giri-affected townships in Rakhine State. The composition of households under each of these categories is provided in Table 1 below.

Table 1:Household survey coverage in each State/Region by agro-ecological zone

	Hilly		Dry		Delta/Coastal		LIFT villages[16]		Control		Giri		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Kachin	128	16.0%					128	5.3%	48	6.0%			176	4.4%
Chin	176	22.0%					176	7.3%	64	8.0%			240	6.0%
Sagaing			144	18.0%			144	6.0%	64	8.0%			208	5.2%
Magway			384	48.0%			384	16.0%	144	18.0%			528	13.2%
Mandalay			272	34.0%			272	11.3%	64	8.0%			336	8.4%
Rakhine					144	18.0%	144	6.0%	32	4.0%	800	100.0%	976	24.4%
Shan (South)	368	46.0%					368	15.3%	128	16.0%			496	12.4%
Shan (North)	128	16.0%					128	5.3%	32	4.0%			160	4.0%
Ayeyarwaddy					656	82.0%	656	27.3%	224	28.0%			880	22.0%
Total	800	100%	800	100%	800	100%	2400	100%	800	100%	800	100%	4000	100%

5.2 Respondent information

Table 2:Respondent position in the household

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	No.	%	No.	%	No.	%	No.	No.	%	No.	%	No.	%	No.
Head of HH	527	65.9%	458	57.2%	481	60.1%	1466	61.1%	489	61.1%	452	56.5%	2407	60.2%
Spouse	219	27.4%	245	30.6%	257	32.1%	721	30.0%	237	29.6%	324	40.5%	1282	32.0%
De facto head of household	54	6.8%	97	12.1%	62	7.8%	213	8.9%	74	9.2%	24	3.0%	311	7.8%
Total	800	100%	800	100%	800	100%	2400	100%	800	100%	800	100%	4000	100%

Note: The head of household was the person recorded as head of household by the village authorities on the village list. Sometimes this person was deceased. In these cases, enumerators recorded the head of household as *de facto.*

Table 3: Sex of respondent

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	No.	%	No.	%	No.	%	No.	No.	%	No.	%	No.	%	No.
Male	456	57.0%	360	45.0%	432	54.0%	1248	52.0%	417	52.1%	374	46.8%	2039	51.0%
Female	344	43.0%	440	55.0%	368	46.0%	1152	48.0%	383	47.9%	426	53.2%	1961	49.0%
Total	800	100%	800	100%	800	100%	2400	100%	800	100%	800	100%	4000	100%

Respondents were almost equally divided between males and females. Note that the above information (Tables 2 and 3) refers to the primary respondent to the household interview. In many cases both the head of household and spouse were involved. The enumerators were instructed to seek the most appropriate respondent for the different sections of the interview. For example, questions on household dietary diversity and months of adequate household food provisioning should ideally be answered by the person in the household who prepares the food or makes the decisions on food preparation. This may not be the same household member who is most knowledgeable about crop production.

[16] The LIFT villages column provides the overall results for the three preceding columns (which disaggregate the LIFT villages by agro-ecological zone).

5.3 Demographic information

5.3.1 Household size

Over the entire sample of 4,000 households the average household size was 4.84 members. There was some variability between regions with households in Hilly Zone having the largest average size of 5.27and the Delta/Coastal Zone with the smallest of 4.40 members (see Table 4).

Table 4: Average size of respondents' households

Hilly	Dry	Delta/Coastal	LIFT villages	Control villages	Giri	Total sample
5.27	4.90	4.40	4.86	4.82	4.84	4.84

5.3.2. Dependency ratios

Dependency ratios were calculated using two definitions of dependent children: under 15 and under 18 (see Table 3.2).[17]

Dependency ratios were highest in the Hilly Zone and lowest in the Dry Zone (see Table 5). This correlates to some extent with household size: the largest households on average in the Hilly Zone are expected to have either more dependent children or more elderly members.

Table 5: Dependency ratios (under 15 and under 18)

Zone/sample	Dependency Ratio Under 15 (%)	Dependency Ratio Under 18 (%)
Hilly	78.4%	98.7%
Dry	60.2%	75.0%
Delta & Coastal	67.7%	82.4%
Lift Villages	68.8%	85.4%
Control Villages	66.0%	85.3%
Giri	76.7%	96.5%
Total sample	69.8%	87.6%

5.3.3 School attendance

Assessing school attendance is important in livelihood and food security programmes. A common coping strategy for poor and vulnerable households is to withdraw children from school either to save costs associated with schooling or to harness children's labour to earn income or generally support the household (e.g., caring for younger siblings, collecting wild food, taking over more household responsibilities while parents intensify their efforts to earn money etc). One important outcome for successful programmes is higher school enrolment and attendance of school-aged children. This in turn increases the future livelihood opportunities of these children, in many occasions allowing them to find alternative vocations in either rural or urban locations.

Table 6: Percent of school aged children (aged 5 to 17 inclusive) attending school

	Male	Female	All children
Hilly	71.1%	78.9%	75.0%
Dry	71.8%	65.7%	68.7%
Delta & Coastal	69.0%	70.1%	69.5%
LIFTvillages	70.6%	72.4%	71.5%
Control villages	69.7%	67.5%	68.7%
Giri	70.2%	66.4%	68.3%
Total	70.4%	70.1%	70.3%

[17]Dependency ratio (under 15) = (number of children aged 0-14 + number 65 and over + number disabled aged 15-64)/number persons 15–64. This is expressed as a percentage. The dependency ratio under 18 is calculated the same way.

A very similar percent of school aged boys and girls were reported to be attending school. However in the Hilly Zone a significantly higher proportion of girls than boys attended school (boys 71.1% and girls 78.9%); while in the Dry Zone the opposite tendency was recorded (boys 71.8% and girls 65.7%).

Table 8, below, shows that that there was a tendency for households owning larger areas of land to be more likely to send their children to school. Over the entire sample 66.8% of school-aged children from landless households attended school but this percentage increased to 83.9% for children from households owning over 20 acres of land.

Table7: Number of school-aged children (5-17 years old inclusive) for all householdsin the different categories of land ownership

	Hilly	Dry	Delta/Coastal	LIFT villages	Control	Giri	Total
no land	316	438	673	1427	431	840	2698
<1 acre	36	18	3	57	28	13	98
1-2 acres	469	94	13	576	238	102	916
2+ to 5	291	199	42	532	210	145	887
5+ to 10	125	124	83	332	72	81	485
10+ to 15	24	27	40	91	26	15	132
15+ to 20	7	19	33	59	19	8	86
>20 acres	9	18	45	72	13	8	93
Total	1277	937	932	3146	1037	1212	5395

Table 8: School attendance by different levels of household land ownership

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	No.	%	No.	%	No.	%	No.	No.	%	No.	%	No.	%	No.
no land	242	76.6%	291	66.4%	440	65.4%	973	68.2%	281	65.2%	547	65.1%	1801	66.8%
<1 acre	23	63.9%	10	55.6%	2	66.7%	35	61.4%	15	53.6%	7	53.8%	57	58.2%
1-2 acres	362	77.2%	61	64.9%	11	84.6%	434	75.3%	169	71.0%	75	73.5%	678	74.0%
2+ to 5	213	73.2%	139	69.8%	34	81.0%	386	72.6%	143	68.1%	112	77.2%	641	72.3%
5+ to 10	92	73.6%	90	72.6%	68	81.9%	250	75.3%	59	81.9%	60	74.1%	369	76.1%
10+ to 15	14	58.3%	22	81.5%	29	72.5%	65	71.4%	19	73.1%	13	86.7%	97	73.5%
15+ to 20	7	100.0%	14	73.7%	26	78.8%	47	79.7%	16	84.2%	6	75.0%	69	80.2%
>20 acres	5	55.6%	17	94.4%	38	84.4%	60	83.3%	10	76.9%	8	100.0%	78	83.9%
Total	958	75.0%	644	68.7%	648	69.5%	2250	71.5%	712	68.7%	828	68.3%	3790	70.3%

A similar trend can be observed for children from households reporting different levels of average monthly income (see Table 10, below).

Table 9: Number of school-aged children (5-17 years old inclusive) for all households in the different levels of average monthly income

	Hilly	Dry	Delta/Coastal	LIFT villages	Control	Giri	Total
Less than Ks 25,000	150	77	70	297	104	201	602
> Ks 25,000 - Ks 50,000	520	272	379	1,171	403	445	2,019
> Ks 50,000 - Ks 75,000	276	251	218	745	274	270	1,289
> Ks 75,000 - Ks 100,000	135	191	129	455	156	207	818
> Ks 100,000 - Ks 150,000	88	80	67	235	58	76	369
> Ks 150,000 - Ks 200,000	48	26	19	93	15	7	115
> Ks 200,000 - Ks 250,000	19	13	17	49	10	3	62
> Ks 250,000 - Ks 300,000	17	4	9	30	6	0	36
Over Ks 300,000	15	23	22	60	8	3	71
Don't know/no response	9	0	2	11	3	0	14
Total	1,277	937	932	3,146	1,037	1,212	5,395

Table 10: School attendance by different levels of reported household average monthly income

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	No.	%	No.	%	No.	%	No.		No.	%	No.	%	No.	%
Less than Ks 25,000	117	78.0%	44	57.1%	42	60.0%	203	68.4%	73	70.2%	105	52.2%	381	63.3%
Ks 25,000 - Ks 50,000	388	74.6%	182	66.9%	247	65.2%	817	69.8%	261	64.8%	291	65.4%	1369	67.8%
Ks 50,000 - Ks 75,000	213	77.2%	179	71.3%	142	65.1%	534	71.7%	192	70.1%	200	74.1%	926	71.8%

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	No.	%	No.	%	No.	%	No.		No.	%	No.	%	No.	%
Ks 75,000 - Ks 100,000	102	75.6%	124	64.9%	99	76.7%	325	71.4%	115	73.7%	155	74.9%	595	72.7%
Ks 100,000 - Ks 150,000	63	71.6%	59	73.8%	57	85.1%	179	76.2%	43	74.1%	64	84.2%	286	77.5%
Ks 150,000 - Ks 200,000	31	64.6%	22	84.6%	16	84.2%	69	74.2%	11	73.3%	7	100%	87	75.7%
Ks 200,000 - Ks 250,000	13	68.4%	11	84.6%	16	94.1%	40	81.6%	8	80.0%	3	100%	51	82.3%
Ks 250,000 - Ks 300,000	15	88.2%	4	100%	9	100%	28	93.3%	4	66.7%	0	NA	32	88.9%
Over Ks 300,000	9	60.0%	19	82.6%	19	86.4%	47	78.3%	3	37.5%	3	100%	53	74.6%
Don't know/no response	7	77.8%	0	NA	1	50.0%	8	72.7%	2	66.7%	0	NA	10	71.4%
Total	958	75.0%	644	68.7%	648	69.5%	2250	71.5%	712	68.7%	828	68.3%	3790	70.3%

As may be expected, poorer households tended to be less likely to send their children to school. This tendency was most pronounced for households in the Giri-affected areas where only 52 % of school-aged children in the poorest households (less than Ks 25,000 per month) attended school, while 100% of school-aged children from households reporting more than Ks 150,000 per month attended school.

5.3.4 Household composition

Table 11: Sexof household members

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	No.	%	No.	%	No.	%	No.		No.	%	No.	%	No.	%
Male	2,080	49.4%	1,830	46.7%	1,761	50.0%	5,671	48.7%	1,873	48.6%	1,888	48.8%	9,432	48.7%
Female	2,134	50.6%	2,092	53.3%	1,759	50.0%	5,985	51.3%	1,979	51.4%	1,982	51.2%	9,946	51.3%
Total	4,214	100%	3,922	100%	3,520	100%	11,656	100%	3,852	100%	3,870	100%	19,378	100%

Inmost areas, household members were nearly equally divided between males and females. The exception was the Dry Zone villages where there was a higher number of females (see Table 11).

Over 30% of the household population of the entire sample was under 15 years of age, and only 5% aged 65 and above (Table 12). Approximately 9% of the total household population was under 5, and 35.7% of households had members under 5.[18]

Table 12: Age of household members

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	No.	%	No.	%	No.	%	No.		No.	%	No.	%	No.	%
Under 5	455	10.8%	248	6.3%	363	10.3%	1066	9.1%	316	8.2%	341	8.8%	1723	8.9%
5-14	1001	23.8%	709	18.1%	734	20.9%	2444	21.0%	775	20.1%	965	24.9%	4184	21.6%
15-24	844	20.0%	803	20.5%	710	20.2%	2357	20.2%	813	21.1%	770	19.9%	3940	20.3%
25-34	636	15.1%	620	15.8%	599	17.0%	1855	15.9%	619	16.1%	570	14.7%	3044	15.7%
35-44	473	11.2%	515	13.1%	409	11.6%	1397	12.0%	478	12.4%	441	11.4%	2316	12.0%
45-54	406	9.6%	416	10.6%	334	9.5%	1156	9.9%	386	10.0%	332	8.6%	1874	9.7%
55-64	242	5.7%	311	7.9%	232	6.6%	785	6.7%	245	6.4%	262	6.8%	1292	6.7%
65 and +	157	3.7%	300	7.6%	139	3.9%	596	5.1%	220	5.7%	189	4.9%	1005	5.2%
Total	4214	100%	3922	100%	3520	100%	11656	100%	3852	100%	3870	100%	19378	100%

Just over one percent of household members were reported by respondents to have a physical or mental impairmentlimiting their ability to work in a regular job or study at a regular school.[19] All zones recorded less than 2% of household members as disabled (see Table 13).

Table 13:Percent of household members with physical or mental disabilities that preventedthem from working or studying

Hilly	Dry	Delta/Coastal	LIFT villages	Control villages	Giri-affected	All sample
1.1%	1.4%	1.8%	1.4%	1.0%	0.8%	1.2%

[18] Percent of households with children aged under 5 is useful information when designing nutrition surveys.

[19] The First Myanmar Basic Disability Survey 2008-2009 defines a disabled person as: "an individual who is limited in function and/or ability to conduct activities in daily living to participate in society due to physical, seeing, hearing and intellectual or learning impairment" (Myanmar Society).

5.4 Sources of household income

Sources of income reported for respondent households clearly indicated that casual labour was the most important source over the entire sample (see Table 14). However the most common source varied by zone with casual labour being by far the most common source of household income in the Delta/Coastal Zone and Giri-affected areas but with agriculture being the most common in Hilly and Dry Zones.

Table 14:Sources of household income during the previous 12 months (multiple responses allowed)

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	No.	%	No.	%	No.	%	No.		No.	%	No.	%	No.	%
Casual labour (any type)	**317**	**39.6%**	**440**	**55.0%**	**485**	**60.6%**	**1242**	**51.8%**	**409**	**51.1%**	**502**	**62.8%**	**2153**	**53.8%**
Casual labour – agriculture	212	26.5%	400	50.0%	352	44.0%	964	40.2%	323	40.4%	278	34.8%	1565	39.1%
Casual labour – fishery	8	1.0%	8	1.0%	330	41.3%	346	14.4%	118	14.8%	215	26.9%	679	17.0%
Casual labour – forestry or forest products	44	5.5%	26	3.3%	42	5.3%	112	4.7%	31	3.9%	161	20.1%	304	7.6%
Casual labour – Other[20]	108	13.5%	100	12.5%	72	9.0%	280	11.7%	84	10.5%	71	8.9%	435	10.9%
Agriculture (any type - crops + livestock)	**568**	**71.0%**	**501**	**62.6%**	**321**	**40.1%**	**1390**	**57.9%**	**484**	**60.5%**	**133**	**16.6%**	**2007**	**50.2%**
Crop production (any type)	**519**	**64.9%**	**463**	**57.9%**	**267**	**33.4%**	**1249**	**52.0%**	**446**	**55.8%**	**126**	**15.8%**	**1821**	**45.5%**
Sale of beans, pulses and peanuts	177	22.1%	346	43.3%	8	1.0%	531	22.1%	205	25.6%	5	.6%	741	18.5%
Sale of other cereals (maize, wheat, barley, oats, sorghum etc)	231	28.9%	205	25.6%	1	.1%	437	18.2%	179	22.4%	2	.3%	618	15.5%
Sale of paddy/rice	74	9.3%	79	9.9%	212	26.5%	365	15.2%	113	14.1%	54	6.8%	532	13.3%
Sale of vegetables (fresh and dried)	132	16.5%	75	9.4%	48	6.0%	255	10.6%	73	9.1%	61	7.6%	389	9.7%
Sale of other crops/agricultural products (rubber, flowers, trees, etc…)	64	8.0%	44	5.5%	20	2.5%	128	5.3%	64	8.0%	17	2.1%	209	5.2%
Sale of tubers and root crops	109	13.6%	20	2.5%			129	5.4%	39	4.9%	3	.4%	171	4.3%
Sale of beverage crops (tea or coffee)	57	7.1%					57	2.4%	27	3.4%			84	2.1%
Sale of toddy products (including sap, alcohol, jaggery)	1	.1%	58	7.3%	2	.3%	61	2.5%	23	2.9%			84	2.1%
Sale of fruits (fresh and dried)	16	2.0%	3	.4%	10	1.3%	29	1.2%	5	.6%	12	1.5%	46	1.2%
Livestock production														
Sale of livestock or livestock products (whole animals, meat, milk, eggs etc)	**62**	**7.8%**	**82**	**10.3%**	**80**	**10.0%**	**224**	**9.3%**	**76**	**9.5%**	**8**	**1.0%**	**308**	**7.7%**
Fish production (all types)	**10**	**1.3%**	**6**	**0.8%**	**159**	**19.9%**	**175**	**7.3%**	**61**	**7.6%**	**230**	**28.8%**	**466**	**11.7%**
Sale of fresh wild catch of fish, prawns, crabs, shellfish	9	1.1%	5	.6%	132	16.5%	146	6.1%	48	6.0%	201	25.1%	395	9.9%
Sale of processed fish, prawns, crabs, etc	2	.3%	1	.1%	30	3.8%	33	1.4%	16	2.0%	15	1.9%	64	1.6%
Sale of fresh farmed fish, prawns, crabs, shellfish					4	.5%	4	.2%			17	2.1%	21	.5%
Forestry products														

[20] These include mason assistant (99 cases); carrying stones/bricks, digging and paving (69 cases); general workers horticultural farms (43cases); carrying goods (29 cases); gold mine worker (28 cases); and tending animals (26 cases).

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	No.	%	No.	%	No.	%	No.		No.	%	No.	%	No.	%
Sale of firewood, timber, bamboo, charcoal, rattan, etc	**20**	**2.5%**	**8**	**1.0%**	**13**	**1.6%**	**41**	**1.7%**	**7**	**.9%**	**40**	**5.0%**	**88**	**2.2%**
Sale of other collected products														
Sale of other wild food products (fruits and animals)	**11**	**1.4%**					**11**	**.5%**	**4**	**.5%**	**2**	**.3%**	**17**	**.4%**
Small business (non-agric – all types)	**114**	**14.3%**	**197**	**24.6%**	**152**	**19.0%**	**463**	**19.3%**	**145**	**18.1%**	**168**	**21.0%**	**776**	**19.4%**
Small business - trading, buying and selling	42	5.3%	84	10.5%	76	9.5%	202	8.4%	56	7.0%	70	8.8%	328	8.2%
Small business - small scale production (not agricultural)	52	6.5%	77	9.6%	42	5.3%	171	7.1%	43	5.4%	50	6.3%	264	6.6%
Small business - services (incl trans-port services, ,etc)	26	3.3%	55	6.9%	47	5.9%	128	5.3%	58	7.3%	61	7.6%	247	6.2%
Interest from lending	1	.1%	6	.8%	2	.3%	9	.4%	1	.1%	2	.3%	12	.3%
Regular full-time employment	30	3.8%	65	8.1%	40	5.0%	135	5.6%	40	5.0%	22	2.8%	197	4.9%
Regular part-time employment	14	1.8%	18	2.3%	18	2.3%	50	2.1%	13	1.6%	6	.8%	69	1.7%
Remittances	38	4.8%	84	10.5%	27	3.4%	149	6.2%	68	8.5%	37	4.6%	254	6.4%
Pensions	3	.4%	11	1.4%	3	.4%	17	.7%	3	.4%	2	.3%	22	.6%
Government/NGO assistance (cash vouchers)	2	.3%	5	.6%	9	1.1%	16	.7%	1	.1%			17	.4%
Re-sale of food aid					1	.1%	1	.0%	2	.3%	1	.1%	4	.1%
Cash-for-work	1	.1%					1	.0%	1	.1%	1	.1%	3	.1%
Gifts of money	14	1.8%	13	1.6%	17	2.1%	44	1.8%	21	2.6%	9	1.1%	74	1.9%
Various other sources[21]	28	3.5%	19	2.4%	10	1.3%	57	2.4%	22	2.8%	6	.8%	85	2.1%
Did not have income			1	.1%	2	.3%	3	.1%					3	.1%

Table 15:The most important source of household income during the previous 12 months

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	No.	%	No.	%	No.	%	No.		No.	%	No.	%	No.	%
Casual labour – any type	**153**	**19.1%**	**208**	**26.0%**	**349**	**43.6%**	**710**	**29.6%**	**208**	**26.0%**	**323**	**40.4%**	**1241**	**31.0%**
Casual labour – agriculture	78	9.8%	155	19.4%	186	23.3%	419	17.5%	118	14.8%	134	16.8%	671	16.8%
Casual labour – fishery	2	0.3%	3	0.4%	152	19.0%	157	6.5%	57	7.1%	99	12.4%	313	7.8%
Casual labour - forestry or forest products	15	1.9%	7	0.9%	5	0.6%	27	1.1%	8	1.0%	68	8.5%	103	2.6%
Casual labour – Other	58	7.3%	43	5.4%	6	0.8%	107	4.5%	25	3.1%	22	2.8%	154	3.9%
Agriculture (any type – crops and livestock)	**490**	**61.3%**	**402**	**50.3%**	**219**	**27.4%**	**1111**	**46.3%**	**393**	**49.1%**	**88**	**11.0%**	**1592**	**39.8%**
Crop production (any type)	**451**	**56.4%**	**378**	**47.3%**	**205**	**25.6%**	**1034**	**43.1%**	**370**	**46.3%**	**87**	**10.9%**	**1491**	**37.3%**
Sale of beans, pulses & peanuts	61	7.6%	194	24.3%		0.0%	255	10.6%	88	11.0%	2	0.3%	345	8.6%
Sale of paddy/rice	36	4.5%	25	3.1%	185	23.1%	246	10.3%	71	8.9%	47	5.9%	364	9.1%
Sale of other cereals (maize, wheat, barley, oats, sorghum etc)	140	17.5%	80	10.0%		0.0%	220	9.2%	99	12.4%	2	0.3%	321	8.0%

[21] These include lease of land (34 cases), panning for gold (22 cases), traditional healer (10 cases) and extracting mustard oil (10 cases).

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	No.	%	No.	%	No.	%	No.		No.	%	No.	%	No.	%
Sale of vegetables (fresh and dried)	69	8.6%	33	4.1%	14	1.8%	116	4.8%	30	3.8%	24	3.0%	170	4.3%
Sale of tubers and root crops	62	7.8%	7	0.9%		0.0%	69	2.9%	22	2.8%	1	0.1%	92	2.3%
Sale of other crops/agricultural products (rubber, reed broom, etc.)	42	5.3%	14	1.8%	3	0.4%	59	2.5%	25	3.1%	8	1.0%	92	2.3%
Sale of beverage crops (tea/coffee)	35	4.4%		0.0%		0.0%	35	1.5%	23	2.9%		0.0%	58	1.5%
Sale of toddy products (incl sap, alcohol, jaggery)		0.0%	25	3.1%		0.0%	25	1.0%	12	1.5%		0.0%	37	0.9%
Sale of fruits (fresh and dried)	6	0.8%		0.0%	3	0.4%	9	0.4%		0.0%	3	0.4%	12	0.3%
Livestock production	**39**	**4.9%**	**24**	**3.0%**	**14**	**1.8%**	**77**	**3.2%**	**23**	**2.9%**	**1**	**0.1%**	**101**	**2.5%**
Sale of livestock or livestock products (animals, meat, milk)	39	4.9%	24	3.0%	14	1.8%	77	3.2%	23	2.9%	1	0.1%	101	2.5%
Fish production (all types)	**7**	**0.9%**	**3**	**0.4%**	**93**	**11.6%**	**103**	**4.3%**	**40**	**5.0%**	**196**	**24.5%**	**339**	**8.5%**
Sale of processed fish, prawns, crabs, etc.	1	0.1%	1	0.1%	15	1.9%	17	0.7%	9	1.1%	10	1.3%	36	0.9%
Sale of fresh wild catch of fish, prawns, crabs, etc	6	0.8%	2	0.3%	76	9.5%	84	3.5%	31	3.9%	172	21.5%	287	7.2%
Sale of fresh farmed fish, prawns, etc		0.0%		0.0%	2	0.3%	2	0.1%		0.0%	14	1.8%	16	0.4%
Forestry products	**10**	**1.3%**	**3**	**0.4%**	**6**	**0.8%**	**19**	**0.8%**	**2**	**0.3%**	**23**	**2.9%**	**44**	**1.1%**
Sale of firewood, timber, bamboo, charcoal, rattan, etc	10	1.3%	3	0.4%	6	0.8%	19	0.8%	2	0.3%	23	2.9%	44	1.1%
Sale of other collected products	**4**	**0.5%**		**0.0%**		**0.0%**	**4**	**0.2%**	**1**	**0.1%**	**1**	**0.1%**	**6**	**0.2%**
Sale of other wild food products (fruits/animals)	4	0.5%		0.0%		0.0%	4	0.2%	1	0.1%	1	0.1%	6	0.2%
Small business (non-agric - all types)	**75**	**9.4%**	**95**	**11.9%**	**78**	**9.8%**	**248**	**10.3%**	**89**	**11.1%**	**116**	**14.5%**	**453**	**11.3%**
Small business - small scale production (not ag)	35	4.4%	35	4.4%	22	2.8%	92	3.8%	24	3.0%	29	3.6%	145	3.6%
Small business - services (including transport services)	16	2.0%	22	2.8%	21	2.6%	59	2.5%	24	3.0%	36	4.5%	119	3.0%
Small business - trading, buying and selling	24	3.0%	38	4.8%	35	4.4%	97	4.0%	41	5.1%	51	6.4%	189	4.7%
Interest from lending		0.0%	2	0.3%		0.0%	2	0.1%		0.0%	1	0.1%	3	0.1%
Regular full-time employment	16	2.0%	31	3.9%	23	2.9%	70	2.9%	10	1.3%	17	2.1%	97	2.4%
Regular part-time employment	3	0.4%	7	0.9%	7	0.9%	17	0.7%	4	0.5%	3	0.4%	24	0.6%
Remittances	24	3.0%	37	4.6%	11	1.4%	72	3.0%	35	4.4%	20	2.5%	127	3.2%
Pensions		0.0%	2	0.3%		0.0%	2	0.1%		0.0%		0.0%	2	0.1%
Government/NGO assistance (cash vouchers)	1	0.1%		0.0%	1	0.1%	2	0.1%		0.0%		0.0%	2	0.1%
Re-sale of food aid		0.0%		0.0%		0.0%		0.0%		0.0%	1	0.1%	1	0.0%
Cash-for-work		0.0%		0.0%		0.0%		0.0%		0.0%	1	0.1%	1	0.0%
Gifts of money	6	0.8%	5	0.6%	6	0.8%	17	0.7%	5	0.6%	7	0.9%	29	0.7%
Other sources	11	1.4%	4	0.5%	5	0.6%	20	0.8%	13	1.6%	3	0.4%	36	0.9%
Did not have income		0.0%	1	0.1%	2	0.3%	3	0.1%		0.0%		0.0%	3	0.1%

A similar trend is evident in what respondents reported as the *most important* source of household income in the preceding 12 months (Table 15). Casual labour was the most important source of income in the Delta/Coastal Zone and Giri-affected areas for over 40% of households. Agriculture, particularly crop production, was the most important income source for households in the Hilly and Dry Zones, for over 60% and 50% of households respectively. In Giri-affected areas, fish production ranked second as the most important source of income after casual labour (nearly one quarter of households there reported it as the most important income source). In Delta/Coastal Zone fish production was third most common. In all other areas fish production was rarely reported as the most important source of income. Small business (non-agricultural) was the most important source of income for roughly 10% of households; highest for Giri-affected areas (14.5%). All other sources of income were rarely reported as the most important income source for households.

Landless households, as would be expected, were most reliant on casual labour. Overall, 50% of landless households reported some type of casual labour as their most important source of income in the preceding 12 months. Sale of fish products was the next most commonly reported. In Giri-affected areas, sale of fish products combined with casual labour for fishery activities was the most important source of household income for the landless (see Table 16). This reflects both the importance of the fishery sector in the Giri-affected areas and also the reduced work opportunities as farm labourers following the cyclone.

Table 16: The most important source of household income during the previous 12 months – landless households only(top 12 most frequently reported)

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Casual labour – agriculture	43	20.6%	127	37.2%	180	31.2%	350	31.1%	95	29.4%	117	21.4%	562	28.2%
Casual labour – fishery	2	1.0%	2	0.6%	145	25.1%	149	13.2%	52	16.1%	73	13.4%	274	13.7%
Sale of fresh wild catch of fish, prawns, crabs, etc	5	2.4%	2	0.6%	68	11.8%	75	6.7%	27	8.4%	125	22.9%	227	11.4%
Small business - trading, buying and selling	16	7.7%	20	5.9%	29	5.0%	65	5.8%	28	8.7%	39	7.1%	132	6.6%
Casual labour - Other[22]	33	15.8%	33	9.7%	4	0.7%	70	6.2%	13	4.0%	15	2.7%	98	4.9%
Small business - small scale production (not ag)	17	8.1%	24	7.0%	21	3.6%	62	5.5%	14	4.3%	20	3.7%	96	4.8%
Small business - services (transport, repair, mechanical)	10	4.8%	15	4.4%	16	2.8%	41	3.6%	15	4.6%	24	4.4%	80	4.0%
Regular full-time employment	6	2.9%	25	7.3%	22	3.8%	53	4.7%	6	1.9%	14	2.6%	73	3.7%
Remittances	6	2.9%	21	6.2%	10	1.7%	37	3.3%	11	3.4%	15	2.7%	63	3.2%
Casual labour - forestry or forest products	6	2.9%	3	0.9%	4	0.7%	13	1.2%	3	0.9%	47	8.6%	63	3.2%
Sale of livestock or livestock products	9	4.3%	15	4.4%	13	2.3%	37	3.3%	8	2.5%	1	0.2%	46	2.3%
Sale of vegetables (fresh and dried)	6	2.9%	8	2.3%	10	1.7%	24	2.1%	4	1.2%	12	2.2%	40	2.0%

A similar analysis was conducted below (Table 17) to investigate the most important source of income for the poorest households in the sample: those reporting the lowest average household monthly income (less than Ks 25,000 per month; or less than approximately USD $1 per day). By far the largest number of the poorest households relied on agricultural casual labour as their most important income source. After that, the poorest households relied on a wide variety of other primary sources of

[22] As mentioned earlier, this includes mason assistant; carrying stones/bricks, digging and paving; carrying goods; gold mining worker; and tending animals.

income. Casual labour of all types (agriculture, fishery, forestry, and other) was most important for 47.5% of the poorest households overall, but in the Delta/Coastal Zone casual labour was the most important source for almost 70% of the poorest households. This highlights the vulnerability of the poor and landless to factors that adversely influence demand for labour, for example, natural disasters and economic shocks that affect employer households. Similarly the rapid introduction of labour-substituting technologies could have serious impacts on the poor.

Interestingly, the poorest also included some farming households particularly in the Dry Zone and to a lesser extent in the Hilly Zone that sold legume crops as their primary source of income (see Table 17).

Table 17: Most important source of household income for previous 12 months – poorest households (average monthly income less than Ks 25,000)

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total sample	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Casual labour – agriculture	23	20.5%	43	43.9%	33	45.2%	99	35.0%	24	22.9%	58	38.7%	181	33.6%
Sale of beans, pulses and peanuts	11	9.8%	20	20.4%	0	0.0%	31	11.0%	13	12.4%	0	0.0%	44	8.2%
Casual labour – fishery	0	0.0%	0	0.0%	17	23.3%	17	6.0%	8	7.6%	10	6.7%	35	6.5%
Remittances	5	4.5%	5	5.1%	5	6.8%	15	5.3%	4	3.8%	7	4.7%	26	4.8%
Sale of other cereals	14	12.5%	4	4.1%	0	0.0%	18	6.4%	7	6.7%	0	0.0%	25	4.6%
Small business - (not agricultural)	4	3.6%	6	6.1%	2	2.7%	12	4.2%	2	1.9%	7	4.7%	21	3.9%
Casual labour - forestry or forest products	4	3.6%	1	1.0%	1	1.4%	6	2.1%	1	1.0%	13	8.7%	20	3.7%
Casual labour – Other	8	7.1%	0	0.0%	0	0.0%	8	2.8%	6	5.7%	6	4.0%	20	3.7%
Sale of fresh wild catch of fish, prawns, etc	1	0.9%	0	0.0%	2	2.7%	3	1.1%	3	2.9%	14	9.3%	20	3.7%
Sale of vegetables (fresh & dried)	4	3.6%	4	4.1%	2	2.7%	10	3.5%	3	2.9%	7	4.7%	20	3.7%
Sale of livestock or livestock products	7	6.2%	3	3.1%	0	0.0%	10	3.5%	7	6.7%	0	0.0%	17	3.2%
Sale of paddy	4	3.6%	0	0.0%	3	4.1%	7	2.5%	5	4.8%	5	3.3%	17	3.2%
Gifts of money	2	1.8%	4	4.1%	3	4.1%	9	3.2%	3	2.9%	4	2.7%	16	3.0%
Small business - trading, buying, selling	2	1.8%	1	1.0%	2	2.7%	5	1.8%	3	2.9%	4	2.7%	12	2.2%
Total HHs < Ks 25,000/mth	112	100%	98	100%	73	100%	283	100%	105	100%	150	100%	538	100%

Note: Only the top 14 sources are presented in the above table

5.4.1 Estimates of household monthly income

The baseline survey did not attempt a detailed income and expenditure survey as this can take more than 45 minutes of detailed questioning and the results are often of uncertain accuracy.[23] Rather, respondents were simply asked what was the average total income for their household from all sources in a normal month. This was a closed question using set ranges of monthly income. While this should not be considered accurate it is expected to provide some relative assessment of income that

[23] In comparison, the total duration of the baseline questionnaire was normally less than 40 minutes.

can be compared with other measures of household wealth (e.g., asset ownership [land, livestock, household durable assets] and dwelling construction materials).

The most common household monthly income range reported by respondents was Ks 25,000 to Ks 50,000 in all zones (approximately USD $30 to $60 per month).[24] Giri-affected areas had the highest number and proportion of households in the lowest monthly income range (less than Ks 25,000) with nearly one fifth of households in that range (see Table 18).

Table 18:Average total household income from all sources in a normal month

	Hilly		Dry		Delta/Coastal		LIFT Villages		Control		Giri		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Less than Ks 25,000	112	14.0%	98	12.2%	73	9.1%	283	11.8%	105	13.1%	150	18.8%	538	13.4%
Ks 25,000 - Ks 50,000	308	38.5%	240	30.0%	339	42.4%	887	37.0%	297	37.1%	285	35.6%	1469	36.7%
> Ks 50,000 - Ks 75,000	173	21.6%	190	23.8%	167	20.9%	530	22.1%	183	22.9%	177	22.1%	890	22.2%
> Ks 75,000 - Ks 100,000	92	11.5%	141	17.6%	88	11.0%	321	13.4%	119	14.9%	130	16.2%	570	14.2%
> Ks 100,000 - Ks 150,000	52	6.5%	57	7.1%	63	7.9%	172	7.2%	57	7.1%	45	5.6%	274	6.8%
> Ks 150,000 - Ks 200,000	28	3.5%	33	4.1%	25	3.1%	86	3.6%	12	1.5%	6	0.8%	104	2.6%
> Ks 200,000 - Ks 250,000	11	1.4%	10	1.2%	10	1.2%	31	1.3%	7	0.9%	3	0.4%	41	1.0%
> Ks 250,000 - Ks 300,000	10	1.2%	11	1.4%	9	1.1%	30	1.2%	5	0.6%	0	0.0%	35	0.9%
Over Ks 300,000	9	1.1%	16	2.0%	19	2.4%	44	1.8%	11	1.4%	3	0.4%	58	1.4%
Don't know/no response	5	0.6%	4	0.5%	7	0.9%	16	0.7%	4	0.5%	1	0.1%	21	0.5%
Total	800	100%	800	100%	800	100%	2400	100%	800	100%	800	100%	4000	100%

The relationship between income and land ownership can be investigated by comparing frequency of household average monthly income ranges with household land ownership ranges (see Table 19).

Table 19: Household reported average monthly income and land ownership

	No land		< 1 acre		1 - 2 acres		2 - 5 acres		5 - 10 acres		10-15 acres		15-20 acres		> 20 acres		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
< Ks 25,000	323	16.3	21	23.3	111	17.6	57	8.8	17	4.6	5	5.0	2	2.6	2	2.6	538	13.5
Ks 25,000 - Ks 50,000	807	40.7	32	35.6	264	42.0	237	36.6	97	26.1	22	21.8	4	5.1	6	7.9	1469	36.9
Ks 50,000 - Ks 75,000	463	23.3	21	23.3	130	20.7	142	21.9	90	24.2	20	19.8	11	14.1	13	17.1	890	22.4
Ks 75,000 - Ks 100,000	241	12.1	7	7.8	67	10.7	113	17.4	89	23.9	21	20.8	18	23.1	14	18.4	570	14.3
Ks 100,000 - Ks 150,000	98	4.9	5	5.6	38	6.0	52	8.0	47	12.6	14	13.9	12	15.4	8	10.5	274	6.9
Ks 150,000 - Ks 200,000	27	1.4	2	2.2	9	1.4	23	3.5	15	4.0	10	9.9	12	15.4	6	7.9	104	2.6
Ks 200,000 - Ks 250,000	9	0.5	1	1.1	2	0.3	9	1.4	8	2.2	1	1.0	5	6.4	6	7.9	41	1.0
Ks 250,000 - Ks 300,000	7	0.4	0	0.0	3	0.5	7	1.1	3	0.8	4	4.0	5	6.4	6	7.9	35	0.9
>Ks 300,000	10	0.5	1	1.1	5	0.8	8	1.2	6	1.6	4	4.0	9	11.5	15	19.7	58	1.5
Total	1985	100	90	100	629	100	648	100	372	100	101	100	78	100	76	100	3979	100

Note: 1 acre = 0.4047 hectares

[24] Using an exchange rate of USD $1 = Ks 800.

The table suggests that small farmer households with less than 2 acres of land are not noticeably wealthier than landless households. However, households with land areas greater than 2 acres report considerably higher average monthly incomes. For example, roughly 20% of households with no land, less than 1 acre, or 1 to 2 acres fall into the lowest income class. Only 8.8% of households owning more than 2 acres and up to 5 acres fall in this income class; an even smaller percent of households with more than 5 acres of land earn less than Ks 25,000 per month. At the other extreme, 20% of households owning more than 20 acres of land reported average monthly incomes over Ks 300,000; only 2.6% of these large land owning households reported monthly incomes less than Ks 25,000.

This relationship between land ownership, income and ownership of other assets is explored further in later sections.

Respondents were also asked to compare their household income over the past 12 months with the previous year to collect their perspectives on whether incomes were increasing, decreasing or staying much the same. In most zones including control villages, the large majority of respondents reported that household incomes were much the same as the previous year or had decreased. Overall, 44% of households reported decreasing incomes and 40% that incomes were much the same as the previous year. In most cases a sizeable 30 to 40% of households reported that their incomes had decreased. However, two-thirds of respondents from the Giri-affected townships reported decreasing income reflecting the serious impact of Cyclone Giri continuing into 2011.[25]In the Dry Zone, while a third of households reported a decrease in income, another 25% of households reported that income had increased in 2011. This probably reflects the improved growing season in 2011 compared with the serious drought in the Dry Zone in 2010.

Table 20:Household income in the past 12 months compared with a year earlier - respondent perspectives

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Increased	117	14.6%	203	25.4%	116	14.5%	436	18.2%	123	15.4%	49	6.1%	608	15.2%
Same as previous year	368	46.0%	334	41.8%	332	41.5%	1034	43.1%	360	45.0%	217	27.1%	1611	40.3%
Decreased	313	39.1%	261	32.6%	348	43.5%	922	38.4%	316	39.5%	533	66.6%	1771	44.3%
Don't know/no resp	2	0.2%	2	0.2%	4	0.5%	8	0.3%	1	0.1%	1	0.1%	10	0.2%
Total	800	100%	800	100%	800	100%	2400	100%	800	100%	800	100%	4000	100%

5.5 Casual employment

With the exception of the Hilly Zone, more than 50% of households in each zone and control villages had members who had worked for casual wages in the past 12 months (Table 21). In the Hilly Zone the percent was nearly 40%; a substantial proportion but still significantly less than other areas. In the Hilly Zone only 26.1% of the sample of 800 households had no land compared with the average of 49.9% with no land for the overall sample of 4,000 households. Delta/Coastal Zone had the highest percent of household members working for casual wages (60.6%) and also the highest proportion of landless households of all zones (72.1%); see Table 54.

This relationship between land holding and casual labour is clearly illustrated in Table 22 below.

Table 21:Number of households wheremembers worked casually for wages in the past 12 months

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	No.	%	No.	%	No.	%	No.	No.	%	No.	%	No.	%	No.
Yes	317	39.6	440	55.0	485	60.6	1242	51.8	409	51.1	502	62.8	2153	53.8
No	483	60.4	360	45.0	315	39.4	1158	48.2	391	48.9	298	37.2	1847	46.2
Total	800	100.0	800	100.0	800	100.0	2400	100.0	800	100.0	800	100.0	4000	100.0

[25] Cyclone Giri hit Rakhine State in October 2010.

Table 22: Percent of households where members have worked casually for wages in the past 12 months (as a percent of all households with that land holding size)

	Hilly	Dry	Delta/Coastal	LIFT villages	Control	Giri	Total
No land	60.8%	76.2%	76.9%	73.7%	74.3%	70.3%	72.9%
<1 acre	38.7%	80.0%	42.9%	53.4%	59.1%	70.0%	56.7%
1 - 2 acres	34.4%	52.9%	45.5%	39.4%	43.1%	60.3%	42.5%
2+ - 5 acres	32.4%	49.1%	29.3%	39.3%	33.8%	46.0%	39.1%
5+ - 10 acres	25.0%	21.2%	18.8%	21.6%	29.5%	40.0%	26.2%
10+ - 15 acres	20.0%	6.7%	19.4%	14.1%	36.8%	18.2%	18.8%
15+ - 20 acres	0.0%	9.1%	4.0%	5.8%	4.8%	20.0%	6.4%
> 20 acres	0.0%	0.0%	2.6%	1.8%	6.3%	0.0%	2.6%
Total	39.6%	55.0%	60.6%	51.8%	51.1%	62.8%	53.8%

Overall, 72.9% of households with no land had members who worked for casual wages in the past 12 months. The percentage progressively ranged down to 2.6% of households with more than 20 acres of land. This relationship is as one would expect – the more land owned the less need to work for others for casual wages and the more household labour required to work the household's own land.

Respondents were asked to estimate the number of days their household members were engaged in different types of casual work in the preceding 12 months. To aid in their recall, the year was broken into the different cropping seasons and different types of agricultural activity throughout each season. Notwithstanding, the reader should be cautioned concerning the accuracy of the findings given the problems with recall over such a long period.

As would be expected there is considerable variability in the type of casual labour activities by region, by season and by sex of worker. Overall, theaverage number of days of casual work done by male household members was more than for females.

Table 23: Average number of days worked in agriculture by season, type of activity and by sex[26]

	Hilly N=212		Dry N=400		Delta/Coast N=352		Lift villages N=964		Control N=323		Giri N=278		Total N=1565	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Monsoon Season														
Soil preparation/ploughing and /or planting	17	18	12	12	47	19	26	16	27	15	41	15	29	16
Weeding, pest control or other labour activities during growth	8	16	12	22	9	3	10	14	10	13	4	4	9	12
Harvesting	11	16	9	16	30	21	17	18	18	19	27	5	19	16
Other (incl post-harvest)	5	4	3	6	14	2	8	4	6	3	10	2	8	3
Monsoon season total (M/F)	41	54	36	57	100	45	60	52	62	51	82	27	64	47
	95		93		145		112		112		109		112	
Winter/ summer season														
Soil preparation/ploughing and /or planting	8	6	7	7	8	2	8	5	7	5	7	3	8	4
Weeding, pest control or other labour activities during growth	5	7	10	17	1	1	6	9	5	7	0	1	5	7
Harvesting	9	13	10	19	10	8	10	14	10	14	6	1	9	12
Other (incl post-harvest)	6	4	3	8	5	1	5	4	4	4	1	1	4	4
Winter/summer season (M/F)	28	29	31	51	25	11	28	31	26	30	14	6	25	27
	57		82		36		60		56		20		52	
Agricultural total (M/F)	69	82	67	108	124	57	88	83	88	80	96	32	90	74
	152		175		181		172		168		128		163	

Note: Figures are rounded to whole numbers; totals therefore can appear to be out by 1 or 2

Table 23 shows that on average, for households that had engaged in agricultural casual labour in the past 12 months, a total of 90 days of work was done by men and 74 days of work was undertaken by

[26] Averages are based on the numberof households that recorded at least one day worked in agriculture by either male or female members in either the monsoon or winter/summer growing seasons.

women. This is particularly pronounced in the Delta/ Coastal Zone in agricultural activities where over twice the average days of casual work was reported to be done by males than by females. However, this trend was not uniform. In the Hilly and Dry Zones, women undertook more average days of casual work in agriculture than men.[27]

Table 24provides the total number of person days of casual work in agriculture undertaken by maleand female household members. Similar to Table 23, this table shows that,overall,more days were worked by men than women. However this total masks considerable differences between regions, cropping seasons and types of work undertaken. For example in the Dry Zone most agricultural casual work was undertaken by women in the household(though not in soil preparation, ploughing and planting). In Giri-affected areas and the Delta/Coastal Zone there was much less casual agricultural work undertaken by women than in the Hilly and Dry Zones where women did more casual agricultural work than men. In general, the data indicate that women worked more than men in weeding and other activities during the growing season but less in soil preparation and ploughing.

Without studying the gender division of labour within the households and household economies in each region in greater detail it is difficult to determine the respective influences of the major crops grown, the agricultural technologies used, the opportunity costs for men and women undertaking agricultural casual labour, the local social norms, and competing household responsibilities. It should be noted that household size and composition also varied between zones as reported earlier and may also influence the gender division of casual labour.

Table 24: Total number of days household members were paid for agricultural work

	M/F	Hilly	Dry	Delta/Coast	LIFT villages	Control	Giri	Total
Monsoon Season								
Soil preparation, ploughing, planting	Male	3,706	4,958	16,455	25,119	8,740	11,324	45,183
	Female	3,804	4,978	6,751	15,533	4,813	4,287	24,633
Weeding, pest control, activities during growth	Male	1,685	4,808	3,029	9,522	3,263	1,141	13,926
	Female	3,426	8,997	1,121	13,544	4,339	1,058	18,941
Harvesting	Male	2,260	3,537	10,527	16,324	5,929	7,609	29,862
	Female	3,365	6,553	7,520	17,438	6,137	1,487	25,062
Other activities (incl post-harvest)	Male	1,127	1,112	5,052	7,291	1,949	2,725	11,965
	Female	767	2,288	570	3,625	1,059	538	5,222
Monsoon season total	Male	8,778	14,415	35,063	58,256	19,881	22,799	100,936
	Female	11,362	22,816	15,962	50,140	16,348	7,370	73,858
		20,140	37,231	51,025	108,396	36,229	30,169	174,794
Winter/ summer season								
Soil preparation, ploughing, planting	Male	1,788	2,924	2,825	7,537	2,348	1,935	11,820
	Female	1,226	2,750	682	4,658	1,484	865	7,007
Weeding, pest control, activities during growth	Male	1,129	4,051	515	5,695	1,612	96	7,403
	Female	1,386	6,750	180	8,316	2,307	150	10,773
Harvesting	Male	1,813	4,085	3,510	9,408	3,266	1,635	14,309
	Female	2,728	7,512	2,797	13,037	4,617	367	18,021
Other activities (incl post-harvest)	Male	1,218	1,347	1,842	4,407	1,287	168	5,862
	Female	761	3,224	346	4,331	1,217	270	5,818
Winter/summer season total	Male	5,948	12,407	8,692	27,047	8,513	3,834	39,394
	Female	6,101	20,236	4,005	30,342	9,625	1,652	41,619
		12,049	32,643	12,697	57,389	18,138	5,486	81,013
Agri total	Male	14,726	26,822	43,755	8,5303	28,394	26,633	140,330
	Female	17,463	43,052	19,967	8,0482	25,973	9,022	115,477
		32,189	69,874	63,722	165,785	54,367	35,655	255,807

While casual work in agriculture was the most important for households overall, other sectors also provided labour opportunities. Table 25 provides a breakdown of the total number of days of casual labour worked in each sector by male and female members during the preceding 12 months.

[27] The use of the terms "men" and "women" are inclusive of boys and girls (under 18 years of age) that may also be employed.

Table 25:Total number of days of casual work in the past 12 months from all households sampled – by sector and by sex

	Male/Female	Agriculture	Fishery	Forestry	Other	Total
Hilly	Male	14,726	1,286	2,633	14,096	32,741
	Female	17,463	0	214	6,373	24,050
	Total	32,189	1,286	2,847	20,469	56,791
Dry	Male	26,822	863	3,086	14,179	44,950
	Female	43,052	120	1,535	8,224	52,931
	Total	69,874	983	4,621	22,403	97,881
Delta/Coastal	Male	43,755	51,211	2,659	5,056	102,681
	Female	19,967	10,812	1,271	1,159	33,209
	Total	63,722	62,023	3,930	6,215	135,890
LIFT villages	Male	85,303	53,360	8,378	33,331	180,372
	Female	80,482	10,932	3,020	15,756	110,190
	Total	165,785	64,292	11,398	49,087	290,562
Control	Male	28,394	20,205	2,439	8,944	59,982
	Female	25,973	2,397	499	1,841	30,710
	Total	54,367	22,602	2,938	10,785	90,692
Giri-affected	Male	26,633	33,757	22,321	7,625	90,336
	Female	9,022	12,870	8,402	2,490	32,784
	Total	35,655	46,627	30,723	10,115	123,120
Total sample	Male	140,330	107,322	33,138	49,900	330,690
	Female	115,477	26,199	11,921	20,087	173,684
	Total	255,807	133,521	45,059	69,987	504,374

Note: Not all households sampled undertook casual work in the preceding 12 months

Over the total sample nearly twice as many days of casual work was reportedly undertaken by men than women in the past 12 months (330,690 days compared with 173,684 days). However, there was considerable variation in the proportions of days worked by men and women between zones and sectors. Males dominated casual work in the fishery and forestry sectors but in agriculture in the Hilly and Dry Zones there were more days worked by women, as mentioned earlier.

Agriculture was the most important source of casual work for the sample as a whole. However in the Giri-affected areas casual work in fisheries was more important than agriculture.Similarly, in the Delta/Coastal Zone fishery work was almost as important as agricultural work. In the case of men in the Delta/Coastal Zone, more casual work was done in the fishery sector than agriculture. Forestry-related casual was important in Giri-affected areas where in many villages fuel wood, timber and bamboo were in short supply and required more work to access and transport tree forest products.

Other categories of casual work reported to have been undertaken by sample households were varied and collectively were more important than work in forestry for the sample taken as a whole. The frequency of other types of casual work undertaken by the sample is providedin Table 26, below.

Table 26: Frequency of types of "other casual work" - number of households undertaking other casual work in the previous 12 months

	Hilly	Dry	Delta/Coastal	LIFT villages	Control	Giri	Total
Mason worker	32	34	15	81	8	12	101
Water carrying		4	6	10	4	1	15
Making roofs (thatch, bamboo, matting), catching pigs			11	11	6	3	20
Tending animals	1	3	12	16	7	4	27
Carrying goods	11	3	2	16	9	4	29
Carrying stones/bricks digging earth, paving roads	5	19	11	35	15	20	70
Labourer at oil hand-dug well		1		1		12	13
Labourer for motorboat	1	2	2	5	2	2	9
Washing clothes		2	4	6	1	5	12
Worker at salt mill	1	6	1	8			8
Reinforcing embankments			5	5	1	7	13

	Hilly	Dry	Delta/Coastal	LIFT villages	Control	Giri	Total
Blacksmith helper	2			2			2
Gold-panning (helper)	18			18	10		28
Various jobs on horticultural farm	25	3	4	31	13		45
Various jobs on rubber farm	5			5	1		6
Making fuel-efficient stoves			1	1			1
Land clearing/weeding	1			1	1		2
Mechanic worker	1			1			1
Bus conductor/trailer-jeep driver	2	5	1	8	1		9
Worker at purchase warehouse	4	8		12	5		17
Toddy sapharvesting		12		12			12
Handloom worker	1	3		4	2	1	7
Total	110	105	75	289	86	71	447

Table 27: Total number of days households were engaged in these other categories of casual work in the past 12 months, by sex and by region

	Hilly			Dry			Delta/Coastal			LIFT villages			Control			Giri-affected			Total sample		
	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total
Manson worker	4534	155	4689	5485	1050	6535	1581		1581	11600	1205	12805	1075		1075	1680	230	1910	14355	1435	15790
Water carrying				60	825	885	650	180	830	710	1005	1715	530		530		300	300	1240	1305	2545
Making roofs, catching pigs							284	395	679	284	395	679	170	185	355	350	250	600	804	830	1634
Tending animals	250		250	360	450	810	875		875	1485	450	1935	1206		1206	670		670	3361	450	3811
Carrying goods	1430	150	1580	300	90	390	164	150	314	1894	390	2284	887		887	380		380	3161	390	3551
Carrying stones/bricks, digging earth, paving	694	30	724	1965	710	2675	277	145	422	2936	885	3821	1022	140	1162	2700	975	3675	6658	2000	8658
Labourer at oil hand-dug well				180		180				180		180				1235		1235	1415		1415
Labourer for morotboat	150		150	164	180	344	240		240	554	180	734	150		150	240		240	944	180	1124
Washing clothes					500	500	200	204	404	200	704	904		180	180	140	510	650	340	1394	1734
Worker at salt mill	120		120	545	1440	1985	60		60	725	1440	2165							725	1440	2165
Reinforcing embankments							255	40	295	255	40	295		150	150	185	225	410	440	415	855
Blacksmith	150	50	200							150	50	200							150	50	200
Gold-panning	1696	140	1836							1696	140	1836	1870		1870				3566	140	3706
Worker in horticultural farm	4217	4292	8509	110	184	294	380		380	4707	4476	9183	860	176	1036				5567	4652	10219
Worker in rubber farm	285	105	390							285	105	390	10	10	20				295	115	410
Making fuel-efficient stoves							60	45	105	60	45	105							60	45	105
Land clearing/weeding	90		90							90		90	20		20				110		110
Mechanics	100		100							100		100							100		100
Bus conductor/trailer-jeep driver	260		260	1100	485	1585	30		30	1390	485	1875	144		144				1534	485	2019
Worker at purchase warehouse	120	1130	1250	1590	1130	2720				1710	2260	3970	650	700	1350				2360	2960	5320
Toddy sap harvesting				2140	420	2560				2140	420	2560							2140	420	2560
Handloom worker		321	321	180	760	940				180	1081	1261	350	300	650	45		45	575	1381	1956
Totals M	14,096			14,179			5,056			33,331			8,944			7,625			49,900		
Totals F	6,373			8,224			1,159			15,756			1,841			2,490			20,087		
Totals Total	20,469			22,403			6,215			49,087			10,785			10,115			69,987		

Respondents whose households had worked casually for wages in the previous 12 months were asked to compare the availability of casual work in the past 12 months with the previous year (Table 28). Overall, the most common answer was “the same as previous year” (45%) but almost as many (41%) believed that casual work opportunities had decreased. Only 13% of respondents reported that casual

work had increased. In a similar pattern to responses on household income (see Table 20), 58% of respondents from Giri-affected areas believed casual work had decreased in their area.

Table 28: Availability of casual work in thepast 12 months compared with a year earlier - respondent perspectives

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Increased	42	13.2%	84	19.1%	47	9.7%	173	13.9%	43	10.5%	69	13.7%	285	13.2%
Same as previous year	181	57.1%	222	50.5%	218	44.9%	621	50.0%	216	52.8%	141	28.1%	978	45.4%
Decreased	92	29.0%	133	30.2%	220	45.4%	445	35.8%	150	36.7%	291	58.0%	886	41.2%
Don't know/no response	2	0.6%	1	0.2%	0	0.0%	3	0.2%	0	0.0%	1	0.2%	4	0.2%
Total	317	100%	440	100%	485	100%	1242	100%	409	100%	502	100%	2153	100%

Households can also be paid for casual work in food, goods or services. In all current LIFT zones (Hilly, Dry, Delta/Coastal) and the control villages some 9% to 15% of households reported receiving payment in kind (see Table 29). However, over one third of households from the Giri-affected area had received payment in kind. This was possibly due, at least in part, to the relief and reconstruction efforts of NGOs and UN agencies working in the area following Cyclone Giri.Some of these agencies had been implementing food-for-work activities. However, there is also a common practice among vulnerable households of receiving rice from more well-off households in repayment for labour services (with these services sometimes provided at a later date). Similarly agricultural labourers can be paid by farmers in food/crop after harvest (often at a set rate of baskets per days worked). The FGDs conducted as part of this baseline study confirmed the importance of these practices among the poor and vulnerable.

Table 29:Households working for in-kind payment (e.g., payment in food, goods, services but not in money) in the previous 12 months

Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
No.	%	No.	%	No.	%	No.	No.	%	No.	%	No.	%	No.
73	9.13%	118	14.75%	109	13.63%	300	12.50%	88	11.00%	270	33.75%	658	16.45%

Table 30 clearly illustrates that casual work paid in kind was of greater importance for poor households. Nearly one quarter of households earning an average household income of less than Ks 25,000 per month had been paid in kind for casual work over the past 12 months. The percentage of households paid in kind decreased as average income increased.

Table 30: Number and percent of households in each monthly income category who worked for payment in kind in the previous 12 months

HH monthly income	Total HHs	HHs paid in kind	Paid in kind as % total
Less than Ks 25,000	538	132	24.5%
Ks 25,001 - Ks 50,000	1469	283	19.3%
Ks 50,001 - Ks 75,000	890	131	14.7%
Ks 75,001 - Ks 100,000	570	84	14.7%
Ks 100,001 - Ks 150,000	274	24	8.8%
Ks 150,001 - Ks 200,000	104	2	1.9%
Ks 200,001 - Ks 250,000	41	1	2.4%
Ks 250,001 - Ks 300,000	35	0	0.0%
Over Ks 300,000	58	1	1.7%
Don't know/no response	21	0	0.0%
Total	4,000	658	16.5%

Respondents were asked which was more important for their households in the past 12 months; work paid in cash or work paid in kind. Work paid in kind while less common among respondent households than casual labour for cash wages was still considered important. Again a larger proportion of households from the Giri-affected areas found work paid in kind more important than households in

other zones. Over one third of respondents from Giri-affected areas who did casual work believed work paid in kind to be more important for their households over the previous 12 months than work paid in cash (see Table 31). For other zones, only 10 to 15% of households that had undertaken casual work over the previous 12 months reported work paid in kind to be the more important.

Table 31:Relative importanceof work where payments were made in cash or in kind for households in the previous 12 months

More important type of casual work?	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	No.	%	No.	%	No.	%	No.	No.	%	No.	%	No.	%	No.
Work paid in cash	275	86.8%	395	89.8%	408	84.1%	1078	86.8%	365	89.2%	320	63.7%	1763	81.9%
Work paid in kind	42	13.2%	45	10.2%	77	15.9%	164	13.2%	44	10.8%	182	36.3%	390	18.1%
Total	317	100%	440	100%	485	100%	1242	100%	409	100%	502	100%	2153	100%

5.6 Employment of farm labour

The survey also investigated the *employment* of casual labour, in particular in agricultural activities by farming households. This was considered important to understand as a key assumption behind many LIFT funded projects is that supporting the farming sector will create greater demand for casual labour thereby contributing to the livelihoods of landless and land poor households.

Households were first divided between those that had undertaken farming activities in the previous 12 months. Nearly half the 4,000 households in the sample had undertaken farming activities; however there were significant differences between zones (Table 32). In the Hilly Zone nearly three-quarters of all households had undertaken farming, however in the delta and coastal areas (including Giri-affected areas on the Rakhine coast) less than 30% of households had been engaged in farming. This understandably is a reflection of the households' access to land (see Section 5.8).

Table 32:Number of households that had undertaken farming activities in the previous 12 months.

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	No.	%	No.	%	No.	%	No.	No.	%	No.	%	No.	%	No.
Yes	588	73.5%	447	55.9%	230	28.8%	1265	52.7%	456	57.0%	225	28.1%	1946	48.6%
No	212	26.5%	353	44.1%	570	71.2%	1135	47.3%	344	43.0%	575	71.9%	2054	51.4%
Total	800	100%	800	100%	800	100%	2400	100%	800	100%	800	100%	4000	100%

Fifty-eight per cent of households that had undertaken farming activities in the previous 12 months had employed workers to assist in agricultural production (see Table 33). However there was great variability between zones with 82% of farming households in the dry zone employing casual labour but only 34% in the Hilly Zone. This partly a reflection of land holding sizes and partly the nature of the nature of agriculture practiced in each area.Households sampled in the Hilly Zone had the lowest average land holding size (see Table 55 in Section 5.8) and relied more on household labourhaving the largest average household size of all zones.

Table 33:Number of farming households employing workers to assist in agricultural production during the previous 12 months

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	No.	%	No.	%	No.	%	No.	No.	%	No.	%	No.	%	No.
Employed workers	199	33.8%	367	82.1%	175	76.1%	741	58.6%	246	53.9%	138	61.3%	1125	57.8%
Did not employ	389	66.2%	80	17.9%	55	23.9%	524	41.4%	210	46.1%	87	38.7%	821	42.2%
Total	588	100%	447	100%	230	100%	1265	100%	456	100%	225	100%	1946	100%

Table 34 illustrates the expected relationship between employment of labour and land holding size, with farming households that owned the largest land areas most likely to employ labour. Over 90% of farming households owning more than 10 acres employed labour in the past 12 months. However only 26% of households with less than 1 acre employed casual labour.

Table 34:Frequency and percentage of farming householdsemploying casual workers in the previous 12 months – households by land holding size

	Hilly			Dry			Delta/Coastal			LIFT villages			Control			Giri			Total		
	Freq	Tot. Farm HHs	%	Freq	Tot. Farm HHs	%	Freq	Tot. Farm HHs	%	Freq	Tot. Farm HHs	%	Freq	Tot. Farm HHs	%	Freq	Tot. Farm HHs	%	Freq	Tot. Farm HHs	%
No land	12	64	19	19	25	76	20	46	43	51	135	38	17	39	44	10	18	56	78	192	41
< 1 acre	5	24	21	10	17	59	0	4	0	15	45	33	2	14	14	0	7	0	17	66	26
1 - 2 acres	61	243	25	52	80	65	4	5	80	117	328	36	43	137	31	25	48	52	185	513	36
2 - 5 acres	70	173	40	138	165	84	21	25	84	229	363	63	84	139	60	41	79	52	354	581	61
5 - 10 acres	35	66	53	84	95	88	53	64	83	172	225	76	53	74	72	44	54	81	269	353	76
10 - 15 acres	9	10	90	30	30	100	22	28	79	61	68	90	16	18	89	9	9	100	86	95	91
15 - 20 acres	3	4	75	21	22	95	24	24	100	48	50	96	16	19	84	4	5	80	68	74	92
> 20 acres	4	4	100	13	13	100	31	34	91	48	51	94	15	16	94	5	5	100	68	72	94
Total	199	588	34	367	447	82	175	230	76	741	1265	59	246	456	54	138	225	61	1125	1946	58

As expected the amount of labour employed is related to the area farmed. This suggests that if the strategy is to support farmers in the expectation that they will engage more casual labour, thereby assisting the landless and land poor, then providing support to larger land owners may have the biggest impact. However, this assumption remains to be tested and will be investigated in subsequent LIFT evaluations.[28]

What may appear to be an error in the table where households with no land employed farm labour is explained by the number of households who did not own land but who had rented, share farmed or otherwise cultivated another's land (see Section 5.8).

The high proportion of farming households that did employ workers in the Dry Zone contributed to a higher number of persons-days employed in agriculture than any other zone (see Table 35). The farming households in the Delta/Coastal Zonedespite having the largest average land holding size among farming households (see Table 55) employed in total less casual labour than farmers in the Dry Zone, reporting the second largest number of labour-days of casual work. Delta/Coastal farmers employed much less casual labour in the winter/summer cropping season than in the monsoon season; a reflection of the fact than many farmers produced only one crop of paddy per year. This difference between labour use in the monsoon and winter/summer seasons was not as pronounced in the Dry Zone. Furthermore, the crops grown in the Dry Zone (mainly sesame seed, groundnut and pigeon pea) require on-going labour for weeding during the growing season, unlike most traditionally grown paddy where seed is broadcast and little weeding is undertaken.

Farming households reported employing more female casual labour that male casual labour (see Table 35). The predominance of female labour was particularly pronounced in weeding and other activities during crop growth (a similar trend reported by casual labours earlier). Employment of male labour was more common for monsoon post-harvest activities. While in most zones, employment of male and female labour was roughly in similar proportions, in the Hilly and Dry Zones approximately 50% more female than male casual labour was employed by farming households. This may in part be explained by the difference in casual wages paid to men and women. The FGDs reported that women generally received Ks 500 less than men per day of casual work, but sometimes Ks 1,000 less. Depending on the nature of the work and the region, men were commonly paid between Ks 1,500 and Ks 3,000 per day and women between Ks 1,000 and Ks 2,500 per day.

Table 35: Total days all farming household employed casual labour by cropping season and zone

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total		
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	All

[28] If the assumption is proven to be true or partly true, it remains to be determined whether any increase in demand for casual labour is permanent/sustainable. Whether this is the most cost effective means to support the poor and vulnerable is another issue. Considerations of equity with such a strategy are also of concern.

MONSOON (Total)	**16,369**	**23,080**	**26,987**	**42,577**	**45,486**	**46,991**	**88,842**	**112,648**	**21,465**	**27,184**	**15,742**	**13,104**	**126,049**	**152,936**	**278,985**
Soil preparation/ ploughing/planting	9,277	8,065	9,195	9,303	20,654	24,424	39,126	41,792	8,983	6,430	6,893	8,915	55,002	57,137	112,139
Weeding, pest control, activities during growth	990	4,965	8,180	17,607	4,907	2,847	14,077	25,419	3,400	8,406	842	2,335	18,319	36,160	54,479
Harvesting	5,212	8,198	7,089	12,541	11,931	19,148	24,232	39,887	6,768	11,251	4,495	1,749	35,495	52,887	88,382
Other activities (incl post-harvest)	890	1,852	2,523	3,126	7,994	572	11,407	5,550	2,314	1,097	3,512	105	17,233	6,752	23,985
WINTER/SUMMER (Total)	**5,480**	**8,632**	**21,790**	**29,701**	**6,642**	**5,231**	**33,912**	**43,564**	**8,142**	**9,329**	**2,001**	**2,206**	**44,055**	**55,099**	**99,154**
Soil preparation/ ploughing/planting	2,438	1,795	9,471	4,810	2,285	1,195	14,194	7,800	1,984	1,021	880	604	17,058	9,425	26,483
Weeding, pest control, activities during growth	532	1,145	4,401	9,607	641	345	5,574	11,097	1,272	1,999	155	263	7,001	13,359	20,360
Harvesting	1,939	3,688	6,284	12,750	2,212	3,559	10,435	19,997	3,451	5,291	876	652	14,762	25,940	40,702
Other activities (incl post-harvest)	571	2,004	1,634	2,534	1,504	132	3,709	4,670	1,435	1,018	90	687	5,234	6,375	11,609
TOTALS	21,849	31,712	48,777	72,278	52,128	52,222	122,754	156,212	29,607	36,513	17,743	15,310	170,104	208,035	378,139
	53,561		121,055		104,350		278,966		66,120		33,053		378,139		

The 1,125 farming households in the sample that did employ farm labour in the previous 12 months employed on average 88 labour days; 49 female and 39 male days (see Table 36). Only in Delta/Coastal area were more male days employed than female labour days. This is in part but not totally explained by the limited work available for women/girls in weeding in the rice production system.

Table 36: Average number of days employer households employed male and female workers in agriculture in past 12 months

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	199HHs		367HHs		175HHs		741HHs		246HHs		138HHs		1125HHs	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Monsoon season														
Soil preparation, ploughing, planting	47	41	25	25	118	140	53	56	37	26	50	65	49	51
Weeding, pest control, etc during growth	5	25	22	48	28	16	19	34	14	34	6	17	16	32
Harvesting	26	41	19	34	68	109	33	54	28	46	33	13	32	47
Other activities (incl post-harvest)	4	9	7	9	46	3	15	7	9	4	25	1	15	6
Totals monsoon season	**82**	**116**	**74**	**116**	**260**	**269**	**120**	**152**	**87**	**111**	**114**	**95**	**112**	**136**
	198		**190**		**528**		**272**		**198**		**209**		**248**	
Winter/summer season														
Soil preparation, ploughing, planting	12	9	26	13	13	7	19	11	8	4	6	4	15	8
Weeding, pest control, etc during growth	3	6	12	26	4	2	8	15	5	8	1	2	6	12
Harvesting	10	19	17	35	13	20	14	27	14	22	6	5	13	23
Other activities (incl post-harvest)	3	10	4	7	9	1	5	6	6	4	1	5	5	6
Totals winter/ summer season	**28**	**43**	**59**	**81**	**38**	**30**	**46**	**59**	**33**	**38**	**15**	**16**	**39**	**49**
	71		**140**		**68**		**105**		**71**		**30**		**88**	

Farming households were asked about their labour hiring in the past 12 months compared with a year earlier (see Table 37). The majority of respondents indicated that their households had hired similar amounts of farm labour (69%). Twenty-two percent responded that they had hired more casual labour and only 9% that they had hired less compared with the previous year. This appears to contrast with the perspectives of households on the availability of casual work (Table 28) where 41% of respondents believed that there had been less casual work in the past 12 months compared with the previous year.

However as discussed earlier casual work in agriculture for farming households while important was not the only type of casual work undertaken. Furthermore the survey did not investigate in any detail the distribution of casual labour work among households or the relative contributions of employment of local villagers and workers from beyond the locality. FGDs in many villages tended to confirm that it was becoming increasingly difficult to find casual work locally. In some villages men and women workers both reported that jobs were scarce and demand for work was increasing as local populations had increased progressively following Cyclone Nargis and workers sometimes came from other villages to seek local jobs.

Table 37:Comparison of employment of casual labourby farming households in the past 12 months with the previous year

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
More farm labour	41	20.6%	114	31.1%	27	15.4%	182	24.6%	44	17.9%	18	13.0%	244	21.7%
Same as previous year	136	68.3%	209	56.9%	142	81.1%	487	65.7%	177	72.0%	115	83.3%	779	69.2%
Less labour	22	11.1%	44	12.0%	6	3.4%	72	9.7%	25	10.2%	5	3.6%	102	9.1%
Total	199	100%	367	100%	175	100%	741	100%	246	100%	138	100%	1125	100%

5.7 Food security

5.7.1: Household Dietary Diversity Score

The Household Dietary Diversity Score (HDDS) is a widely used proxy measure of household food access where the number of different food groups consumed over the previous 24 hours is recalled by respondents. While a diversified diet is an important outcome in itself it is also correlated with improved outcomes in birth weight, child anthropometric status, caloric and protein adequacy. It is also correlated with household income.[29]
Increased food expenditure resulting from additional income is generally associated with increased quantity and quality of the diet.

Table 38 summarises the results in terms of the average number of different food groups[30] reported by respondents in the different regions sampled. Households from Giri-affected areas, common with other measures of disadvantage discussed earlier, reported the lowest score with the least diversified diets. Households from the Dry Zone the highest score.

Table 38: Average of household dietary diversity score (HDDS)(standard FANTA methodology)

N=4,000	Average
Hilly	4.80
Dry	6.28
Delta/Coastal	5.45
LIFT villages	5.51
Control villages	5.42
Giri	4.74
Total	5.34

The scores are broken down in Table 39 where again differences in regions are marked: 42% of households in Giri-affected areas had scores of 4 or less while only 10% of households in the Dry Zone had such low scores. Almost 13% of households in the Hilly Zone had scores of 3 or less, while almost 19% of households in the Dry Zone had scores of 8 or more.

[29] Swindale, Anne, and Paula Bilinsky. *Household Dietary Diversity Score (HDDS) for Measurement of Household Food Access: Indicator Guide (v.2).* Washington, D.C.: Food and Nutrition Technical Assistance Project, Academy for Educational Development, 2006.
[30] The questionnaire broke down the recommended 12 groups into sub-groups making 15 groups in total. These were reaggregated in the 12 groups for this analysis. The additional groups were designed to make the list more appropriate to the local foods consumed.

Table 39:Frequency of household dietary diversity scores in each region

HDDS	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
2	15	1.9%			2	0.2%	17	0.7%	4	0.5%	3	0.4%	24	0.6%
3	87	10.9%	1	0.1%	17	2.1%	105	4.4%	44	5.5%	69	8.6%	218	5.4%
4	243	30.4%	80	10.0%	137	17.1%	460	19.2%	145	18.1%	264	33.0%	869	21.7%
5	246	30.8%	196	24.5%	308	38.5%	750	31.2%	271	33.9%	329	41.1%	1,350	33.8%
6	141	17.6%	208	26.0%	202	25.2%	551	23.0%	177	22.1%	93	11.6%	821	20.5%
7	50	6.2%	164	20.5%	92	11.5%	306	12.8%	100	12.5%	25	3.1%	431	10.8%
8	14	1.8%	80	10.0%	28	3.5%	122	5.1%	38	4.8%	13	1.6%	173	4.3%
9	0	0.0%	37	4.6%	9	1.1%	46	1.9%	14	1.8%	2	0.2%	62	1.6%
10	3	0.4%	25	3.1%	4	0.5%	32	1.3%	6	0.8%	1	0.1%	39	1.0%
11	1	0.1%	9	1.1%			10	0.4%	1	0.1%	1	0.1%	12	0.3%
12					1	0.1%	1	0.0%					1	0.0%
Total	800	100%	800	100%	800	100%	2,400	100%	800	100%	800	100%	4,000	100%

Table 40 indicates the average HDDS by household monthly income in each region. As a general trend it can be seen that HDDS increases with reported monthly income.

Table 40: Average household dietary diversity score by household average monthly income and region

	Hilly	Dry	Delta/Coastal	LIFT villages	Control	Giri	Total
Less than Ks 25,000	3.99	5.84	4.97	4.88	4.82	4.38	4.73
Ks 25,001 - Ks 50,000	4.59	6.03	5.18	5.20	5.21	4.75	5.11
Ks 50,001 - Ks 75,000	5.04	6.32	5.58	5.67	5.49	4.82	5.47
Ks 75,001 - Ks 100,000	5.18	6.35	5.66	5.83	5.93	4.84	5.62
Ks 100,001 - Ks 150,000	5.33	6.93	5.92	6.08	6.02	5.04	5.89
Ks 150,001 - Ks 200,000	5.43	7.27	6.36	6.41	6.25	5.50	6.34
Ks 200,001 - Ks 250,000	5.55	7.30	5.50	6.10	5.14	5.33	5.88
Ks 250,001 - Ks 300,000	6.30	6.55	5.67	6.20	6.40		6.23
Over Ks 300,000	6.22	6.75	6.89	6.70	6.36	5.33	6.57

5.7.2 Months of adequate household food provisioning (MAHFP)

Months of adequate household food provisioning (MAHFP) is another of the indicators of household food access used in the LIFT baseline survey along with the household dietary diversity score (HDDS) and Household Hunger Scale (HHS).[31]

MAHFP assesses a household's access to food over the course of the previous 12 months. Food access depends on the ability of a household to obtain food from its own production, stocks, purchases, collecting, or through food transfers from relatives, the community, government or donors. A household's ability to meet its food needs can vary over the year due to factors such as the level and timing of crop production,changes in income sources such as employment, as well as social obligations, climate patterns or natural disasters. Over time, the MAHFP will capture changes in the household's ability to address food insecurity.It has the advantage of capturing the combined effects of a range of interventions and strategies, such as improved agricultural production, processing and storage, and interventions that improve income generation.[32]

Table 42 provides the average of household MAHFP for each region sampled. Once again Giri-affected areas show the lowest score: the least months of adequate household food. The differences between average MAHFP between regions is however not significant.

Table 41:Average of months of adequate household food provisioning by region

[31]These all use standardized methodologies documented by the Food and Nutrition Technical Assistance (FANTA) II Project funded by the Office of Health, Infectious Disease, and Nutrition, Bureau for Global Health, USAID.
[32]Bilinsky, Paula and Anne Swindale. *Months of Adequate Household Food Provisioning (MAHFP) for Measurement of Household Food Access: Indicator Guide (v.4).* Washington, D.C.: FANTA Project, AED, 2010.

	Mean	N	Std. Deviation
Hilly	10.04	800	1.813
Dry	10.00	800	1.744
Delta & Coastal	9.79	800	1.984
Control villages	9.92	800	1.846
Giri	9.66	800	1.974
Total	9.88	4,000	1.879

The frequency of different MAHFP scores in each region is provided in the table below (Table 42) and better illustrates the numbers of households reporting months of food insecurity.[33]Two thousand, eight hundred and fifty-two respondents of the 4,000 sampled (or 71%) reported that there were some months in the preceding 12 months when their households did not have enough food to eat. There were 20 households that did not have enough food in every of the past 12 months (MAHFP score of 0). Similarly there were 134 households (3% of the sample) with only six months or less of adequate access to food (adding the frequencies of scores 0 to 6). Households in Giri-affected areas showed again that they were the most vulnerable with less than 20% of households reporting adequate food throughout the year.

Table 42:Frequency of MAHFP scores in each region

MAHFP	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
0	2	0.2%	2	0.2%	7	0.9%	11	0.5%	4	0.5%	5	0.6%	20	0.5%
1	0	0.0%	2	0.2%	1	0.1%	3	0.1%	0	0.0%	1	0.1%	4	0.1%
2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	0.2%	1	0.1%	3	0.1%
3	0	0.0%	1	0.1%	1	0.1%	2	0.1%	0	0.0%	2	0.2%	4	0.1%
4	0	0.0%	1	0.1%	2	0.2%	3	0.1%	0	0.0%	7	0.9%	10	0.2%
5	4	0.5%	4	0.5%	7	0.9%	15	0.6%	5	0.6%	14	1.8%	34	0.8%
6	8	1.0%	9	1.1%	15	1.9%	32	1.3%	9	1.1%	18	2.2%	59	1.5%
7	56	7.0%	32	4.0%	44	5.5%	132	5.5%	51	6.4%	34	4.2%	217	5.4%
8	98	12.2%	81	10.1%	90	11.2%	269	11.2%	78	9.8%	102	12.8%	449	11.2%
9	136	17.0%	137	17.1%	155	19.4%	428	17.8%	158	19.8%	128	16.0%	714	17.8%
10	173	21.6%	271	33.9%	211	26.4%	655	27.3%	215	26.9%	218	27.2%	1088	27.2%
11	41	5.1%	17	2.1%	39	4.9%	97	4.0%	37	4.6%	116	14.5%	250	6.2%
12	282	35.2%	243	30.4%	228	28.5%	753	31.4%	241	30.1%	154	19.2%	1148	28.7%
Total	800	100%	800	100%	800	100%	2400	100%	800	100%	800	100%	4000	100%

The Giri-affected households in the sample had the lowest average MAHFP score and also the lowest proportion of households with 12 months of adequate household food provisioning. This is partly a reflection of their continuing hardships in recovering from Cyclone Giri.[34]

Table 43: Average of months of adequate household food provisioning (MAHFP) by landing holding size and region

	Hilly	Dry	Delta/Coastal	LIFT villages	Control	Giri	Total
	N=800	N=800	N=800	N=2400	N=800	N=800	N=4000
no land	9.94	9.75	9.51	9.66	9.42	9.50	9.58
<1 acre	10.71	9.75	10.43	10.34	10.18	7.90	10.03
1-2 acres	9.69	9.93	10.36	9.77	9.81	10.03	9.81
2+ to 5	10.28	9.98	10.15	10.14	10.56	10.18	10.24
5+ to 10	10.60	10.47	10.58	10.54	10.28	9.73	10.36
10+ to 15	11.10	10.90	10.29	10.66	9.89	10.64	10.51
15+ to 20	11.00	10.50	10.84	10.71	11.29	10.60	10.86
>20 acres	10.75	11.31	10.95	11.02	10.94	10.60	10.97
Total	10.04	10.00	9.79	9.95	9.92	9.66	9.88

[33] The method relies on respondent recall; asking respondents to work back month by month over the past 12 months identifying months during which their household did not have enough food to eat.
[34] However this is conjecture as there were no measures to compare MAHFP prior to Giri.

Tables 43 and 44 examine the relationship between MAHFP and land ownership, and MAHFP and average household monthly income respectively. There is a general but weak trend suggesting that MAHFP increases with area of land owned. Over the entire sample, households with no land had the lowest MAHFP average score of 9.6 months and households with more than 20 acres had the highest average score of 11.0 months.

A similar but more pronounced trend can be observed between MAHFP and household monthly income (Table 44).Households earning less than Ks 25,000 per month had an average MAHFP score of 9.1 months rising progressively to an average MAHFP score of 11.8 months for households earning more than Ks 300,000 per month.

Table 44: Average of months of adequate household food provisioning (MAHFP) by household average monthly income and region

	Hilly	Dry	Delta/Coastal	LIFT villages	Control	Giri	Total
	N=800	N=800	N=800	N=2400	N=800	N=800	N=4000
Less than Ks 25,000	9.06	9.87	8.48	9.19	8.99	8.92	9.08
Ks 25,000 - Ks 50,000	9.73	9.54	9.33	9.53	9.59	9.49	9.53
Ks 50,000 - Ks 75,000	10.30	9.86	10.01	10.05	10.09	9.77	10.00
Ks 75,000 - Ks 100,000	10.54	10.23	10.43	10.37	10.39	10.33	10.37
Ks 100,000 - Ks 150,000	11.08	10.75	10.76	10.85	10.95	10.51	10.82
Ks 150,000 - Ks 200,000	10.96	10.70	11.40	10.99	12.00	11.67	11.14
Ks 200,000 - Ks 250,000	10.91	11.60	11.40	11.29	11.00	11.00	11.22
Ks 250,000 - Ks 300,000	11.40	11.27	11.56	11.40	10.80		11.31
Over Ks 300,000	12.00	11.81	11.89	11.89	11.73	11.00	11.81
Don't know/no resp	8.80	8.50	8.14	8.44	8.00		7.95
Overall average	10.04	10.00	9.79	9.95	9.92	9.66	9.88

Note: The Giri sample did not include households in the income range Ks 250,000 – 300,000, and all respondents provided an estimate of household monthly income.

5.7.3 Household Hunger Scale (HHS)

The Household Hunger Scale (HHS) is a simple measure of household access to food that was designed to be used in settings affected by substantial food insecurity.[35]The indicator was intentionally developed for cross-cultural use; of relevance to Myanmar with its ethnic diversity. The simple method is based on scoring responses to three questions that assess the level of hunger over the previous four weeks (see the questionnaire in Annex C).[36] These responses are summed to produce overall scores from 0 to 6 with the following descriptive summaries: "little to no household hunger" (score 0–1), "moderate household hunger" (score 2–3), and "severe household hunger" (score 4–6).

Table 45:Median of Household Hunger Scale (standard FANTA methodology)

	Median
Hilly	0.00
Dry	0.00
Delta/Coastal	0.00
LIFT villages	0.00
Control villages	0.00
Giri	0.00
Total	0.00

Despite the timing of the survey in a time before the main monsoon harvest the Household Hunger Scale (HHS) indicated that no region in the sample had a median score above zero.[37]

[35] Megan Deitchler, Terri Ballard, Anne Swindale, and Jennifer Coates. *Introducing a Simple Measure of Household Hunger for Cross-Cultural Use*. Washington, D.C.: Food and Nutrition Technical Assistance II Project, AED, 2011.
[36] Note that households that responded that there were no months in which their households were short of food (Question 8.1) were skipped over questions about household hunger scales and short-term coping strategies (Questions 9.1 to 9.6). Percentages are therefore based on a reduced sample of 2,852 households.
[37] The FANTA II methodology advocates use of median values rather than mean values to compare between groups.

While none of the regions as a whole could be considered food insecure using the HHS indicator at the time of the survey, there were 135 households within the sample reporting moderate household hunger (scores 2–3), and 35 households reportingsevere household hunger" (scores 4–6)(see Table 46). The Delta/Coastal Zones and Giri-affected areas had the largest proportion of households with moderate or severe hunger (scores greater than 1).

Table 46: Frequency of Household Hunger Scale scores in each region

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
0	471	90.9%	537	96.4%	465	81.3%	1,473	89.4%	505	90.3%	567	87.8%	2,545	89.2%
1	30	5.8%	9	1.6%	49	8.6%	88	5.3%	23	4.1%	26	4.0%	137	4.8%
2	13	2.5%	7	1.3%	29	5.1%	49	3.0%	13	2.3%	20	3.1%	82	2.9%
3	3	0.6%	0	0.0%	19	3.3%	22	1.3%	10	1.8%	21	3.3%	53	1.9%
4	0	0.0%	3	0.5%	6	1.0%	9	0.5%	3	0.5%	10	1.5%	22	0.8%
5	1	0.2%	1	0.2%	4	0.7%	6	0.4%	2	0.4%	0	0.0%	8	0.3%
6	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	0.5%	2	0.3%	5	0.2%
Total	518	100%	557	100%	572	100%	1,647	100%	559	100%	646	100%	2,852	100%

Part of the reason for the high HHS scores for the Delta/Coastal and Giri-affected zones is the high level of landlessness (with 72% and 68% of sampled households respectively with no land, compared with 50% for the total sample of 4,000 households) (see Section 5.8 for further details). Table 47 illustrates the relationship between HHS and land holding. Nearly 10% of households with no land reported moderate or severe hunger in the four weeks previous to the survey. While for the 776 households with more than 2 acres of land there were only 8 cases that reported moderate or severe hunger (representing 1%).

Table 47: Frequency of Household Hunger Scale scores by household land holding

	Household Hunger Scale															
	0		1		2		3		4		5		6		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
no land	1337	84.8%	90	5.7%	66	4.2%	51	3.2%	22	1.4%	5	0.3%	5	0.3%	1576	100%
<1 acre	51	89.5%	4	7.0%	2	3.5%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	57	100%
1-2 acres	410	92.6%	22	5.0%	10	2.3%	0	0.0%	0	0.0%	1	0.2%	0	0.0%	443	100%
2+ to 5	407	96.9%	10	2.4%	1	0.2%	1	0.2%	0	0.0%	1	0.2%	0	0.0%	420	100%
5+ to 10	226	96.2%	6	2.6%	3	1.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	235	100%
10+ to 15	57	95.0%	2	3.3%	0	0.0%	0	0.0%	0	0.0%	1	1.7%	0	0.0%	60	100%
15+ to 20	33	91.7%	3	8.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	36	100%
>20 acres	24	96.0%	0	0.0%	0	0.0%	1	4.0%	0	0.0%	0	0.0%	0	0.0%	25	100%

Not only households with sufficient land, but also households with high levels of income should be able to avoid food shortages and hunger. This is illustrated in Table 48, which clearly shows that households reporting incomes of less than Ks 25,000 per month were more likely to have experienced moderate or severe hunger in the 4 weeks previous to the survey; 15% of households earning less than Ks 25,000 per month experienced moderate or severe hunger compared with 11 out of 581 households (2%) earning more than Ks 75,000.

Table 48: Frequency of Household Hunger Scale scores by household average monthly income

	Household Hunger Scale															
	0		1		2		3		4		5		6		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Less than Ks 25,000	347	78.5%	31	7.0%	30	6.8%	17	3.8%	12	2.7%	3	0.7%	2	0.5%	442	100%
> Ks 25,000 - Ks 50,000	1024	87.7%	63	5.4%	37	3.2%	29	2.5%	7	0.6%	4	0.3%	3	0.3%	1167	100%
> Ks 50,000 - Ks 75,000	607	93.8%	27	4.2%	7	1.1%	5	0.8%	1	0.2%	0	0.0%	0	0.0%	647	100%
> Ks 75,000 -	361	95.5%	10	2.6%	5	1.3%	1	0.3%	1	0.3%	0	0.0%	0	0.0%	378	100%

Ks 100,000															
> Ks 100,000 - Ks 150,000	131	96.3%	2	1.5%	1	0.7%	0	0.0%	1	0.7%	1	0.7%	0	0.0%	136	100%
> Ks 150,000 - Ks 200,000	32	94.1%	2	5.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	34	100%
> Ks 200,000 - Ks 250,000	12	85.7%	1	7.1%	0	0.0%	1	7.1%	0	0.0%	0	0.0%	0	0.0%	14	100%
> Ks 250,000 - Ks 300,000	12	100%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	12	100%
Over Ks 300,000	7	100%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	7	100%
Don't know/no response	12	80.0%	1	6.7%	2	13.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	15	100%

The above examples clearly illustrate the benefits of targeting landless and low income households for interventions aiming to improve food security.

5.7.4Coping Strategies

Respondents were also asked a series of questions about their households' coping strategies in situations when there was not enough food (see the questionnaire in Annex C). These were divided between recent strategies that may have been adopted over the 4 weeks previous to the survey, and strategies that may have been adopted at any time in the previous 12 months. Table 49 summarises the responses by region.

Table 49: Frequency of different coping strategies adopted by households in the past four weeks, by region

Region	Adoption	Reduce the size or number of meals		Change diet to cheaper or less preferred food		Eat wild food more frequently than usual	
		Freq	%	Freq	%	Freq	%
Hilly	Never	417	81%	307	59%	492	95%
	Rarely or sometimes	95	18%	198	38%	25	5%
	Often	6	1%	13	3%	1	0%
	Total	518	100%	518	100%	518	100%
Dry	Never	531	95%	416	75%	554	99%
	Rarely or sometimes	23	4%	116	21%	3	1%
	Often	3	1%	25	4%	0	0%
	Total	557	100%	557	100%	557	100%
Delta/Coastal	Never	387	68%	105	18%	473	83%
	Rarely or sometimes	136	24%	264	46%	69	12%
	Often	49	9%	203	35%	30	5%
	Total	572	100%	572	100%	572	100%
LIFT Villages	Never	1335	81%	828	50%	1519	92%
	Rarely or sometimes	254	15%	578	35%	97	19%
	Often	58	4%	241	15%	31	103%
	Total	1647	100%	1647	100%	1647	100%
Control	Never	464	83%	293	52%	519	93%
	Rarely or sometimes	67	12%	180	32%	30	5%
	Often	28	5%	86	15%	10	2%
	Total	559	100%	559	100%	559	100%
Giri-affected	Never	430	67%	264	41%	561	87%
	Rarely or sometimes	156	24%	246	38%	36	6%
	Often	60	9%	136	21%	49	8%
	Total	646	100%	646	100%	646	100%
Total sample	Never	2229	78%	1385	49%	2599	91%
	Rarely or sometimes	477	17%	1004	35%	163	6%
	Often	146	5%	463	16%	90	3%
	Total	2852	100%	2852	100%	2852	100%

Overall, the most common short-term coping strategy was changing the household's diet to cheaper or less-preferred foods with more that 50% of households adopting this strategy to some extent during the previous four weeks. However, over 20% of households also had reduced the size or numbers of meals eaten; the proportion reaching a third of all households in Giri-affected areas and the Delta/Coastal Zone. It should be remembered that the survey took place immediately prior to the main monsoon harvest at a time of heightened food insecurity for many households.

Table 50 displays the responses regarding coping strategies adopted by the sample of 4,000 households in the previous year. These are ordered by frequency of adoption. As can be seen borrowing money or food in order to get enough food for the household was very common. While such borrowing can sometimes be short-term with loans repaid following harvest or subsequent employment, borrowing can also lead to increasing indebtedness and eventual sale of productive assets. This was also surprisingly common with over 20% of households being forced to sell, pawn or exchange assets or possessions in order to have enough food to eat. Similarly 15% of households sold or consumed more livestock than usual, and 5% sold, rented or mortgaged land.

Table 50: Frequency of different coping strategies adopted by HHs in the past 12 months, by region

Household strategies in order to have enough food to eat	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	No.	% HHs	No.	% HHs	No.	% HHs	No.	% HHs	No.	% HHs	No.	% HHs	No.	% HHs
Borrowing food or money from relatives, friends or neighbours	333	41.6%	418	52.3%	407	50.9%	1158	48.3%	407	50.9%	458	57.3%	2023	50.6%
Borrowing from money lenders, associations, banks, traders, shopkeepers	330	41.3%	393	49.1%	404	50.5%	1127	47.0%	368	46.0%	360	45.0%	1855	46.4%
Selling, pawning or exchanging assets/possessions	75	9.4%	183	22.9%	252	31.5%	510	21.3%	168	21.0%	146	18.3%	824	20.6%
Selling or consuming more of your livestock than usual	166	20.8%	98	12.3%	141	17.6%	405	16.9%	139	17.4%	76	9.5%	620	15.5%
Decreasing expenditure on health or medicines	74	9.3%	112	14.0%	203	25.4%	389	16.2%	123	15.4%	90	11.3%	602	15.1%
Using savings	81	10.1%	112	14.0%	118	14.8%	311	13.0%	107	13.4%	87	10.9%	505	12.6%
Children discontinuing school	49	6.1%	55	6.9%	81	10.1%	185	7.7%	66	8.3%	59	7.4%	310	7.8%
Selling or consuming seeds meant for next season's crops	60	7.5%	55	6.9%	40	5.0%	155	6.5%	42	5.3%	27	3.4%	224	5.6%
Selling, mortgaging or renting any of the HH's land	16	2.0%	58	7.3%	45	5.6%	119	5.0%	50	6.3%	54	6.8%	223	5.6%

Most groups in the FGDs identified the wet season months and months prior to the monsoon harvest as the most difficult in terms of feeding the household. In the wet season months there are fewer jobs and catches of crabs and fish are poor. Food is available to be bought but poor, landless families don't have the money until work opportunities become available at harvest time. Prior to harvest, any rice stocks held by farming households are running short or are exhausted. Poor farmers have only assets to sell; otherwise they have to borrow money or food until they harvest their monsoon crops.

In most regions food shortages for the most food insecure households required households to eat cheaper foods (e.g., no fish or meat), reduce the size of meals and limit the number of meals per day. Some ate rice gruel. FGDs in Giri-affected areas indicated that some households go a whole day without food. Going a whole day without food was not common in other areas.

The FGDs confirmed that beyond changes in consumption, mentioned above, the most common coping strategy was borrowing money or food from fellow villagers. Obtaining wages in advance of working was also common among landless and poor households. These wages are commonly taken as either paddy or money. Other coping strategies mentioned in FGDs included: buying food on credit often at higher prices; collecting wild food, crabs and fishing; pawning household assets (anything down to plates and cooking pots) and livestock; and selling assets (livestock, fishing nets even planks from house walls). The most extreme of these were reported in the FGDs in Giri-affected areas.

The use of the coping strategies reported in the questionnaire can be tallied as a score for each household from 0 to 9, scoring zero for households that did not adopt any of the nine strategies and scoring a maximum of nine for households that adopted all the strategies at some time over the previous 12 months. Table 51 provides the median and mean scores by region. Households in the Hilly Zone were less likely to adopt any of the nine coping strategies while households in the Delta/Coastal Zone were most likely.

Table 51: Coping strategy score for the previous 12 months

	Number of households	Median	Mean
Hilly	800	1.00	1.48
Dry	800	2.00	1.86
Delta & Coastal	800	2.00	2.11
All LIFT villages	2400	2.00	1.82
Control villages	800	2.00	1.84
Giri	800	2.00	1.70
Total	4000	2.00	1.80

Tables 52 and 53 examine this coping strategy score in relation to household land holding and average monthly income in each region of the survey. There is a clear tendency for households with increasing levels of land ownership to have had less need to adopt coping strategies. A similar pattern is evident for households with increasing levels of average monthly income. These relationships are as expected. The more land or more income the more food secure and less need for coping strategies to gain access to food.

Table 52: Coping strategy score for the previous 12 months by land holding and region

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	Valid N	Mean	Valid N	Mean	Valid N	Mean	Valid N	Mean	Valid N	Mean	Valid N	Mean	Valid N	Mean
no land	209	1.56	341	1.99	577	2.30	1127	2.07	323	2.28	546	1.68	1996	2.00
<1 acre	31	1.19	20	2.25	7	1.71	58	1.62	22	1.64	10	2.40	90	1.71
1-2 acres	288	1.58	102	1.98	11	1.82	401	1.69	167	1.60	63	1.94	631	1.69
2+ to 5	185	1.39	173	1.88	41	1.66	399	1.63	154	1.44	100	1.34	653	1.54
5+ to 10	68	1.25	99	1.47	69	1.96	236	1.55	78	1.62	60	2.07	374	1.65
10+ to 15	10	1.30	30	1.30	31	2.35	71	1.76	19	2.11	11	1.82	101	1.83
15+ to 20	5	1.00	22	1.77	25	1.20	52	1.42	21	1.05	5	1.80	78	1.35
>20 acres	4	1.00	13	.69	39	.72	56	.73	16	1.31	5	1.20	77	.88
Total	800	1.48	800	1.86	800	2.11	2400	1.82	800	1.84	800	1.70	4000	1.80

Table 53: Coping strategy score for the previous 12 months by householdaverage monthly income and region

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	Valid N	Mean	Valid N	Mean	Valid N	Mean	Valid N	Mean	Valid N	Mean	Valid N	Mean	Valid N	Mean
Less than Ks 25,000	112	1.73	98	2.07	73	2.63	283	2.08	105	2.05	150	1.89	538	2.02
Ks 25,001 - Ks 50,000	308	1.75	240	2.25	339	2.58	887	2.20	297	2.12	285	1.87	1469	2.12
Ks 50,001 - Ks 75,000	173	1.45	190	1.87	167	2.04	530	1.78	183	1.97	177	1.55	890	1.78
Ks 75,001 - Ks 100,000	92	1.14	141	1.86	88	1.77	321	1.63	119	1.49	130	1.37	570	1.54
Ks 100,001 - Ks 150,000	52	.87	57	1.16	63	1.41	172	1.16	57	1.11	45	1.67	274	1.23
Ks 150,001 - Ks 200,000	28	.96	33	1.09	25	.40	86	.85	12	.00	6	.50	104	.73
Ks 200,001 - Ks 250,000	11	.91	10	.50	10	1.00	31	.81	7	1.57	3	1.00	41	.95
Ks 250,001 - Ks 300,000	10	1.00	11	.36	9	.44	30	.60	5	1.20	0	.	35	.69
Over Ks 300,000	9	.00	16	.25	19	.16	44	.16	11	.27	3	2.00	58	.28
Don't know/no resp	5	1.00	4	1.75	7	1.71	16	1.50	4	1.00	1	1.00	21	1.38
Total	800	1.48	800	1.86	800	2.11	2400	1.82	800	1.84	800	1.70	4000	1.80

5.8 Access to land and its cultivation

Land is the most important livelihood asset for households in rural Myanmar. Ownership of sufficient land can ensure income and food security. However ownership of land is not universal and inequitable in its distribution amongst the rural population. Within the sample of 4,000 households 50% of households did not own land. However, there was considerable variation in land ownership between

regions. Only a quarter of households (26%) in the Hilly Zone did not own land while 72% did not own land in the Delta/Coastal Zone (see Table 54). The sample from the Giri-affected areas also displayed a high proportion of landless households (68%).

Table 54:Land holding size by region

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total sample	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
no land	209	26.1%	341	42.6%	577	72.1%	1127	47.0%	323	40.4%	546	68.2%	1996	49.9%
<1 acre	31	3.9%	20	2.5%	7	0.9%	58	2.4%	22	2.8%	10	1.2%	90	2.2%
1-2 acres	288	36.0%	102	12.8%	11	1.4%	401	16.7%	167	20.9%	63	7.9%	631	15.8%
2+ to 5	185	23.1%	173	21.6%	41	5.1%	399	16.6%	154	19.2%	100	12.5%	653	16.3%
5+ to 10	68	8.5%	99	12.4%	69	8.6%	236	9.8%	78	9.8%	60	7.5%	374	9.4%
10+ to 15	10	1.2%	30	3.8%	31	3.9%	71	3.0%	19	2.4%	11	1.4%	101	2.5%
15+ to 20	5	0.6%	22	2.8%	25	3.1%	52	2.2%	21	2.6%	5	0.6%	78	2.0%
>20 acres	4	0.5%	13	1.6%	39	4.9%	56	2.3%	16	2.0%	5	0.6%	77	1.9%
Total	800	100%	800	100%	800	100%	2400	100%	800	100%	800	100%	4000	100%

For households that did own land there were also big differences in the size of land holdings. Of the 223 households that did own land in the Delta/Coastal Zone only 59 (26%) owned five or less acres while the remaining nearly three quarters of the land owning households held more than 5 acres. In all other regions the majority of land owning households held less than 5 acres. Similarly, average and median land holdings in the Delta/Coastal Zone were much larger than any other area at nearly 16.8and 10 acres respectively (see Table 55).

Table 55: Average size of land holdings in acres for those households that owned land

	Mean	Median	Minimum	Maximum	Stand. Deviation
Hilly	3.51	2.00	0.25	100.00	5.29
Dry	6.32	4.50	0.10	60.00	6.47
Delta & Coastal	16.81	10.00	0.25	180.00	24.48
All LIFT villages	6.86	3.50	0.10	180.00	12.46
Control villages	5.57	3.00	0.10	58.00	7.11
Giri	5.14	4.00	0.25	40.00	4.91
Total sample	6.33	3.00	0.10	180.00	10.69

The very skewed distribution of land ownership in the Delta/Coastal Zone raises concerns of equity when providing agricultural assistance in these areas unless programmes target the quite small percent of small land owning households (owning say less than 5 acres).

Households gained access to land for agriculture through other means than 'ownership'.[38] Some households rented land (paying rent in cash or agricultural product), share farmed land belonging to other households, or were lent land to cultivate (often from relatives). Households that did gain access to land in these ways were commonly households that did not own their own land (see Tables 56 and 57).

[38] Note that land claimed as owned by the household is often not formally registered by the state.

Table 56: Frequency of accessing land through renting, share cropping, or free use agreements during the previous 12 months, by size of land 'owned'

Area of land owned by HHs	HHs renting land, paying in cash	HHs renting land, paying in kind	HHs share farming another's land	HHs cultivating land, no charge
no land	78	33	62	53
<1 acre	2	1	0	5
1-2 acres	12	5	17	15
2+ to 5	16	13	11	12
5+ to 10	8	3	5	1
10+ to 15	5	0	5	0
15+ to 20	5	0	3	0
>20 acres	2	3	0	0
Total	128	58	103	86

Renting land and paying in cash was the most common, followed by share farming, then renting paying in kind, and finally borrowing land free of charge.

Table 57 brings these various means of accessing land together to show the overall extent of accessing land other than through ownership in each land holding class.[39] Overall 342 or 8.6% of households accessed land that they did not own. Landless households were by far the majority with 10.1% of landless households accessing land through rental, sharecropping or land lending arrangements.

Table 57: Frequency of accessing land through means other than 'ownership' in the past 12 months, by size of land owned (no double counting).

Area of land owned	No. HHs	%	Total HHs in land holding category
no land	202	10.1%	1,996
<1 acre	8	8.9%	90
1-2 acres	46	7.3%	631
2+ to 5	50	7.7%	653
5+ to 10	17	4.5%	374
10+ to 15	8	7.9%	101
15+ to 20	7	9.0%	78
>20 acres	4	5.2%	77
Total HHs	342	8.6%	4,000

After serious natural disasters such as Cyclones Nargis and Giri, agricultural land can fall out of production as infrastructure such as embankments is damaged and the necessary inputs are lost or can no longer be afforded. A key indicator of this recovery is the percentage of the land each household owns that is cultivated. The survey asked respondents for the total area owned by the household and the area that the household was cultivating at the time of the survey (late in the monsoon season just before harvest).

Table 58 suggests that the Delta/Coastal Zone and Giri-affected areas still have some way to go before land is fully utilized as only 77%, a little over three quarters, was cultivated at the time of the survey.

Table 58: Percent of own land cultivated at the time of survey by each household that owns land – average by region and control

	Mean
Hilly	83.95
Dry	87.28
Delta & Coastal	76.75
Lift villages	83.89
Control villages	85.94
Giri	77.03
Total	83.51

[39] Some households accessed land in more than one way.

Even in the Delta area, over 3 years after Cyclone Nargis, some households still lacked the inputs and resources to replant all their land for the 2011 monsoon season. Some embankments and sluice gates in coastal lands still required repair. This was clearly apparent in results of the evaluation of the first LIFT Delta subprogramme conducted just after the baseline but in different villages.

This comparatively low cultivation intensity in the Delta/Coastal Zone may also be a function of land holding size given that this zone had the largest land holdings in the sample (see Tables 54 and 55). Tables 59 and 60 explore the assumption that the larger the household's land the less intensively it would be cultivated. There was no evidence of such a trend in the overall sample (Table 59).

Table 59: Percent of own land cultivated at the time of survey by each household that owns land – average by land holding size

	Mean
no land	.
<1 acre	79.56
1-2 acres	82.33
2+ to 5	82.78
5+ to 10	87.15
10+ to 15	84.54
15+ to 20	88.68
>20 acres	79.68
Total	83.51

However Table 60 suggests that in the Hilly Zone there may be a pattern of decreasing intensity of land cultivation with increasing land area owned. This may be explained by the nature of land owned (its topography and land use potential). For example, some the larger land holdings may be unsuitable for cultivation and used as grazing lands. This would need further investigation before a conclusion could be drawn. Conversely, in the Delta/Coastal Zone it was the smallest holdings, 2 acres or less, that had the lowest cultivation intensity. The extent of such a relationship and reasons for it would need further investigation; cultivation intensity was not discussed in the FGDs.

Table 60:Percent of own land (mean) cultivated at the time of survey by each household that owns land – average by land holding size and region

	Hilly	Dry	Delta/Coastal	LIFTvillages	Control	Giri	Total
no land	.	.	.	.	.	.	.
<1 acre	87.10	85.00	51.43	82.07	77.27	70.00	79.56
1-2 acres	83.60	80.15	45.45	81.67	86.26	76.06	82.33
2+ to 5	85.01	88.02	63.66	84.12	84.81	74.31	82.78
5+ to 10	85.14	90.17	88.00	88.09	88.14	82.15	87.15
10+ to 15	76.47	95.54	77.54	84.99	89.86	72.42	84.54
15+ to 20	62.50	94.26	89.65	88.99	88.31	87.00	88.68
>20 acres	60.80	83.97	75.08	76.12	86.87	96.58	79.68
Total	83.95	87.28	76.75	83.89	85.94	77.03	83.51

There is an apparent relationship between household land area owned and cultivated and the household's average monthly income (Table 61). On average those households reporting larger average monthly income levels also had larger land holdings and were cultivating larger areas of land at the time of the survey. As absolute levels of income were not established in the survey (respondents were only asked to estimate their households' average monthly income in a closed question with set ranges) it is not possible to determine the strength of this correlation.

Table 61: Average area of land owned and average area cultivated by households with different monthly income levels

Average HH monthly Income (Ks)	Average area of HH land owned (acres)	Average area land cultivated (acres)
Less than Ks 25,000	3.04	2.35
Ks 25,000 - Ks 50,000	4.32	3.34
> Ks 50,000 - Ks 75,000	5.59	4.66
> Ks 75,000 - Ks 100,000	7.78	6.45

Average HH monthly Income (Ks)	Average area of HH land owned (acres)	Average area land cultivated (acres)
> Ks 100,000 - Ks 150,000	7.55	6.92
> Ks 150,000 - Ks 200,000	10.85	9.68
> Ks 200,000 - Ks 250,000	14.23	10.98
> Ks 250,000 - Ks 300,000	13.41	10.70
Over Ks 300,000	23.72	22.67
Don't know/no response	9.20	3.40

The FGDs also discussed access to land for the landless. FGDs indicated that for landless households it was more common to be provided land to build a house than for agriculture. In some cases households were also allowed to grow vegetables for home consumption (but not sale). These lands were generally provided free of charge by landowning households but in some cases the landless had to pay rent. This was recognized as a loan of the land and did not confer any permanent rights.

In the Chin village, FGD landless villagers were sometimes provided a small plot of land for cultivation for which they had to pay one tenth of the production to the landowner. In one Shan village, landless FGD participants reported that land could be leased for Ks 20,000 per acre per year but only small areas were available (1 to 2 acres). Larger areas of land surrounding the village had been leased to companies by the government on 30 year terms.[40] Another village in Shan State reported that land was available for rent at Ks 50,000 per acre per year. Fenced land was more expensive (Ks 80,000 with bamboo posts). Some landowners also offered land to trusted workers whereby landowners paid for all inputs initially. Under this arrangement the workers had to repay the cost of inputs upon harvest and share the production. In other villages in different states/regions, FGD participants reported that there was no opportunity to rent land in their villages.[41] If the landless owned cattle, land owners did sometimes allow access to their land but expected a share of the income (e.g., from milk, offspring or livestock sale). However, in the majority of FGDs, landless participants reported that the opportunity for them to gain access to land for cultivation was very limited.

5.9 Household crop production

The sample survey asked respondents about their production of annual crops in the preceding 12 months. Information was collected concerning the 'major crop' grown in the 2010 monsoon season and 'major crop' grown after the 2010 monsoon season harvest. Given the timing of the survey prior to the 2011 monsoon harvest it was not possible to discuss 2011 monsoon crop yields, so questions on monsoon cropping related to the previous monsoon season at the end of 2010.[42]Post-monsoon crops or 'summer' crops were harvested in early 2011.[43] However, many areas of the Delta/Coastal zone only produce one crop a year - the monsoon rice crop.

5.9.1 Monsoon crops

Table 62 showsthe number and percent of households who grew crops in the 2010 monsoon season, the post-monsoon season and who grew at any time in the preceding 12 months. There is great variability between regions and seasons. Households in the Hilly Zone were most likely to have grown crops in the 2010 monsoon season (72% of all 800 households sampled grew crops). Households in the Delta/Coastal Region and Giri-affected areas were least likely with 27% and 28% respectively. Even a smaller percentage of households in these two areas grew post-monsoon crops (10% and 7% respectively) indicating that the majority of farming households grew only one crop each year.

[40] Village Bant Bway, in Nawnghkio Township. Shan State.
[41] This was the case in the two FGD villages in Magwe.
[42] The survey was deliberately done prior to the monsoon harvest as this is generally the time of maximum food insecurity.
[43] Post-monsoon crops are often called 'summer crops' as they are *harvested* as the days get warmer and drier in the first quarter of the calendar year. However they are also sometimes confusingly referred to as 'winter crops' as they *grow* during the shorter, cooler days of winter.

Table 62: Frequency of households that grew crops in the 2010 monsoon season, in the post monsoon season, and at any time in the preceding 12 months.

		Hilly	Dry	Delta/Coastal	LIFT villages	Control	Giri	Total
2010 monsoon season	No.	577	412	215	1204	436	221	1861
crops	%	72.1%	51.5%	26.9%	50.2%	54.5%	27.6%	46.5%
Post monsoon crops	No.	256	304	82	642	229	53	924
(winter or summer crops)	%	32.0%	38.0%	10.3%	26.8%	28.6%	6.6%	23.1%
Grew crops any time in	No.	608	451	235	1294	470	228	1992
preceding 12 months	%	76.0%	56.4%	29.4%	53.9%	58.8%	28.5%	49.8%

Table 63 examines the major crop grown by each of the sampled households in the 2010 season.The tablefocusses on the top 7 most commonly grown'major crops'.[44]

Table 63. Top 7 most planted cropsin the 2010 monsoon season by region

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Paddy/sticky rice	157	27.2%	84	20.4%	211	98.1%	452	37.5%	153	35.1%	216	97.7%	821	44.1%
Corn/maize	255	44.2%	0	0.0%	0	0.0%	255	21.2%	81	18.6%	1	0.5%	337	18.1%
Sesame seed	11	1.9%	143	34.7%	1	0.5%	155	12.9%	63	14.4%	0	0.0%	218	11.7%
Groundnut	18	3.1%	81	19.7%	0	0.0%	99	8.2%	36	8.3%	0	0.0%	135	7.3%
Pigeon pea	27	4.7%	72	17.5%	0	0.0%	99	8.2%	47	10.8%	0	0.0%	146	7.8%
Potato	38	6.6%	0	0.0%	0	0.0%	38	3.2%	11	2.5%	0	0.0%	49	2.6%
Chilli	3	0.5%	13	3.2%	0	0.0%	16	1.3%	22	5.0%	0	0.0%	38	2.0%

Note: Percentages are calculated as the % of all households in each region who grew crops in the 2010 monsoon season

Rice was clearly the most commonly planted crop, but not everywhere. Corn or maize was the most common in the Hilly Zone with 44% of all households that grew monsoon crops planting it. Similarly sesame seed was the most commonly planted crop in the Dry Zone (35% of all households that grew monsoon crops). Ninety-eight percent of all households that grew monsoon crops in the Delta/Coastal and Giri-affected areas planted rice.

Table 64: Average area planted and yield for the top 7 most planted 2010 monsoon crop by region[45]

	Number of HHs cultivating each crop	Mean area sown (acres)	Mean quantity harvested (pounds)	Mean yield (pounds/acre)	Mean yield (MT/ha)
Paddy/rice	821	7.43	10,764	1,622	1.82
Corn/maize	337	2.59	4,420	1,417	1.59
Sesame seed	218	4.39	1,179	249	0.28
Groundnut	135	5.19	2,569	522	0.59
Pigeon pea	146	3.58	1,026	367	0.41
Potato	49	1.79	3,895	2,349	2.63
Chilli	38	2.01	1,544	1,025	1.15

Households were asked to estimate the area planted to the major crop that they grew in the 2010 monsoon season and its yield (see Table 64). These should be seen as estimates only, for a number of reasons:

- many if not most farmers would not know with any great accuracy the area sown to a crop[46]
- farmers generally do not weigh their yields but use baskets and other local measures of volume. and conversion rates are not very accurate[47]

[44] Owing to the complexity of collecting detailed information from each household on each of the variety of crops sown. The questionnaire focused on just two crops: the major monsoon crop and the major post-monsoon crop grown by each household.

[45] Note that as baskets or other measures of volume were the measure of production recalled by respondents it is important to know the form of the harvested product. In the case of paddy/rice/sticky rice this was rice still in the husk; corn/maize - grains removed from the cob; groundnut – nuts still in the shell; sesame seed - loose seed removed from the capsule; pigeon pea – loose seed removed from the pod; potato – loose potatoes; chilli – fresh fruits.

[46] While in some cases a household may know the total area of land owned, most farmers did not plant the entire area of their land to crops (see earlier discussion on cultivation intensity – section 5.8).

- farmers rely on recall in this case of crops that were harvested 10 or 11 months prior to the survey.

Table 65 presents the average areas planted for each monsoon crop in each region for the households who planted these crops. As expected, the largest average area sown in the 2010 monsoon season was in the Delta/Coastal Zone (15.5 acres), where the vast majority of land cultivated was sown to rice. After rice, groundnut had the next largest area sown looking at the sample as a whole (5.2 acres).

Table 65: Average area planted for the top seven 2010 monsoon crops in each region (acres)

	Hilly	Dry	Delta/Coastal	LIFT villages	Control	Giri	Total
Paddy/rice/sticky rice	2.60	2.63	15.54	8.65	6.59	5.47	7.43
Corn/maize	2.66	.	.	2.66	2.37	3.00	2.59
Sesame seed	2.05	4.99	.30	4.76	3.48	.	4.39
Groundnut	3.40	5.86	.	5.41	4.58	.	5.19
Pigeon pea	2.59	3.32	.	3.12	4.54	.	3.58
Potato	1.87	.	.	1.87	1.52	.	1.79
Chilli	3.78	2.19	.	2.49	1.66	.	2.01
Total	2.60	4.27	15.47	5.64	4.48	5.46	5.34

Respondents were also asked to compare the yield they achieved in the 2010 monsoon cropping season with an average monsoon crop yield for their major crop grown; *better*, *same* or *worse.*Table 66 displays the results. Taking all crops and regions together, 43% of respondents believed the 2010 monsoon crop to have been worse than average, 38% believed yields to have been average, and 19% better than average. However, respondents from Giri-affected areas overwhelmingly reported that the 2010 monsoon crop was worse than average (73% of respondents); obviously the result of Cyclone Giri which hit the area just before harvest.

In terms of crops, sesame and rice yields were reportedly worse than other crops in the 2010 monsoon season, but the season was reportedly good for potato yields.

Table 66:Comparison of yieldsof the 2010 monsoon crops compared with the respondent's average yield for the monsoon seasonfor each region

		Paddy/rice		Corn/maize		Groundnut		Sesame		Pigeon pea		Potato		Chilli		Total	
		Freq	%	Freq	%	Freq		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Better	Hilly	34	21.7	42	16.5	6	33.3	1	9.1	7	25.9	20	52.6			110	21.6
	Dry	18	21.4			33	40.7	33	23.1	12	16.7			4	30.8	100	25.4
	Delta/Coastal	32	15.2													32	15.1
	LIFT villages	84	18.6	42	16.5	39	39.4	34	21.9	19	19.2	20	52.6	4	25.0	242	21.7
	Control	22	14.4	18	22.2	14	38.9	14	22.2	7	14.9	3	27.3	3	13.6	81	19.6
	Giri	8	3.7													8	3.7
	Total	**114**	**13.9**	**60**	**17.8**	**53**	**39.3**	**48**	**22.0**	**26**	**17.8**	**23**	**46.9**	**7**	**18.4**	**331**	**19.0**
Same	Hilly	64	40.8	100	39.2	9	50.0	4	36.4	13	48.1	12	31.6	2	66.7	204	40.1
	Dry	23	27.4			29	35.8	34	23.8	37	51.4			3	23.1	126	32.1
	Delta/Coastal	112	53.1					1	100							113	53.3
	LIFT villages	199	44.0	100	39.2	38	38.4	39	25.2	50	50.5	12	31.6	5	31.3	443	39.8
	Control	67	43.8	34	42.0	11	30.6	13	20.6	20	42.6	8	72.7	11	50.0	164	39.7
	Giri	50	23.1	1	100											51	23.5
	Total	**316**	**38.5**	**135**	**40.1**	**49**	**36.3**	**52**	**23.9**	**70**	**47.9**	**20**	**40.8**	**16**	**42.1**	**658**	**37.7**
Worse	Hilly	59	37.6	113	44.3	3	16.7	6	54.5	7	25.9	6	15.8	1	33.3	195	38.3
	Dry	43	51.2			19	23.5	76	53.1	23	31.9			6	46.2	167	42.5
	Delta/Coastal	67	31.8													67	31.6
	LIFT villages	169	37.4	113	44.3	22	22.2	82	52.9	30	30.3	6	15.8	7	43.8	429	38.5
	Control	64	41.8	29	35.8	11	30.6	36	57.1	20	42.6			8	36.4	168	40.7
	Giri	158	73.1													158	72.8
	Total	**391**	**47.6**	**142**	**42.1**	**33**	**24.4**	**118**	**54.1**	**50**	**34.2**	**6**	**12.2**	**15**	**39.5**	**755**	**43.3**

[47] Baskets are the most common measures or production, and conversion rates used in this analysis (from Ministry of Agriculture) do not account for different varieties and moisture contents etc.

Yields are of course influenced by many factors including climate, soil fertility, varieties, pests and disease and cultivation practices. The survey asked respondents about several factors for each of the major crops sown: the seed source (own seed, improved varieties etc), intercropping, means of tillage, sowing technique, use of fertilizer (inorganic and organic), and use of insecticides, fungicides and herbicides. Tables 67, 68, 69, 70, 71 and 72 summarise the findings for each of the top seven monsoon crops in each region.

Table 67. Percent of the top 7 monsoon crops that were intercropped by region

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Paddy/rice	47	29.9	6	7.1	17	8.1	70	15.5	24	15.7	3	1.4	97	11.8
Corn/maize	147	57.6	0	0.0	0	0.0	147	57.6	51	63.0	0	0.0	198	58.8
Sesame seed	6	54.5	100	69.9	1	100	107	69.0	41	65.1	0	0.0	148	67.9
Groundnut	10	55.6	47	58.0	0	0.0	57	57.6	16	44.4	0	0.0	73	54.1
Pigeon pea	13	48.1	48	66.7	0	0.0	61	61.6	19	40.4	0	0.0	80	54.8
Potato	6	15.8	0	0.0	0	0.0	6	15.8	4	36.4	0	0.0	10	20.4
Chilli	0	0.0	10	76.9	0	0.0	10	62.5	11	50.0	0	0.0	21	55.3
Total	229	45.0	211	53.7	18	8.5	458	41.1	166	40.2	3	1.4	627	36.0

As can be seen above rice was seldom intercropped apart from upland rice in the Hilly Zone. Most other crops, other than potato, were commonly planted with other crops.

Tables 68a, 68b and 68c show that the most common source of seed was seed saved by the farmers themselves from previous crops (76% of respondents). Households also purchased (or were provided) other seed; 15% improved seed and 14% unimproved.[48] Improved seed was most common for corn or maize (27%) and least common for sesame seed (10%). Only 11% of households reported acquiring improved rice seed. These figures suggest that considerable gains in yield could be realized with greater adoption of improved varieties.[49]

Table 68a:Source of seed for the top 7 monsoon crops – own seed

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Paddy/rice	136	86.6	69	82.1	172	81.5	377	83.4	126	82.4	160	74.1	663	80.8
Corn/maize	166	65.1					166	65.1	58	71.6	1	100	225	66.8
Sesame seed	8	72.7	103	72.0	1	100	112	72.3	45	71.4			157	72.0
Groundnut	9	50.0	57	70.4			66	66.7	31	86.1			97	71.9
Pigeon pea	19	70.4	60	83.3			79	79.8	39	83.0			118	80.8
Potato	27	71.1					27	71.1	3	27.3			30	61.2
Chilli	3	100	12	92.3			15	93.8	17	77.3			32	84.2
Total	368	72.3	301	76.6	173	81.6	842	75.6	319	77.2	161	74.2	1322	75.8

Table 68b: Source of seed for the top 7 monsoon crops – improved seed (purchased or provided)

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Paddy/rice	22	14.0%	7	8.3%	21	10.0%	50	11.1%	20	13.1%	24	11.1%	94	11.4%
Corn/maize	72	28.2%					72	28.2%	18	22.2%			90	26.7%
Sesame seed	2	18.2%	15	10.5%			17	11.0%	4	6.3%			21	9.6%
Groundnut	7	38.9%	7	8.6%			14	14.1%	2	5.6%			16	11.9%
Pigeon pea	7	25.9%	4	5.6%			11	11.1%	4	8.5%			15	10.3%
Potato	9	23.7%					9	23.7%	6	54.5%			15	30.6%
Chilli			1	7.7%			1	6.3%	4	18.2%			5	13.2%
Total	119	23.4%	34	8.7%	21	9.9%	174	15.6%	58	14.0%	24	11.1%	256	14.7%

[48] Note that some respondents reported multiple sources of seed.

[49] Notwithstanding some caution is recommended in interpreting these findings; it was left to respondents to determine whether the seed that they purchased or was provided to them was *improved* or *unimproved*.

Table 68c: Source of seed for the top 7 monsoon crops – unimproved seed (purchased or provided)

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Paddy/rice	17	10.8%	8	9.5%	34	16.1%	59	13.1%	22	14.4%	40	18.5%	121	14.7%
Corn/maize	26	10.2%					26	10.2%	6	7.4%			32	9.5%
Sesame seed	1	9.1%	24	16.8%			25	16.1%	15	23.8%			40	18.3%
Groundnut	2	11.1%	20	24.7%			22	22.2%	5	13.9%			27	20.0%
Pigeon pea	2	7.4%	10	13.9%			12	12.1%	4	8.5%			16	11.0%
Potato	3	7.9%					3	7.9%	1	9.1%			4	8.2%
Chilli	1	33.3%	2	15.4%			3	18.8%	2	9.1%			5	13.2%
Total	52	10.2%	64	16.3%	34	16.0%	150	13.5%	55	13.3%	40	18.4%	245	14.0%

Animal traction was by far the most common way of tilling the soil. Only in planting corn/maize was hand digging and planting more common (see Table 69). Most monsoon corn/maize was planted in the Hilly Zone. Power tillers were only widely used in the Delta/Coastal Zone for rice production (33% of households) but seldom used elsewhere. Tractors were also used in the Delta/Coastal Zone for rice production (7% of households) but not at all used for other crops. The use of power tillers and tractors in the Delta/Coastal Zone was likely a function of the larger average land holdings, the relatively high value product (rice), and the purchase and provision of mechanized equipment following Cyclone Nargis when many draft animals were lost.

Table 69:Equipment used for tilling the soil for the top 7 monsoon crops by region

		Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Paddy/rice	Manpower	24	15.3%	3	3.6%	13	6.2%	40	8.8%	24	15.7%	20	9.3%	84	10.2%
	Animal	122	77.7%	78	92.9%	113	53.6%	313	69.2%	84	54.9%	191	88.4%	588	71.6%
	Power tiller	10	6.4%	3	3.6%	70	33.2%	83	18.4%	36	23.5%	4	1.9%	123	15.0%
	Tractor	1	0.6%			15	7.1%	16	3.5%	9	5.9%	1	.5%	26	3.2%
	Total	157	100%	84	100%	211	100%	452	100%	153	100%	216	100%	821	100%
Corn/maize	Manpower	138	54.1%					138	54.1%	39	48.1%	1	100%	178	52.8%
	Animal	104	40.8%					104	40.8%	42	51.9%			146	43.3%
	Power tiller	13	5.1%					13	5.1%					13	3.9%
	Tractor														
	Total	255	100%					255	100%	81	100%	1	100%	337	100%
Sesame seed	Manpower	3	27.3%	2	1.4%	1	100%	6	3.9%					6	2.8%
	Animal	8	72.7%	137	95.8%			145	93.5%	63	100%			208	95.4%
	Power tiller			4	2.8%			4	2.6%					4	1.8%
	Tractor														
	Total	11	100%	143	100%	1	100%	155	100%	63	100%			218	100%
Groundnut	Manpower	3	16.7%					3	3.0%					3	2.2%
	Animal	14	77.8%	80	98.8%			94	94.9%	36	100%			130	96.3%
	Power tiller	1	5.6%	1	1.2%			2	2.0%					2	1.5%
	Tractor														
	Total	18	100%	81	100%			99	100%	36	100%			135	100%
Pigeon pea	Manpower	8	29.6%	1	1.4%			9	9.1%	5	10.6%			14	9.6%
	Animal	17	63.0%	70	97.2%			87	87.9%	42	89.4%			129	88.4%
	Power tiller	2	7.4%	1	1.4%			3	3.0%					3	2.1%
	Tractor														
	Total	27	100%	72	100%			99	100%	47	100%			146	100%
Potato	Manpower	5	13.2%					5	13.2%	5	45.5%			10	20.4%
	Animal	32	84.2%					32	84.2%	4	36.4%			36	73.5%
	Power tiller	1	2.6%					1	2.6%	2	18.2%			3	6.1%
	Tractor														
	Total	38	100%					38	100%	11	100%			49	100%
Chilli	Manpower	2	66.7%	2	15.4%			4	25.0%	4	18.2%			8	21.1%
	Animal	1	33.3%	11	84.6%			12	75.0%	18	81.8%			30	78.9%
	Power tiller														
	Tractor														
	Total	3	100%	13	100%			16	100%	22	100%			38	100%

Transplanting of rice was the most common form of planting rice in all areas other than the Giri-affected villages where broadcasting was more common (Table 70). The use of seeders for planting rice was only used in 7 cases out of the 821 households planting rice in the 2010 monsoon season. Transplanting was also the most common form of planting for the remaining top 6 crops with the exception of sesame where 77% of households broadcast the seed. However, it is likely that 'transplanting' did not always mean transplanting *seedlings* as would be the case with rice. Rather transplanting is likely to also include hand placement in furrows and thereby distinct from both broadcasting with little control over placement and use of mechanical seeders.[50]

Table 70:Methods used for sowing crops for the top 7 monsoon crops by region

		Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Paddy/rice	Broadcast	35	22.3%	29	34.5%	94	44.5%	158	35.0%	58	37.9%	136	63.0%	352	42.9%
	Seeder	4	2.5%			2	.9%	6	1.3%	1	0.7%			7	0.9%
	Transplant	118	75.2%	55	65.5%	115	54.5%	288	63.7%	94	61.4%	80	37.0%	462	56.3%
Corn/maize	Broadcast	27	10.6%					27	10.6%	13	16.0%			40	11.9%
	Seeder	2	0.8%					2	0.8%					2	0.6%
	Transplant	226	88.6%					226	88.6%	68	84.0%	1	100%	295	87.5%
Sesame seed	Broadcast	9	81.8%	117	81.8%			126	81.3%	42	66.7%			168	77.1%
	Seeder			5	3.5%			5	3.2%	1	1.6%			6	2.8%
	Transplant	2	18.2%	21	14.7%	1	100%	24	15.5%	20	31.7%			44	20.2%
Groundnut	Broadcast	2	11.1%	18	22.2%			20	20.2%	3	8.3%			23	17.0%
	Seeder			15	18.5%			15	15.2%					15	11.1%
	Transplant	16	88.9%	48	59.3%			64	64.6%	33	91.7%			97	71.9%
Pigeon pea	Broadcast	9	33.3%	26	36.1%			35	35.4%	21	44.7%			56	38.4%
	Seeder	1	3.7%	3	4.2%			4	4.0%					4	2.7%
	Transplant	17	63.0%	43	59.7%			60	60.6%	26	55.3%			86	58.9%
Potato	Broadcast	11	28.9%					11	28.9%	1	9.1%			12	24.5%
	Seeder	1	2.6%					1	2.6%					1	2.0%
	Transplant	26	68.4%					26	68.4%	10	90.9%			36	73.5%
Chilli	Broadcast	1	33.3%					1	6.3%	4	18.2%			5	13.2%
	Seeder														
	Transplant	2	66.7%	13	100%			15	93.8%	18	81.8%			33	86.8%

Use of fertilizer, both inorganic and organic, was common in all crops and all regions (Tables 71a and 71b). Inorganic fertilizers were used in all monsoon crops by the majority of households but was particularly common in production of potatoes where 88% of households reported using it. Organic fertilizers, including composts and manures, were also very commonly used in all monsoon crops with the exception of corn/maize and rice where less than half the households reported using them. There were no questions on specific types/composition of fertilizers and rates of application as this information was seen to be too complex and too unreliable for collecting using recall. It is not uncommon for farmers to use more than one type of fertilizer and apply different fertilizers and rates at different points in the growing season. Careful observations and field records are required to collect this information with any accuracy.

Table 71a:Use of inorganic fertilizer for the top 7 monsoon crops by region

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Paddy/rice	66	42.0%	64	76.2%	133	63.0%	263	58.2%	69	45.1%	95	44.0%	427	52.0%
Corn/maize	133	52.2%					133	52.2%	48	59.3%	1	100%	182	54.0%
Sesame seed	4	36.4%	124	86.7%			128	82.6%	42	66.7%			170	78.0%
Groundnut	12	66.7%	62	76.5%			74	74.7%	18	50.0%			92	68.1%
Pigeon pea	22	81.5%	35	48.6%			57	57.6%	24	51.1%			81	55.5%
Potato	35	92.1%					35	92.1%	8	72.7%			43	87.8%
Chilli	3	100%	7	53.8%			10	62.5%	19	86.4%			29	76.3%
Total	275	54.0%	292	74.3%	133	62.7%	700	62.8%	228	55.2%	96	44.2%	1024	58.7%

[50] It is unlikely that crops such as potatoes and corn/maize would be *transplanted* as seedlings – this would require unnecessarily large amounts of labour for no benefit in terms of yield.

Table 71b: Use of organic fertilizer for the top 7 monsoon crops by region

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	Freq	%	Freq	%	Freq	%	Freq	Freq	%	Freq	%	Freq	%	Freq
Paddy/rice	58	36.9%	69	82.1%	97	46.0%	224	49.6%	68	44.4%	52	24.1%	344	41.9%
Corn/maize	59	23.1%					59	23.1%	29	35.8%			88	26.1%
Sesame seed	9	81.8%	134	93.7%			143	92.3%	56	88.9%			199	91.3%
Groundnut	14	77.8%	73	90.1%			87	87.9%	31	86.1%			118	87.4%
Pigeon pea	18	66.7%	64	88.9%			82	82.8%	39	83.0%			121	82.9%
Potato	27	71.1%					27	71.1%	6	54.5%			33	67.3%
Chilli	2	66.7%	13	100%			15	93.8%	18	81.8%			33	86.8%
Total	187	36.7%	353	89.8%	97	46.0%	637	57.2%	247	59.8%	52	24.1%	936	53.7%

As with fertilizers, there are many types of pesticides that can be applied in several ways at different rates. The questionnaire did not attempt to explore this in great detail only to understand the incidence of pesticide use. The questionnaire separated pesticides into three types: insecticides, fungicides and herbicides. However it is not certain that all respondents would be able to distinguish between these three. Having expressed this reservation, it is as expected that insecticides were the most commonly used among the three in 2010 monsoon crops (27% of households), followed by fungicides (10%) and herbicides (5%) (Tables 72a, 72b and 72c). Groundnut, potato and chilli were the crops where households were most likely to apply insecticides (over half of all households) and fungicides (over a quarter of all households). There was little pesticide use of any type reported for growing corn/maize.

Table 72a:Use of insecticides for the top 7 monsoon crops by region

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	Freq	%	Freq	%	Freq	%	Freq	Freq	%	Freq	%	Freq	%	Freq
Paddy/rice	27	17.2%	27	32.1%	66	31.3%	120	26.5%	41	26.8%	28	13.0%	189	23.0%
Corn/maize	23	9.0%					23	9.0%	8	9.9%	1	100%	32	9.5%
Sesame seed	1	9.1%	62	43.4%			63	40.6%	18	28.6%			81	37.2%
Groundnut	2	11.1%	54	66.7%			56	56.6%	20	55.6%			76	56.3%
Pigeon pea	10	37.0%	22	30.6%			32	32.3%	8	17.0%			40	27.4%
Potato	29	76.3%					29	76.3%	5	45.5%			34	69.4%
Chilli	1	33.3%	7	53.8%			8	50.0%	16	72.7%			24	63.2%
Total	93	18.3%	172	43.8%	66	31.3%	331	29.7%	116	28.1%	29	13.4%	476	27.3%

Table 72b:Use of fungicides for the top 7 monsoon crops by region

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	Freq	%	Freq	%	Freq	%	Freq	Freq	%	Freq	%	Freq	%	Freq
Paddy/rice	6	3.8%	12	14.3%	24	11.4%	42	9.3%	16	10.5%	5	2.3%	63	7.7%
Corn/maize	3	1.2%					3	1.2%	2	2.5%			5	1.5%
Sesame seed			25	17.5%			25	16.1%	4	6.3%			29	13.3%
Groundnut			28	34.6%			28	28.3%	9	25.0%			37	27.4%
Pigeon pea	2	7.4%	9	12.5%			11	11.1%	1	2.1%			12	8.2%
Potato	12	31.6%					12	31.6%	2	18.2%			14	28.6%
Chilli			4	30.8%			4	25.0%	7	31.8%			11	28.9%
Total	23	4.5%	78	19.8%	24	11.4%	125	11.2%	41	9.9%	5	2.3%	171	9.8%

Table 72c:Use of herbicides for the top 7 monsoon crops by region

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	Freq	%	Freq	%	Freq	%	Freq	Freq	%	Freq	%	Freq	%	Freq
Paddy/rice	9	5.7%	3	3.6%	27	12.8%	39	8.6%	13	8.5%	7	3.2%	59	7.2%
Corn/maize	4	1.6%					4	1.6%	1	1.2%			5	1.5%
Sesame seed			2	1.4%			2	1.3%	1	1.6%			3	1.4%
Groundnut	1	5.6%	14	17.3%			15	15.2%	2	5.6%			17	12.6%
Pigeon pea			3	4.2%			3	3.0%	1	2.1%			4	2.7%
Potato	3	7.9%					3	7.9%	1	9.1%			4	8.2%
Chilli			1	7.7%			1	6.3%	1	4.5%			2	5.3%
Total	17	3.3%	23	5.9%	27	12.7%	67	6.0%	20	4.8%	7	3.2%	94	5.4%

5.9.2 Post-monsoon crops

A similar analysis was conducted for the responses to the cultivation of post-monsoon crops that were harvested in early 2011.There were 8 crops that were the *major crops* planted by over 50 households as post-monsoon crops; a greater diversity of crops compared with the monsoon plantings that were dominated by rice production. Groundnuts (peanuts) were the most widely planted; 16% of the households that grew post-monsoon crops grew groundnuts. Rice was the next most common but was not widely planted outside the Delta/Coastal Zone where it was planted by 68% of households growing a post-monsoon crop. Chilli dominated the post-monsoon crops grown in Giri-affected villages (66%).

Table 73: Top 8 most planted crops after the 2010 monsoon season (*summer crops*) by region

	Hilly N=256		Dry N=304		Delta/Coastal N=82		LIFT villages N=642		Control N=229		Giri N=53		Total N=924	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Groundnut	16	6.3%	85	28.0%	5	6.1%	106	17.0%	36	15.7%	2	3.8%	144	15.6%
Paddy/rice	1	0.4%	18	5.9%	56	68.3%	75	12.0%	24	10.5%			99	10.7%
Green gram			41	13.5%	3	3.7%	44	7.1%	24	10.5%			68	7.4%
Pigeon pea	9	3.5%	30	9.9%			39	6.3%	21	9.2%			60	6.5%
Onion	14	5.5%	37	12.2%			51	8.2%	8	3.5%			59	6.4%
Chilli	3	1.2%	6	2.0%	9	11.0%	18	2.9%	6	2.6%	35	66.0%	59	6.4%
Garlic	43	16.8%	2	0.7%			45	7.2%	7	3.1%			52	5.6%
Chick pea			34	11.2%			34	5.4%	17	7.4%			51	5.5%

Note: Percentages are the percent of households growing that crop relative to all who planted post-monsoon crops.

Estimated areas and yields were calculated for these 8 crops based on farmer recall of areas planted and volumes harvested. See section 5.9.1 for a discussion of problems with these estimates.

Table 74: Average area planted and yield for the top 8 most planted post-monsoon crops[51]

	Number of HHs cultivating each crop	Mean area sown (acres)	Mean quantity harvested (pounds)	Mean yield (pounds/acre)	Mean yield (MT/ha)
Groundnut	144	2.97	1544.20	611	0.68
Paddy/rice	99	4.72	13648.06	2677	3.00
Green gram	68	4.63	1986.30	399	0.45
Pigeon pea	60	3.89	1500.60	473	0.53
Onion	59	1.34	7027.22	6075	6.81
Chilli	59	1.02	571.01	549	0.62
Garlic	52	1.72	2740.85	1897	2.13
Chick pea	51	2.06	1294.76	598	0.67

Table 75 presents the average areas to each post-monsoon crop in each region for the households that planted these crops. Despite the small number of households that planted post-monsoon crops in the Delta/Coastal Zone (see Table 62), this zone had the largest average area sown (5.27 acres). This area is still much less than the average area sown for 2010 monsoon crops in the Delta/Coastal Zone (15.47 acres). Households in the Giri-affected areas not only were the least likely to plant a post-monsoon crop, but also had the smallest average area sown (1 acre). In terms of crops, the largest average area was planted to rice followed closely by green gram.

Table 75: Average area planted for the top 8 most planted post-monsoon crops by region (acres)

	Hilly	Dry	Delta/Coastal	LIFT Villages	Control	Giri	Total
Groundnut	1.77	3.58	1.90	3.23	2.29	1.75	2.97
Paddy/rice	2.00	1.35	6.23	5.01	3.81	.	4.72
Green gram	.	5.02	7.00	5.15	3.68	.	4.63

[51] As mentioned earlier, the form of the harvested product affects its volume and volume is the common way farmers measure production (e.g., baskets). For the 8 post-harvest monsoon crops the form of product was as follows: groundnut in the shell, rice in the husk, green gram removed from the pod, pigeon pea removed from the pod, onions loose with tops removed, chilli as fresh fruits, garlic as loose heads with tops removed, and chickpeas removed from the pod.

	Hilly	Dry	Delta/Coastal	LIFT Villages	Control	Giri	Total
Pigeon pea	5.06	3.57	.	3.91	3.85	.	3.89
Onion	1.16	1.21	.	1.20	2.25	.	1.34
Chilli	.67	2.08	.59	1.10	1.25	.93	1.02
Garlic	1.73	2.00	.	1.74	1.57	.	1.72
Chick pea	.	2.35	.	2.35	1.47	.	2.06
Total	1.96	3.09	5.27	3.24	2.83	.98	3.00

In quite a similar pattern to responses on the yields from the 2010 monsoon crops, 42% of all respondents whose households grew crops after the 2010 monsoon harvest believed the yields were worse than average, 37% believed that yields were average, and 21% better than average (see Table 76). Again the large majority of respondents from Giri-affected areas believed yields to have been worse than average (68%) and only 8% considered yields to have been better than average. In terms of crops, garlic was considered to have been average or better than average with very few growers reporting yields that were worse than average. Green gram yields were however considered worse than average by nearly two-thirds of growers.

Table 76: Comparison of yields of the 2011 post monsoon crops compared with the respondent's average yield for post-monsoon crops in each region

		Paddy/rice		Groundnut		Pigeon pea		Chick pea		Green gram		Onion		Chilli		Garlic		Total	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	
Better	Hilly			5	31.3	3	33.3					4	28.6	1	33.3	12	27.9	25	29.1
	Dry	1	5.6	22	25.9	7	23.3	6	17.6	8	19.5	9	24.3	3	50.0	1	50.0	57	22.5
	Delta/Coast	9	16.1											1	11.1			10	13.7
	LIFT villages	10	13.3	27	25.5	10	25.6	6	17.6	8	18.2	13	25.5	5	27.8	13	28.9	92	22.3
	Control	3	12.5	7	19.4	9	42.9	2	11.8	2	8.3	2	25.0	2	33.3	3	42.9	30	21.0
	Giri													3	8.6			3	8.1
	Total	13	13.1	34	23.6	19	31.7	8	15.7	10	14.7	15	25.4	10	16.9	16	30.8	125	21.1
Same	Hilly	1	100	6	37.5	3	33.3					4	28.6	1	33.3	23	53.5	38	44.2
	Dry	11	61.1	34	40.0	11	36.7	15	44.1	7	17.1	14	37.8	2	33.3	1	50.0	95	37.5
	Delta/Coast	23	41.1	3	60.0					2	66.7			7	77.8			35	47.9
	LIFT villages	35	46.7	43	40.6	14	35.9	15	44.1	9	20.5	18	35.3	10	55.6	24	53.3	168	40.8
	Control	6	25.0	8	22.2	7	33.3	4	23.5	6	25.0	4	50.0	2	33.3	4	57.1	41	28.7
	Giri			1	50.0									8	22.9			9	24.3
	Total	41	41.4	52	36.1	21	35.0	19	37.3	15	22.1	22	37.3	20	33.9	28	53.8	218	36.8
Worse	Hilly			5	31.3	3	33.3					6	42.9	1	33.3	8	18.6	23	26.7
	Dry	6	33.3	29	34.1	12	40.0	13	38.2	26	63.4	14	37.8	1	16.7			101	39.9
	Delta/Coast	24	42.9	2	40.0					1	33.3			1	11.1			28	38.4
	LIFT villages	30	40.0	36	34.0	15	38.5	13	38.2	27	61.4	20	39.2	3	16.7	8	17.8	152	36.9
	Control	15	62.5	21	58.3	5	23.8	11	64.7	16	66.7	2	25.0	2	33.3			72	50.3
	Giri			1	50.0									24	68.6			25	67.6
	Total	45	45.5	58	40.3	20	33.3	24	47.1	43	63.2	22	37.3	29	49.2	8	15.4	249	42.1

Households that planted post-monsoon crops were asked about their agricultural practices and the same information was collected as for the 2010 monsoon crops covering intercropping, seed sources, soil tillage, planting methods, and use of fertilizers and pesticides.

Rice was rarely intercropped as one would expect. Similarly, chilli and onion were seldom planted with other crops (see Table 77). By contrast, garlic and pulses were frequently intercropped. Intercropping obviously affects yields; households were asked to recall the yields of the most important crop for each season but not the full rangeof crops grown by each household so the combined yields of crop plus intercrop cannot be calculated.

Table 77. Percent of the top 8 post-monsoon crops that were intercropped by region

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Groundnut	4	25.0	38	44.7	2	40.0	44	41.5	18	50.0			62	43.1
Paddy/sticky rice	1	100			3	5.4	4	5.3	3	12.5			7	7.1
Green gram			22	53.7	1	33.3	23	52.3	18	75.0			41	60.3

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Pigeon pea	8	88.9	11	36.7			19	48.7	14	66.7			33	55.0
Onion	1	7.1	3	8.1			4	7.8	5	62.5			9	15.3
Chilli	3	100			2	22.2	5	27.8	1	16.7	1	2.9	7	11.9
Garlic	16	37.2	1	50.0			17	37.8	5	71.4			22	42.3
Chick pea			12	35.3			12	35.3	1	5.9			13	25.5
Total	33	38.4	87	34.4	8	11.0	128	31.1	65	45.5	1	2.7	194	32.8

As for the monsoon crops, the seed for the post-monsoon crops was predominantly saved seed by the farmers. Nearly three-quarters of all who grew the top 8 post-monsoon crops used their own seed (see Table 78a).

Table 78a: Source of seed for the top 8 post-monsoon crops – own seed

	Hilly		Dry		Delta/Coast		LIFT Villages		Control		Giri		Total	
	Freq	%	Freq	%	Freq	%	Freq	Freq	%	Freq	%	Freq	%	Freq
Groundnut	12	75.0	66	77.6	2	40.0	80	75.5	20	55.6	2	100	102	70.8
Paddy/rice	1	100	17	94.4	39	69.6	57	76.0	16	66.7			73	73.7
Green gram			26	63.4	1	33.3	27	61.4	22	91.7			49	72.1
Pigeon pea	8	88.9	24	80.0			32	82.1	18	85.7			50	83.3
Onion	14	100	20	54.1			34	66.7	5	62.5			39	66.1
Chilli	1	33.3	6	100	4	44.4	11	61.1	4	66.7	29	82.9	44	74.6
Garlic	40	93.0	2	100			42	93.3	6	85.7			48	92.3
Chick pea			18	52.9			18	52.9	13	76.5			31	60.8
Total	76	88.4	179	70.8	46	63.0	301	73.1	104	72.7	31	83.8	436	73.6

Improved seed was not widely used; only 12% of households sampled used improved seed for their main post-monsoon crops (see Table 78b). The largest proportion of farming households that used improved seeds were onion producers (19%). Rice growers were the next most likely to use improved seed (15%), still preferring to save their own seed, presumably well-established, preferred varieties.

Table 78b: Source of seed for top 8 post-monsoon crops – improved seed (purchased/provided)

	Hilly		Dry		Delta/Coast		LIFT Villages		Control		Giri		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Groundnut	2	12.5%	7	8.2%	2	40.0%	11	10.4%	5	13.9%			16	11.1%
Paddy/rice			1	5.6%	10	17.9%	11	14.7%	4	16.7%			15	15.2%
Green gram			6	14.6%	2	66.7%	8	18.2%	1	4.2%			9	13.2%
Pigeon pea	1	11.1%	2	6.7%			3	7.7%	2	9.5%			5	8.3%
Onion			8	21.6%			8	15.7%	3	37.5%			11	18.6%
Chilli	1	33.3%			2	22.2%	3	16.7%	1	16.7%	1	2.9%	5	8.5%
Garlic	3	7.0%					3	6.7%	1	14.3%			4	7.7%
Chick pea			4	11.8%			4	11.8%					4	7.8%
Total	7	8.1%	28	11.1%	16	21.9%	51	12.4%	17	11.9%	1	2.7%	69	11.7%

Farming households also purchased or were provided seed that was not necessarily of improved or high-yielding varieties (17% of the total sample). The use of this seed was slightly more common that use of seed that was considered 'improved' by the respondents questioned (see Table 78c).

Table 78c: Source of seed for top 8 post-monsoon crops – unimproved seed (purchased/provided)

	Hilly		Dry		Delta/Coast		LIFT Villages		Control		Giri		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Groundnut	2	12.5%	14	16.5%	1	20.0%	17	16.0%	11	30.6%	2	100%	30	20.8%
Paddy/rice					7	12.5%	7	9.3%	5	20.8%			12	12.1%
Green gram			11	26.8%			11	25.0%	1	4.2%			12	17.6%
Pigeon pea			5	16.7%			5	12.8%	2	9.5%			7	11.7%
Onion			10	27.0%			10	19.6%					10	16.9%
Chilli	2	66.7%			3	33.3%	5	27.8%			5	14.3%	10	16.9%
Garlic														
Chick pea			13	38.2%			13	38.2%	4	23.5%			17	33.3%
Total	4	4.7%	53	20.9%	11	15.1%	68	16.5%	23	16.1%	7	18.9%	98	16.6%

Animal traction was the major means of tilling the soil prior to planting (Table 79). Seventy percent of households planted their main post-monsoon crops using animals. Only for the summer (post-monsoon) rice crop were power tillers more commonly used than draught animals (59% of summer paddy growers used power tillers). Summer rice crops are generally higher yielding and gain higher prices. Furthermore, in the Delta and other coastal areas, growing summer paddy often requires speedy soil preparation following the monsoon rice harvest in order to take advantage of limited time before saline water intrusion later in the dry season. These reasons may contribute to the higher proportionate use of power tillers in post-monsoon rice (59%) compared with monsoon rice (15%).[52]

In the Hilly Zone, similar to the monsoon crop, there was considerable hand digging for soil preparation. Looking at all 8 post-monsoons together, hand digging was the most common means for soil tillage in the Hilly Zone (41 cases), just eclipsing the use of animals (38 cases).

Table 79: Equipment used for tilling the soil for the top 8 post-monsoon crops by region

		Hilly		Dry		Delta/Coastal		LIFTvillages		Control		Giri		Total	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Groundnut	Manpower	8	50.0	1	1.2			9	8.5	4	11.1			13	9.0
	Animal	8	50.0	84	98.8	3	60.0	95	89.6	29	80.6	2	100	126	87.5
	Power tiller					2	40.0	2	1.9	3	8.3			5	3.5
	Tractor														
Paddy/rice /sticky rice	Manpower	1	100	1	5.6	2	3.6	4	5.3	3	12.5			7	7.1
	Animal			15	83.3	8	14.3	23	30.7	2	8.3			25	25.3
	Power tiller			2	11.1	40	71.4	42	56.0	16	66.7			58	58.6
	Tractor					6	10.7	6	8.0	3	12.5			9	9.1
Green gram	Manpower														
	Animal			38	92.7			38	86.4	21	87.5			59	86.8
	Power tiller			3	7.3	2	66.7	5	11.4	3	12.5			8	11.8
	Tractor					1	33.3	1	2.3					1	1.5
Pigeon pea	Manpower	1	11.1	1	3.3			2	5.1	4	19.0			6	10.0
	Animal	6	66.7	29	96.7			35	89.7	17	81.0			52	86.7
	Power tiller	2	22.2					2	5.1					2	3.3
	Tractor														
Onion	Manpower	14	100					14	27.5	7	87.5			21	35.6
	Animal			37	100			37	72.5	1	12.5			38	64.4
	Power tiller														
	Tractor														
Chilli	Manpower	3	100	1	16.7	2	22.2	6	33.3	1	16.7	10	28.6	17	28.8
	Animal			5	83.3	6	66.7	11	61.1	3	50.0	25	71.4	39	66.1
	Power tiller					1	11.1	1	5.6	2	33.3			3	5.1
	Tractor														
Garlic	Manpower	14	32.6					14	31.1	1	14.3			15	28.8
	Animal	24	55.8	2	100			26	57.8	6	85.7			32	61.5
	Power tiller	5	11.6					5	11.1					5	9.6
	Tractor														
Chick pea	Manpower			2	5.9			2	5.9					2	3.9
	Animal			28	82.4			28	82.4	17	100			45	88.2
	Power tiller			4	11.8			4	11.8					4	7.8
	Tractor														
TOTAL	Manpower	41	47.7	6	2.4	4	5.5	51	12.4	20	14.0	10	27.0	81	13.7
	Animal	38	44.2	238	94.1	17	23.3	293	71.1	96	67.1	27	73.0	416	70.3
	Power tiller	7	8.1	9	3.6	45	61.6	61	14.8	24	16.8	0	0.0	85	14.4
	Tractor	0	0.0	0	0.0	7	9.6	7	1.7	3	2.1	0	0.0	10	1.7
	Any form	86	100	253	100	73	100	412	100	143	100	37	100	592	100

Unlike the monsoon rice crop which was predominately transplanted, two-thirds of post-monsoon rice (summer paddy) was seeded by broadcasting. This may again be a function of the need for very quick establishment following the monsoon harvest to take advantage of the small window for a second rice

[52] Growers with soil and site conditions suitable for a second rice crop (summer paddy) would have more money to purchase and maintain power tillers and would have more reason to use them to ensure timely planting following the monsoon harvest.

crop.[53] Green gram was also predominantly seeded by broadcasting (78%). All of the other top 8 post-monsoon crops were reportedly 'transplanted' (Table 80).[54]

Table 80: Methods used for sowing crops for the top 8 post-monsoon crops by region

		Hilly		Dry		Delta/Coast		LIFT villages		Control		Giri		Total	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Groundnut	Broadcast	5	31.3	22	25.9	2	40.0	29	27.4	12	33.3			41	28.5
	Seeder			13	15.3	2	40.0	15	14.2	4	11.1			19	13.2
	Transplant	11	68.8	50	58.8	1	20.0	62	58.5	20	55.6	2	100	84	58.3
Paddy/rice	Broadcast					46	82.1	46	61.3	21	87.5			67	67.7
	Seeder					2	3.6	2	2.7					2	2.0
	Transplant	1	100	18	100	8	14.3	27	36.0	3	12.5			30	30.3
Green gram	Broadcast			32	78.0	3	100	35	79.5	18	75.0			53	77.9
	Seeder			3	7.3			3	6.8	1	4.2			4	5.9
	Transplant			6	14.6			6	13.6	5	20.8			11	16.2
Pigeon pea	Broadcast	1	11.1	12	40.0			13	33.3	12	57.1			25	41.7
	Seeder			3	10.0			3	7.7					3	5.0
	Transplant	8	88.9	15	50.0			23	59.0	9	42.9			32	53.3
Onion	Broadcast			3	8.1			3	5.9					3	5.1
	Seeder			2	5.4			2	3.9					2	3.4
	Transplant	14	100	32	86.5			46	90.2	8	100			54	91.5
Chilli	Broadcast	2	66.7					2	11.1			5	14.3	7	11.9
	Seeder											2	5.7	2	3.4
	Transplant	1	33.3	6	100	9	100	16	88.9	6	100	28	80.0	50	84.7
Garlic	Broadcast	15	34.9					15	33.3	1	14.3			16	30.8
	Seeder														
	Transplant	28	65.1	2	100			30	66.7	6	85.7			36	69.2
Chick pea	Broadcast			15	44.1			15	44.1	8	47.1			23	45.1
	Seeder														
	Transplant			19	55.9			19	55.9	9	52.9			28	54.9

Respondents reported greater use of both inorganic and organic fertilizer in growing their post-monsoon crops than their 2010 monsoon crops (Tables 81a and 81b). Seventy-three percent (73%) of households planting the top 8 post-monsoon crops used inorganic fertilizer compared with 59% of households planting monsoon crops (Table 71a); and 69% used organic fertilizer compared with 54% growing monsoon crops (Table 71b). The difference in fertilizer use is particularly pronounced in rice production with 92% of growers planting summer paddy using inorganic fertilizer compared with only 52% of growers of monsoon paddy. Again this may be a factor of the relative benefit in using fertilizer for the higher yielding and higher value summer paddy crops.

Table 81a: Use of inorganic fertilizer for the top 8 post-monsoon crops by region

	Hilly		Dry		Delta/Coast		LIFT Villages		Control		Giri		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Groundnut	5	31.3%	62	72.9%	3	60.0%	70	66.0%	23	63.9%			93	64.6%
Paddy/rice			18	100%	52	92.9%	70	93.3%	21	87.5%			91	91.9%
Green gram			32	78.0%	3	100%	35	79.5%	20	83.3%			55	80.9%
Pigeon pea	7	77.8%	21	70.0%			28	71.8%	14	66.7%			42	70.0%
Onion	10	71.4%	30	81.1%			40	78.4%	5	62.5%			45	76.3%
Chilli			6	100%	7	77.8%	13	72.2%	4	66.7%	21	60.0%	38	64.4%
Garlic	36	83.7%	2	100%			38	84.4%	7	100%			45	86.5%
Chick pea			12	35.3%			12	35.3%	11	64.7%			23	45.1%
Total	58	67.4%	183	72.3%	65	89.0%	306	74.3%	105	73.4%	21	56.8%	432	73.0%

Organic fertilizer was less widely used than inorganic fertilizer. This was the case in rice production where 92% of households used inorganic fertilizer and 58% of households used organic fertilizer.

[53] Transplanting is a much slower process for planting and requires much more labour.
[54] See discussion in footnote 50.

Table 81b: Use of organic fertilizer for the top 8 post-monsoon crops by region

	Hilly		Dry		Delta/Coast		LIFT Villages		Control		Giri		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Groundnut	2	12.5%	77	90.6%	2	40.0%	81	76.4%	24	66.7%			105	72.9%
Paddy/rice			18	100%	26	46.4%	44	58.7%	13	54.2%			57	57.6%
Green gram			33	80.5%	1	33.3%	34	77.3%	21	87.5%			55	80.9%
Pigeon pea	1	11.1%	24	80.0%			25	64.1%	19	90.5%			44	73.3%
Onion	12	85.7%	34	91.9%			46	90.2%	2	25.0%			48	81.4%
Chilli			5	83.3%	6	66.7%	11	61.1%	2	33.3%	10	28.6%	23	39.0%
Garlic	33	76.7%	2	100%			35	77.8%	6	85.7%			41	78.8%
Chick pea			22	64.7%			22	64.7%	15	88.2%			37	72.5%
Total	48	55.8%	215	85.0%	35	47.9%	298	72.3%	102	71.3%	10	27.0%	410	69.3%

Compared with the 2010 monsoon crops, households planting post-monsoon crops more frequently used insecticides (51% compared with 27%), fungicides (21% compared with 10%) and herbicides (9% compared with 5%) (Tables 82a, 82b and 82c compared with Tables 72a, 72b and 72c). The reasons for this difference were not investigated.[55]Rice was the crop with the greatest used of pesticides.

Table 82a: Use of insecticides for the top 8 post-monsoon crops by region

	Hilly		Dry		Delta/Coast		LIFT Villages		Control		Giri		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Groundnut			57	67.1%	1	20.0%	58	54.7%	11	30.6%			69	47.9%
Paddy/rice			9	50.0%	36	64.3%	45	60.0%	21	87.5%			66	66.7%
Green gram			22	53.7%	2	66.7%	24	54.5%	8	33.3%			32	47.1%
Pigeon pea	6	66.7%	13	43.3%			19	48.7%	6	28.6%			25	41.7%
Onion	2	14.3%	24	64.9%			26	51.0%	1	12.5%			27	45.8%
Chilli			6	100%	5	55.6%	11	61.1%	5	83.3%	17	48.6%	33	55.9%
Garlic	12	27.9%	2	100%			14	31.1%					14	26.9%
Chick pea			25	73.5%			25	73.5%	10	58.8%			35	68.6%
Total	20	23.3%	158	62.5%	44	60.3%	222	53.9%	62	43.4%	17	45.9%	301	50.8%

Table 82b: Use of fungicides for the top 8 post-monsoon crops by region

	Hilly		Dry		Delta/Coast		LIFT Villages		Control		Giri		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Groundnut			22	25.9%			22	20.8%	4	11.1%			26	18.1%
Paddy/rice			5	27.8%	14	25.0%	19	25.3%	13	54.2%			32	32.3%
Green gram			7	17.1%	1	33.3%	8	18.2%	1	4.2%			9	13.2%
Pigeon pea	2	22.2%	5	16.7%			7	17.9%					7	11.7%
Onion			16	43.2%			16	31.4%					16	27.1%
Chilli			5	83.3%	3	33.3%	8	44.4%	2	33.3%	1	2.9%	11	18.6%
Garlic	8	18.6%	1	50.0%			9	20.0%					9	17.3%
Chick pea			12	35.3%			12	35.3%	1	5.9%			13	25.5%
Total	10	11.6%	73	28.9%	18	24.7%	101	24.5%	21	14.7%	1	2.7%	123	20.8%

Table 82c: Use of herbicides for the top 8 post-monsoon crops by region

	Hilly		Dry		Delta/Coast		LIFT Villages		Control		Giri		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Groundnut			4	4.7%			4	3.8%					4	2.8%
Paddy/rice					14	25.0%	14	18.7%	12	50.0%			26	26.3%
Green gram			3	7.3%			3	6.8%	1	4.2%			4	5.9%
Pigeon pea			1	3.3%			1	2.6%					1	1.7%
Onion			12	32.4%			12	23.5%					12	20.3%
Chilli			2	33.3%			2	11.1%					2	3.4%
Garlic	1	2.3%					1	2.2%					1	1.9%
Chick pea			2	5.9%			2	5.9%					2	3.9%
Total	1	1.2%	24	9.5%	14	19.2%	39	9.5%	13	9.1%			52	8.8%

[55] However it may result from the need to make best use of the remaining soil moisture or irrigation water resources, and also the increased effectiveness of pesticides in the dry season.

5.9.3 Constraints to crop production

Respondent's whose households grew crops (monsoon or post-monsoon) were asked about the constraints to their crop production; the limiting factors to producing more (Table 83). Multiple responses were recorded. By far the most common constraint overall was the lack of inputs or lack of money to buy them. These included fertilizer, seeds, labour (household and hired labour) and pesticides. Limited capital equipment (tools, draft animals, mechanical power) and land were also common constraints. Many of these can be addressed with access to credit and appropriate investment. However, there were also other constraints such as the weather, crop pests and diseases, salinity and soil acidity that are less easily influenced through investment. Low prices and lack of skills and knowledge were less frequently mentioned by respondents.

Regional differences were important. The Dry Zone, coming out of several years of drought, emphasized constraints imposed by the weather (63% of respondents). Twenty-five percent of respondents from the Delta/Coastal Zone mentioned lack of draught animals or mechanical power for tillage.

Table 83: Constraints to household crop production by region

	Hilly		Dry		Delta & Coastal		Giri-affected		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
lack of money to buy the necessary inputs	347	43.0%	316	50.0%	200	62.7%	156	65.0%	1019	51.0%
lack of fertilizer (or too expensive)	349	43.2%	290	45.9%	107	33.5%	97	40.4%	843	42.2%
bad/unreliable weather (incl too little or too much rain)	225	27.9%	400	63.3%	58	18.2%	68	28.3%	751	37.6%
lack of seeds (or too expensive)	150	18.6%	129	20.4%	55	17.2%	46	19.2%	380	19.0%
crop pests and disease	130	16.1%	87	13.8%	83	26.0%	21	8.8%	321	16.1%
lack of casual labour available locally (or too expensive)	88	10.9%	128	20.3%	73	22.9%	13	5.4%	302	15.1%
lack of household labour	119	14.7%	109	17.2%	26	8.2%	29	12.1%	283	14.2%
lack of water resources or irrigation infrastructure	126	15.6%	93	14.7%	34	10.7%	30	12.5%	283	14.2%
lack of other tools and equipment (or too expensive)	80	9.9%	129	20.4%	46	14.4%	26	10.8%	281	14.1%
lack of pesticides (or too expensive)	92	11.4%	112	17.7%	36	11.3%	27	11.2%	267	13.4%
lack of land	111	13.8%	64	10.1%	39	12.2%	36	15.0%	250	12.5%
lack of draught/ mechanical power (or too expensive)	41	5.1%	63	10.0%	78	24.5%	18	7.5%	200	10.0%
low soil fertility/poor soil structure etc	98	12.1%	51	8.1%	24	7.5%	19	7.9%	192	9.6%
low prices for the agricultural crops grown	22	2.7%	41	6.5%	11	3.4%	1	0.4%	75	3.8%
Salinity	3	0.4%	3	0.5%	12	3.8%	46	19.2%	64	3.2%
lack of knowledge, skills or experience	18	2.2%	20	3.2%	8	2.5%	11	4.6%	57	2.9%
animal damage	37	4.6%			2	0.6%	2	0.8%	41	2.1%
not interested/grows enough/too risky to grow more	7	0.9%	5	0.8%	1	0.3%	3	1.2%	16	0.8%
soil acidity	1	0.1%							1	0.1%
Total	807	100%	632	100%	319	100%	240	100%	1998	100%

The FGDs confirmed many of these constraints to agricultural production. Paddy producers in Coastal and Delta Zones reported a variety of problems. Lack of money to purchase inputs (such as fertilizer, pesticides, seed, and even fuel for power tillers) was mentioned in nearly all FGD villages where paddy was grown. Associated with this, high interest rates charged by money lenders (8%/month) was mentioned in the Bogale village. Problems with seed germination were mentioned in two villages in

Rakhine State, both withpurchased seeds and those provided by an NGO.[56] Pest infestation was mentioned in four FGD villages, particularly rodents damaging paddy crops. Lack of draft animals following Cyclones Giri and Nargis was mentioned in two villages (Myebon and Bogale townships). The village in Myebonreported that only one third of the draft animals remained after Giri. Moreover, one FGD in Bogale reported that it was expensive to hire power tillers.

Marketing was another common problem. Two villages reported that there were few local paddy buyers and it was expensive to market their paddy in town (with the cost of transport and associated labour). The village in Kone Gyi village, Labutta, reported that there were fewer buyers visiting the village now that their rice output had fallen post-Nargis. Myoma village in Gwa, Rakhine, reported that diversification was constrained by the limited local market for other crops; moreover, they would need water pumps to irrigate vegetables in the dry season.

Three villages, two in Rakhine and one in Ayeyarwaddy, reported problems with inundation of paddy fields. Participants cited the need to reinforce embankments to prevent flooding and intrusion of saline water.

Agricultural producers in the Hilly and Dry Zone FGDs also reported problems and constraints their agriculture. These constraints were more diverse, in part due to the variety of crops grown and the greater diversity of agro-ecological zones and social contexts. Again lack of money to purchase the necessary inputs was cited as a common problem among nearly all villages (inputs such as pesticides, seeds, and fertilizer). Shortage of money to rent tractors and power tillers (that were considered to be expensive) and to hire labour for sowing and harvesting crops were also mentioned. This lack of money to purchase inputs (seeds and fertilizer) forced producers to borrow from brokers (crop buyers) and sell exclusively to them at low prices.[57] Again pest infestations were common problems, along with the high cost of pesticides and the poor control that they provided. Poor and irregular rainfall was reported in the FGD villages in Chin and Mandalay reducing yields and the quality of crops. Lack of land was mentioned in three villages (in Chin, Shan and Magwe), and the landless and land-poor could not afford to rent land (Shan). Poor soil was reported in Chin and low yields of paddy, potato and maize was reported in Shan. Shortage of casual labour and increasing costs of hiring casual labour were reported in some villages, but not in others where the FGDs reported ample labour.[58]

Overall, constraints were generally associated with low intensity production techniques that could be addressed with increased availability of credit, technical advice and improved access to markets.[59] However, there were also structural problems related to access to land, and problems associated with lack of infrastructure for irrigation and water control (embankments).

5.10Marketing

A variety of questions related to marketing of crops were also asked to the sample of respondents. Overall, 38% of all respondent households sold crops during the previous 12 months. The proportion of households selling crops varied widely by region: as many as 54% of households in the Hilly Zone sold crops but less than 10% sold crops in the Giri-affected areas (see Table 84a). As may be expected sale of crops is associated with land ownership to grow crops, as well as recent natural disasters that reduce crop production and hence marketable surpluses. These factors may well explain the small proportion of households in the Delta/Coastal (27%) and Giri-affected areas (10%) that sold crops in the previous 12 months.

[56] The FGD in Ngwe Twin Tu village, Myebon, Rakhine reported that the paddy seeds provided to them by an NGO only had 50% germination rate.
[57] The FGD in Myay Nio Kone, Nyaungshwe, Shan State.
[58] Shortages were mentioned by farmers in the FGD villages in Rahkine (Gwa township) and Chin. However, the FGDs in villages in Shan, Mandalay and Magwe reported that there was ample casual labour available.
[59] New market opportunities not just improved physical access may also address some of the constraints mentioned.

Table 84a:Frequency of households selling any crops during the previous 12 months by region

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Yes	435	54.4%	414	51.8%	214	26.8%	1063	44.3%	386	48.2%	77	9.6%	1526	38.2%
No	365	45.6%	386	48.2%	586	73.2%	1337	55.7%	414	51.8%	723	90.4%	2474	61.8%
Total	800	100%	800	100%	800	100%	2400	100%	800	100%	800	100%	4000	100%

Table 84b: Frequency of households selling any crops during the previous 12 months by region and land holding size

Land holding size	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	Count	%*	Count	%*	Count	%*	Count	%*	Count	%*	Count	%*	Count	%*
no land	45	21.5%	22	6.5%	39	6.8%	106	9.4%	30	9.3%	9	1.6%	145	7.3%
<1 acre	17	54.8%	14	70.0%	3	42.9%	34	58.6%	15	68.2%	1	10.0%	50	55.6%
1-2 acres	152	52.8%	65	63.7%	5	45.5%	222	55.4%	90	53.9%	14	22.2%	326	51.7%
2+ to 5	145	78.4%	156	90.2%	25	61.0%	326	81.7%	127	82.5%	27	27.0%	480	73.5%
5+ to 10	60	88.2%	92	92.9%	63	91.3%	215	91.1%	72	92.3%	15	25.0%	302	80.7%
10+ to 15	9	90.0%	30	100.0%	26	83.9%	65	91.5%	18	94.7%	5	45.5%	88	87.1%
15+ to 20	4	80.0%	22	100.0%	23	92.0%	49	94.2%	19	90.5%	2	40.0%	70	89.7%
>20 acres	3	75.0%	13	100.0%	30	76.9%	46	82.1%	15	93.8%	4	80.0%	65	84.4%
Total	435	54.4%	414	51.8%	214	26.8%	1063	44.3%	386	48.3%	77	9.6%	1526	38.2%

*Note: this represents the percent of households in the relevant land holding class.

This relationship is explored in more detail in Table 84b where it can be seen there is an apparent trend for households to be more likely to sell crops as household land holdings increase in size. Overall, the percentages of households selling crops increases from a low of 7% for landless households (accessing land by other means to grow crop, see discussion in section 5.8), and 56% for households owning less than one acre, to 84% for households owning more than 20 acres. In Giri-affected areas even households with up to 10 acres were unlikely to have sold crops in the previous 12 months, probably indicating that land productivity had not been restored since Cyclone Giri.

Respondents were asked about the marketing of their main crop sold and about sources of price information. Households rarely organized themselves for group/collective marketing of crops. Overall 10% sold their crops collectively with 90% of households selling their crops individually (see Table 85). There was little differentiation among regions and among crops marketed (see Table 86).

Table 85:Frequency of households sellingtheir crops individually and collectively, by region

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Sold alone only	376	86.4%	371	89.6%	198	92.5%	945	88.9%	352	91.2%	76	98.7%	1373	90.0%
Sold in group only	52	12.0%	33	8.0%	13	6.1%	98	9.2%	28	7.3%	1	1.3%	127	8.3%
Both alone &group	7	1.6%	10	2.4%	3	1.4%	20	1.9%	6	1.6%	0	0.0%	26	1.7%
Total	435	100%	414	100%	214	100%	1063	100%	386	100%	77	100%	1526	100%

Table 86: Frequency of households selling their crops individually and collectively, by the top seven crops sold

Top seven main crops	Sold alone only		Sold in group only		Sold alone and in group		Total	
	Count	%	Count	%	Count	%	Count	%
Paddy/rice/sticky rice	355	91.5%	28	7.2%	5	1.3%	388	100%
Corn/maize	161	87.5%	20	10.9%	3	1.6%	184	100%
Groundnut	164	90.6%	16	8.8%	1	0.6%	181	100%
Pigeon pea	142	92.2%	9	5.8%	3	1.9%	154	100%
Sesame seed	137	89.5%	13	8.5%	3	2.0%	153	100%
Chilli	63	90.0%	5	7.1%	2	2.9%	70	100%
Potato	52	88.1%	7	11.9%			59	100%
Total	1074	90.3%	98	8.2%	17	1.4%	1189	100%

The above results suggest that the potential benefits for collective marketing may warrant investigation as households predominantly market their agricultural products individually and would have little bargaining power with buyers and traders.

Similarly, household knowledge of crop prices and access to price information is lacking. Nearly one quarter of households marketing crops had no information on prices before they sold their crops (Table 87). Dry Zone farmers appeared to be the most informed on crop prices (86%) followed by farmers in the Delta/Coastal Zone (81%). Farmers from the Hilly Zone were the least informed (66%).

Table 87:Householdknowledge of crop prices prior to selling their main crops, by region

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Had price info	287	66.0%	356	86.0%	174	81.3%	817	76.9%	292	75.6%	61	79.2%	1170	76.7%
No price info	148	34.0%	58	14.0%	40	18.7%	246	23.1%	94	24.4%	16	20.8%	356	23.3%
Total	435	100%	414	100%	214	100%	1063	100%	386	100%	77	100%	1526	100%

There was little difference between the price information known to households for different crops grown (Table 88). Farmers that grew sesame seed were most likely to have known the price of their product before sale (80%), followed by paddy producers (79%). Maize farmers were least likely (65%).

Table 88:Household knowledge of crop prices prior to selling their main cropsfor the seven main crops sold

Main 7 crops	Had price information before sale		No price information before sale		Total	
	Count	%	Count	%	Count	%
Paddy/rice/sticky rice	308	79.4%	80	20.6%	388	100%
Corn/maize	119	64.7%	65	35.3%	184	100%
Groundnut	140	77.3%	41	22.7%	181	100%
Pigeon pea	114	74.0%	40	26.0%	154	100%
Sesame seed	123	80.4%	30	19.6%	153	100%
Chilli	55	78.6%	15	21.4%	70	100%
Potato	42	71.2%	17	28.8%	59	100%
Total	901	75.8%	288	24.2%	1189	100%

Larger land holders were more likely to have known the price of their main crops before selling them (Table 89). Seventy percent of landless households and 62% of households owning less than one acre of land knew the price of their main crop while some 90% of households owning more than 15 acres had access to price information before sale.

Table 89:HH knowledge of crop prices prior to selling their main crops, by land holding size

	Had price information before sale		No price information before sale		Total	
	Count	%	Count	%	Count	%
no land	102	70.3%	43	29.7%	145	100%
<1 acre	31	62.0%	19	38.0%	50	100%
1-2 acres	235	72.1%	91	27.9%	326	100%
2+ to 5	365	76.0%	115	24.0%	480	100%
5+ to 10	238	78.8%	64	21.2%	302	100%
10+ to 15	78	88.6%	10	11.4%	88	100%
15+ to 20	63	90.0%	7	10.0%	70	100%
>20 acres	58	89.2%	7	10.8%	65	100%
Total	1170	76.7%	356	23.3%	1526	100%

Crop price information was predominantly from family and friends and crop buyers (dealers/brokers) (see Table 90). Sources of price information were consistent between regions with few other sources of price information being commonly reported.

Table 90:Sources of crop price information before sale of households' main crops, by region
For those households that had price information, note that multiple responses were allowed.

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Radio/TV	2	0.7%	3	0.8%	2	1.1%	7	0.9%	1	0.3%			8	0.7%

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Newspaper/weekly journal			6	1.7%			6	0.7%	1	0.3%			7	0.6%
Friends/Family	132	46.0%	248	69.7%	102	58.6%	482	59.0%	179	61.3%	40	65.6%	701	59.9%
Cellphone	7	2.4%	32	9.0%	2	1.1%	41	5.0%	12	4.1%			53	4.5%
Farmer association/coop			8	2.2%	3	1.7%	11	1.3%	6	2.1%			17	1.5%
NGO/other organization			2	0.6%			2	0.2%					2	0.2%
Dealer/broker	203	70.7%	211	59.3%	127	73.0%	541	66.2%	199	68.2%	33	54.1%	773	66.1%
Total	287	100%	356	100%	174	100%	817	100%	292	100%	61	100%	1170	100%

A series of questions were asked of respondents whose households sold crops in the previous 12 months concerning where their households sold their crops. The majority of respondents (70%) reported knowing the price in their nearest market town for the main crop that they sold (Table 91). Households in the Dry Zone were the most likely to have known market town prices (82%), and Hilly Zone the least likely (58%). This may reflect the relative difficulty in accessing market towns in the Hilly Zone and level of isolation, although this would need to be investigated further.

Table 91:Knowledge of crop prices at the nearest market town at the time of sale, by region
(For main crops sold in the previous 12 months for households that sold crops)

	Hilly		Dry		Delta/Coastal		LIFTvillages		Control		Giri		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Knew prices	253	58.2%	340	82.1%	144	67.3%	737	69.3%	282	73.1%	50	64.9%	1069	70.1%
Did not know	182	41.8%	74	17.9%	70	32.7%	326	30.7%	104	26.9%	27	35.1%	457	29.9%
Total	435	100%	414	100%	214	100%	1063	100%	386	100%	77	100%	1526	100%

Generally larger land owners were more likely to have known market town prices at the time of sale of their main crops that they had produced in the 12 months prior to the survey (see Table 92).

Table 92:Knowledge ofcrop prices at the nearest market town at the time of sale, by land holding size

	Knew market town prices		Did not know		Total	
Land holding size	Count	%	Count	%	Count	%
no land	86	59.3%	59	40.7%	145	100%
<1 acre	31	62.0%	19	38.0%	50	100%
1-2 acres	219	67.2%	107	32.8%	326	100%
2+ to 5	331	69.0%	149	31.0%	480	100%
5+ to 10	218	72.2%	84	27.8%	302	100%
10+ to 15	70	79.5%	18	20.5%	88	100%
15+ to 20	58	82.9%	12	17.1%	70	100%
>20 acres	56	86.2%	9	13.8%	65	100%
Total	1069	70.1%	457	29.9%	1526	100%

There was some variability between crops in terms of household knowledge of market town prices (Table 93). This is difficult to interpret as there could be several factors contributing to such knowledge, including: frequent selling of crops in market towns by local villagers (whether or not this be due to lack of local buyers), large differences in prices paid by brokers, or recent large changes in prices paid for crops encouraging farmers to seek price information more concertedly, to name a few.

Table 93:Knowledge of crop prices at the nearest market town at the time of sale for the main seven crops sold by sample households in preceding 12 months

	Knew market town prices		Did not know		Total	
	Count	%	Count	%	Count	%
Paddy/rice/sticky rice	267	68.8%	121	31.2%	388	100%

Corn/maize	101	54.9%	83	45.1%	184	100%
Groundnut	130	71.8%	51	28.2%	181	100%
Sesame seed	118	77.1%	35	22.9%	153	100%
Pigeon pea	120	77.9%	34	22.1%	154	100%
Potato	39	66.1%	20	33.9%	59	100%
Chilli	45	64.3%	25	35.7%	70	100%
Total	820	69.0%	369	31.0%	1189	100%

For those households that knew the market town prices, respondents were asked whether prices were lower than they would receive selling in their own village. Overall, some 70% of respondents reported higher prices in the market towns, 27% the same as in their own village and 3% lower than their own. However there was considerable variation between regions (Table 94). In the Dry Zone nearly 80% of respondents reported higher prices in the market town. This may explain why households in the Dry Zone were the most likely to have known market town prices (see Table 91). In Giri-affected areas, however, respondents were nearly equally divided between those reporting higher prices in the market town (50%), and those reporting the same prices as in their own village (48%).

Table 94:Crop prices at the nearest market town relative to prices in the respondents' village, by region

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Higher	142	56.1%	267	78.5%	107	74.3%	516	70.0%	204	72.3%	25	50.0%	745	69.7%
Same	104	41.1%	67	19.7%	29	20.1%	200	27.1%	67	23.8%	24	48.0%	291	27.2%
Lower	7	2.8%	6	1.8%	8	5.6%	21	2.8%	11	3.9%	1	2.0%	33	3.1%
Total	253	100%	340	100%	144	100%	737	100%	282	100%	50	100%	1069	100%

Respondents were then asked where they sold the main crop that their households had grown in the previous 12 months (Table 95). Only one third of households had soldtheir crop in their own villages (34%). Nearly half had sold their crops in a market town (48%), and the remainder in their village tract (18%). However there was considerable variation between regions. In the Giri-affected area 87% of households had sold their main crop in their own village while in the Hilly Zone only 22% sold there. In the Dry Zone 59% of farmers sold in market towns compared with only 6.5% in Giri-affected areas. Households in the Dry Zone were most likely to have known market town prices, most households there reported these prices to be higher than in their own village, and correspondingly the Dry Zone had highest proportion of households that had sold their crops in market towns.

Table 95:Locations where households sold their main crop, by region
(households that had sold crops at any time during the 12 months prior to survey)

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Own village	94	21.6%	124	30.0%	122	57.0%	340	32.0%	110	28.5%	67	87.0%	517	33.9%
Village-tract	126	29.0%	46	11.1%	28	13.1%	200	18.8%	75	19.4%	5	6.5%	280	18.3%
Market town	215	49.4%	244	58.9%	64	29.9%	523	49.2%	201	52.1%	5	6.5%	729	47.8%
Total	435	100%	414	100%	214	100%	1063	100%	386	100%	77	100%	1526	100%

Examining the locations where crops were sold for different classes of household land ownership shows no obvious trend (see Table 96). This suggests that land holding size was not a major factor in in determining where households sold theircrops. This suggests that sellers of small quantities and large quantities of product both sold at similar locations. However, there were considerable differences in preferred locations for the main crops grown (see Table 97).

Table 96:Locations where households sold their main crop, by land holding size

	Own village		Village-tract		Market town		Total	
	Count	%	Count	%	Count	%	Count	%
no land	55	37.9%	32	22.1%	58	40.0%	145	100%
<1 acre	15	30.0%	7	14.0%	28	56.0%	50	100%
1-2 acres	102	31.3%	59	18.1%	165	50.6%	326	100%
2+ to 5	144	30.0%	99	20.6%	237	49.4%	480	100%

5+ to 10	105	34.8%	54	17.9%	143	47.4%	302	100%
10+ to 15	36	40.9%	14	15.9%	38	43.2%	88	100%
15+ to 20	31	44.3%	8	11.4%	31	44.3%	70	100%
>20 acres	29	44.6%	7	10.8%	29	44.6%	65	100%
Total	517	33.9%	280	18.3%	729	47.8%	1526	100%

Rice was predominantly sold in the household's own village (59% of households) as was chilli (61%). In the case of rice, there is frequently an active network of buyers who buy in villages in the major rice growing areas. Potatoes however were most commonly sold in market towns (78% of households) as was sesame seed (68%), pigeon pea (66%) and groundnut/peanut (50%). This may reflect the absence of buyers that reside in, or travel to, villages for these crops.

Table 97:Locations where households sold their main crop for the main seven crops sold

	Own village		Village-tract		Market town		Total	
	Count	%	Count	%	Count	%	Count	%
Paddy/rice/sticky rice	228	58.8%	55	14.2%	105	27.1%	388	100%
Corn/maize	47	25.5%	59	32.1%	78	42.4%	184	100%
Groundnut	52	28.7%	38	21.0%	91	50.3%	181	100%
Sesame seed	24	15.7%	25	16.3%	104	68.0%	153	100%
Pigeon pea	24	15.6%	29	18.8%	101	65.6%	154	100%
Potato	6	10.2%	7	11.9%	46	78.0%	59	100%
Chilli	43	61.4%	5	7.1%	22	31.4%	70	100%
Total	424	35.7%	218	18.3%	547	46.0%	1189	100%

Marketing of crops by households and the prices households receive are also influenced by the timing of the sale; *when* crops are sold can often be more important than *where* they are sold in terms of price received. However, indebtedness, high interest rates and inflexible terms of credit often require households to sell their crops immediately upon harvest, often when prices are at their lowest. Households that can afford to hold their crops and store them safely can generally benefit from higher prices in subsequent months.[60] Respondents were therefore asked when they sold their main crop relative to the time of harvesting it: immediately upon harvest, 1 month later, 2 months later, 3 months later, or 4 or more months later (Table 98).

By far the largest number of households sold their main crop immediately upon harvest (62%). Only 17% of households sold their crops 2 or more months after harvest. In the Dry and Delta/Coastal Zones 72% and 71% of households respectively sold their crops immediately upon harvest. The Hilly Zone reported the smallest proportion of households selling upon harvest (53%). The variability is likely to be influenced by the crops grown and level of indebtedness in the different regions (see later discussion on credit and indebtedness).

Table 98:Timing of the sale of the main crop relative to time of harvest, by region

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Immed. after	229	52.6%	298	72.0%	151	70.6%	678	63.8%	232	60.1%	42	54.5%	952	62.4%
1 month later	119	27.4%	58	14.0%	22	10.3%	199	18.7%	89	23.1%	19	24.7%	307	20.1%
2 mths later	47	10.8%	31	7.5%	10	4.7%	88	8.3%	37	9.6%	10	13.0%	135	8.8%
3 mths later	30	6.9%	23	5.6%	25	11.7%	78	7.3%	21	5.4%	4	5.2%	103	6.7%
4+ mthslater	10	2.3%	4	1.0%	6	2.8%	20	1.9%	7	1.8%	2	2.6%	29	1.9%
Total	435	100%	414	100%	214	100%	1063	100%	386	100%	77	100%	1526	100%

Larger and wealthier agricultural producers could be expected to be more able to hold and store their crops to realize higher prices in the months after the main harvest season. This was explored in Table 99 which examines frequency of sale at harvest and the months thereafter by household land holding size. There was no clear trend.However from the small number of households with more than 20 acres

[60]Some crops are perishable and must be sold immediately upon harvest, but for the sample of households only one of the 7 main crops sold could not be stored (potatoes). Potatoes can be stored, but they deteriorate in quality. It was not established whether chilli was sold predominantly fresh or dried, though it is suspected that in most cases it was sold as dried chilli.

who sold crops, 43% sold their crops 2 or more months after harvest; a considerably higher proportion than smaller land owners. Twenty-five percent of these households sold their crops 3 months after harvest compared with only 4% of households owning less than one acre.

Table 99:Timing of the sale of the main crop relative to time of harvest, by land holding size

	Immed after		1 month later		2 months later		3 months later		4 ormore mths		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
no land	98	67.6%	28	19.3%	9	6.2%	9	6.2%	1	0.7%	145	100%
<1 acre	33	66.0%	9	18.0%	5	10.0%	2	4.0%	1	2.0%	50	100%
1-2 acres	189	58.0%	69	21.2%	35	10.7%	27	8.3%	6	1.8%	326	100%
2+ to 5	296	61.7%	111	23.1%	40	8.3%	23	4.8%	10	2.1%	480	100%
5+ to 10	202	66.9%	56	18.5%	30	9.9%	10	3.3%	4	1.3%	302	100%
10+ to 15	58	65.9%	14	15.9%	6	6.8%	9	10.2%	1	1.1%	88	100%
15+ to 20	48	68.6%	11	15.7%	3	4.3%	7	10.0%	1	1.4%	70	100%
>20 acres	28	43.1%	9	13.8%	7	10.8%	16	24.6%	5	7.7%	65	100%
Total	952	62.4%	307	20.1%	135	8.8%	103	6.7%	29	1.9%	1526	100%

There were considerable differences in timing of sales for the seven main crops sold (Table 100). However the survey did not investigate the reasons for delaying sales for all seven crops. While significant price differentials were reported in FGDs for paddy it is not certain the extent to which holding other crops provide benefits in terms of prices received by growers. Crops predominantly destined for export markets and influenced by international prices and demand may not necessarily benefit from holding for long periods after harvest. Notwithstanding, corn/maize and chilli were the crops least sold immediately upon harvest (44% and 44% of households) and potato the most sold (78%). Rice, with the largest number of sellers, was sold predominantly upon harvest (66% of households) but then the remaining households were spread in their pattern of sales such that rice was the crop most likely to be held for 3 or more months before being sold.[61]

Table 100:Timing of the sale of the main crop relative to time of harvestfor the seven main crops sold

	Immed after		1 month later		2 months later		3 months later		4 or more mths		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Paddy/rice	256	66.0%	40	10.3%	39	10.1%	43	11.1%	10	2.6%	388	100%
Corn/maize	80	43.5%	65	35.3%	28	15.2%	7	3.8%	4	2.2%	184	100%
Groundnut	121	66.9%	35	19.3%	17	9.4%	7	3.9%	1	0.6%	181	100%
Sesame seed	107	69.9%	31	20.3%	8	5.2%	7	4.6%			153	100%
Pigeon pea	105	68.2%	33	21.4%	10	6.5%	3	1.9%	3	1.9%	154	100%
Potato	46	78.0%	12	20.3%	1	1.7%					59	100%
Chilli	31	44.3%	30	42.9%	4	5.7%	4	5.7%	1	1.4%	70	100%
Total	746	62.7%	246	20.7%	107	9.0%	71	6.0%	19	1.6%	1189	100%

Respondents were finally asked about the quality of the main crop that their households had sold in the 12 months prior to the survey (Table 101). Similar responses were reported for each region with the exception of Giri-affected areas. In general, around 70% of households considered that their crops were of average quality, some 15% that their crops were above average quality for the area, and 15% below average. Only in Giri-affected areas was this common pattern noticeably different. In the Giri-affected areas only 3% reported that their main crop was above average quality while 39 percent of householdsreported that their main crop was below average quality. This was obviously the impact of Cyclone Giri which affected the main 2010 monsoon crops before they were harvested.

Table 101:Respondent ratings of the quality of their main crops sold, by region

Quality of the main crops sold	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Above average	57	13.1%	81	19.6%	30	14.0%	168	15.8%	53	13.7%	2	2.6%	223	14.6%
Average	327	75.2%	261	63.0%	151	70.6%	739	69.5%	266	68.9%	45	58.4%	1050	68.8%

[61] Note that throughout this report the term *rice* is used generically to include paddy, husked and polished rice, and sticky rice.

Below average	51	11.7%	72	17.4%	33	15.4%	156	14.7%	67	17.4%	30	39.0%	253	16.6%
Total	435	100%	414	100%	214	100%	1063	100%	386	100%	77	100%	1526	100%

5.11 Use of credit and level of indebtedness

Survey respondents were asked a series of five simple questions on their use of credit and their level of household indebtedness. Similarly all focus groupsdiscussed the use of credit, sources of credit and disadvantages and advantages of these sources. The large majority of households (83%) had taken out a loan in the 12 months prior to the survey (Table 102). This ranged from a low of 77% of households in the Hilly Zone to a high of 88% of households in the Delta/Coastal Zone.

Table 102:Frequency ofHHstaking out a loan in the 12 months prior to the survey, by region

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Took a loan	614	76.8%	662	82.8%	707	88.4%	1983	82.6%	660	82.5%	662	82.8%	3305	82.6%
Did not take a loan	186	23.2%	138	17.2%	93	11.6%	417	17.4%	140	17.5%	138	17.2%	695	17.4%
Total	800	100%	800	100%	800	100%	2400	100%	800	100%	800	100%	4000	100%

Overall, there appeared to be little difference in borrowing based on land area a household owned (Table 103). Households with no land and households with large areas of land were just as likely to have borrowed money in the 12 months prior to the survey. This seemed to be the case in most regions with only the Dry Zone showing a tendency for larger land owners being less likely to have taken out a loan.

Table 103: Frequency of households taking out a loan in the 12 months prior to the survey, by land holding size and by region

HH land holding(acres)	Hilly		Dry		Delta/Coastal		LIFTvillages		Control		Giri		Total	
	Count	%*	Count	%*	Count	%*	Count	%*	Count	%*	Count	%*	Count	%*
no land	155	74.2	288	84.5	505	87.5	948	84.1	276	85.4	447	81.9	1671	83.7
<1 acre	25	80.6	17	85.0	7	100	49	84.5	16	72.7	8	80.0	73	81.1
1-2 acres	227	78.8	82	80.4	10	90.9	319	79.6	137	82.0	53	84.1	509	80.7
2+ to 5	139	75.1	146	84.4	36	87.8	321	80.5	117	76.0	83	83.0	521	79.8
5+ to 10	54	79.4	85	85.9	63	91.3	202	85.6	67	85.9	54	90.0	323	86.4
10+ to 15	8	80.0	20	66.7	28	90.3	56	78.9	19	100	9	81.8	84	83.2
15+ to 20	3	60.0	17	77.3	23	92.0	43	82.7	16	76.2	4	80.0	63	80.8
>20 acres	3	75.0	7	53.8	35	89.7	45	80.4	12	75.0	4	80.0	61	79.2
Total	614	76.8	662	82.8	707	88.4	1983	82.6	660	82.5	662	82.8	3305	82.6

*Note: this represents the percent of households in the relevant land holding category

However, the propensity to have borrowed seems inversely related to a household's average monthly income. Households with higher incomes were less likely to have borrowed money in the 12 months prior to the survey (Table 104). However this was not a strong correlation. Overall, 83% of households with average monthly incomes of less than Ks 25,000 took out loans compared with 76% of households with average monthly incomes in excess of Ks 300,000.

Table 104: Frequency of households taking out a loan in the 12 months prior to the survey, by household average monthly income and by region

HH average monthly income	Hilly		Dry		Delta/Coastal		LIFTvillages		Control		Giri		Total	
	Count	%*	Count	%*	Count	%*	Count	%*	Count	%*	Count	%*	Count	%*
Less than Ks 25,000	84	75%	82	84%	63	86%	229	81%	89	85%	130	87%	448	83%
Ks 25,001 - Ks 50,000	247	80%	211	88%	304	90%	762	86%	246	83%	229	80%	1,237	84%
Ks 50,001 - Ks 75,000	138	80%	153	81%	149	89%	440	83%	149	81%	150	85%	739	83%
Ks 75,001 - Ks 100,000	63	69%	122	87%	78	89%	263	82%	99	83%	110	85%	472	83%
Ks 100,001 - Ks 150,000	40	77%	42	74%	55	87%	137	80%	45	79%	36	80%	218	80%
Ks 150,001 - Ks 200,000	20	71%	24	73%	18	72%	62	72%	10	83%	2	33%	74	71%
Ks 200,001 - Ks 250,000	10	91%	8	80%	9	90%	27	87%	7	100%	2	67%	36	88%

Ks 250,001 - Ks 300,000	6	60%	7	64%	8	89%	21	70%	3	60%	-		24	69%
Over Ks 300,000	4	44%	11	69%	16	84%	31	71%	10	91%	3	100%	44	76%
Don't know/no resp	2	40%	2	50%	7	100%	11	69%	2	50%	-		13	62%
Total	614	77%	662	83%	707	88%	1,983	83%	660	83%	662	83%	3,305	83%

*Note: this represents the percent of households in the relevant income category

Family and friends were the most common sources of loans among households in the survey. Forty-two percent of all households borrowed from family and friends, and 31% borrowed from money lenders (Table 105). Shopkeepers were the next most common source of loans (19%). More formal sources were less common: 16% borrowed from micro-credit providers, 10% from government, 7% from village savings and loans associations, 2% from farmers associations or cooperatives, and less than 1% from commercial banks.

There were considerable differences in the sources of loans between regions. For example, micro-credit providers were a common source in the Dry Zone (238 households out of 800 in the sample, or 30%) but uncommon in the Giri-affected villages (26 households out of 800, or 3%). This largely reflects the availability of low interest microcredit and the reach of agencies which offer it.

In the Hilly Zone, borrowing from village savings and loan associations and credit from traders in the form of 'pre-sale' of products were common, but borrowing from money lenders was relatively uncommon.

Table 105: Sources of loans for households that borrowed money in the previous 12 months, by region

	Hilly	Dry	Delta/Coastal	LIFT villages	Control	Giri	Total	
	Freq	Freq	Freq	Freq	Freq	Freq	Freq	% of all HHs
Family/friend	270	310	314	894	332	457	1683	42.1%
Money lender	107	323	330	760	225	249	1234	30.9%
Shop-keeper	50	136	236	422	147	180	749	18.7%
Micro-credit provider (low interest)	106	238	153	497	119	26	642	16.1%
Government	27	123	112	262	121	32	415	10.4%
Village savings and loans association	121	13	33	167	48	45	260	6.5%
Pre-sale of product to trader	114	27	56	197	53	5	255	6.4%
Farmers association/ cooperatives	12	14	14	40	24	1	65	1.6%
Private company	0	3	5	8	4	1	13	0.3%
Private bank	4	2	3	9	1	2	12	0.3%
Other	12	1	56	69	35	21	125	3.1%

Examining the frequency of the three most common sources of credit for households owning different areas of land leads to some interesting observations (Table 106). Households with no land were most reliant on family and friends as a source of loans (48% of households), while only 21% of households owning more than 20 acres borrowed from this source. Similarly, those with no or little land frequently borrowed from shopkeepers while this was a less common source of loans for households with larger areas of land. Money lenders were a common source of funds for households regardless of the land area owned.

Table 106: Frequency of top three sources of loan by land holding size

HH land holding (acres)	Total HHs in land class	Family/friend		Money lender		Shop keeper	
		Freq	% of all HHs in land class	Freq	% of all HHs in land class	Freq	% of all HHs in land class
no land	1,996	952	47.7%	665	33.3%	542	27.2%
<1 acre	90	42	46.7%	30	33.3%	15	16.7%
1-2 acres	631	250	39.6%	114	18.1%	69	10.9%
2+ to 5	653	240	36.8%	188	28.8%	64	9.8%

5+ to 10	374	131	35.0%	139	37.2%	37	9.9%
10+ to 15	101	33	32.7%	38	37.6%	11	10.9%
15+ to 20	78	19	24.4%	36	46.2%	4	5.1%
>20 acres	77	16	20.8%	24	31.2%	7	9.1%
Total	4,000	1683	42.1%	1,234	30.9%	749	18.7%

Most loans were for purchases of food. Of the 3,305 households that took out loans in the 12 months prior to the survey, 1,456 households (44%) did so primarily to purchase food (Table 107). This figure clearly illustrates the importance of credit as a coping strategy for household food security. This is particularly the case for households that did not own land, where 58% used their loans primarily for food purchases. By comparison, households owning larger areas of land rarely used their loans to purchase food. For example, only 5% of households owning more than 20 acres of land borrowed primarily for food purchases.

As may be expected, households owning the larger areas of land primarily used their loans for purchasing agricultural inputs. For example, of those that took out loans, 54% of households owning between 15 and 20 acresand 48% of households owning more than 20 acres of land borrowed primarily for agricultural inputs. Business investment was also a more common use of loans among households that owned larger areas of land than for the landless or land-poor households. The landless and land-poor households were more reliant on loans for health emergencies.

Table 107:The most important use of the loanstaken out by households in the 12 months prior to the survey, by land holding size

	no land		<1 acre		1-2 acres		2+ to 5		5+ to 10		10+ to 15		15+ to 20		>20 acres		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Food purchases	960	57.5	29	39.7	204	40.1	166	31.9	76	23.5	13	15.5	5	7.9	3	4.9	1456	44.1
Purchase of agricultural inputs	57	3.4	9	12.3	105	20.6	178	34.2	153	47.4	38	45.2	34	54.0	29	47.5	603	18.2
Business investment	220	13.2	8	11.0	62	12.2	85	16.3	57	17.6	21	25.0	15	23.8	25	41.0	493	14.9
Health emergency	209	12.5	12	16.4	53	10.4	34	6.5	14	4.3	8	9.5	4	6.3			334	10.1
School/education fees/costs	54	3.2	3	4.1	26	5.1	21	4.0	4	1.2	2	2.4	1	1.6	3	4.9	114	3.4
Purchase of animals/medicine for animals	50	3.0	3	4.1	30	5.9	15	2.9	1	0.3							99	3.0
Purchase of working tools or equipment	45	2.7	1	1.4	6	1.2	7	1.3	5	1.5			3	4.8	1	1.6	68	2.1
House purchase or construction	20	1.2	4	5.5	11	2.2	3	0.6	3	0.9							41	1.2
Purchase of other assets	15	0.9	1	1.4	4	0.8	1	0.2									21	0.6
Repayment of loans	10	0.6	2	2.7	1	0.2	3	0.6	3	0.9							19	0.6
Home improvement incl water supply	9	0.5	1	1.4	1	0.2	1	0.2	2	0.6	1	1.2					15	0.5
Funeral	6	0.4			2	0.4	3	0.6	2	0.6			1	1.6			14	0.4
Land purchase/rent	8	0.5			1	0.2	1	0.2			1	1.2					11	0.3
Other	3	0.2			2	0.4	1	0.2	2	0.6							8	0.2
Bride price / Wedding	2	0.1			1	0.2	1	0.2	1	0.3							5	0.2
Construction other than house	3	0.2					1	0.2									4	0.1
Total	1671	100	73	100	509	100	521	100	323	100	84	100	63	100	61	100	3305	100

Note: Percentages are of all loans taken out by households in that land owning class.

A similar trend is apparent when considering household average monthly income. Poorer households were most likely to use their loans to purchase food.The main use of loans for households earning less than Ks 25,000 per month was for food (59% of households) while only 7% of households earning more than Ks 300,000 used their loans primarily for food (Table 108). By comparison, richer households were much more likely to use their loans to purchase farm inputs. Roughly half the loans for those households earning more than Ks 250,000 per month were for agricultural inputs. Business investment was a common use of loans for wealthier households. Health emergency was more common a reason to borrow for poorer households.

Table 108:The most important use of the loans taken out by households in the 12 months prior to the survey, by household average monthly income

	Less than Ks 25,000		Ks 25,001 - 50,000		Ks 50,001 - 75,000		Ks 75,001 - 100,000		100,001 - 50,000		150,001 - 200,000		200,001 - 250,000		250,001 - 300,000		>Ks 300,000		Don't know		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Food purchases	265	59.2	609	49.2	326	44.1	182	38.6	52	23.9	6	8.1	6	16.7	1	4.2	3	6.8	6	46.2	1456	44.1
Purchase of ag inputs	41	9.2	160	12.9	147	19.9	115	24.4	67	30.7	26	35.1	13	36.1	13	54.2	21	47.7			603	18.2
Business investment	38	8.5	137	11.1	102	13.8	89	18.9	62	28.4	28	37.8	13	36.1	6	25.0	17	38.6	1	7.7	493	14.9
Health emergency	52	11.6	157	12.7	71	9.6	32	6.8	11	5.0	4	5.4	3	8.3					4	30.8	334	10.1
School/education fees/costs	12	2.7	43	3.5	31	4.2	12	2.5	9	4.1	3	4.1			1	4.2	2	4.5	1	7.7	114	3.4
Purchase animals /medicine for animals	18	4.0	44	3.6	23	3.1	11	2.3	2	0.9			1	2.8							99	3.0
Purchase of work tools or equip	1	0.2	31	2.5	13	1.8	12	2.5	6	2.8	2	2.7			1	4.2	1	2.3	1	7.7	68	2.1
House purchase or construction	10	2.2	14	1.1	9	1.2	6	1.3	1	0.5					1	4.2					41	1.2
Purchase of other assets	2	0.4	10	0.8	1	0.1	4	0.8	2	0.9	2	2.7									21	0.6
Repayment of loans	1	0.2	13	1.1	2	0.3	1	0.2	2	0.9											19	0.6
Home improvement	3	0.7	9	0.7	1	0.1			1	0.5	1	1.4									15	0.5
Funeral			3	0.2	4	0.5	3	0.6	2	0.9	2	2.7									14	0.4
Land purchase/rent	3	0.7	1	0.1	5	0.7	1	0.2							1	4.2					11	0.3
Bride price / Wedding	1	0.2	2	0.2	1	0.1	1	0.2													5	0.2
Construction other than house					2	0.3	1	0.2	1	0.5											4	0.1
Other	1	0.2	4	0.3	1	0.1	2	0.4													8	0.2
Total	448	100	1237	100	739	100	472	100	218	100	74	100	36	100	24	100	44	100	13	100	3305	100

Respondents whose households had taken out loans were also asked about their household level of debt, totalled from all sources.[62]This can be a sensitive question and responses may not be accurate as many households feel uncomfortable about divulging their exact levels of debt, as noted in FGDs. To make responding easier, households were provided a choice of ranges of values for current levels of debt (see questionnaire in Annex C). Table 109 summarises the levels of debt for all households by region.[63]

For most rural households debt is cyclic. The FGDs indicated that farming households often borrow to sow their crops and repay the loans upon harvest. Landless households often borrow when there is

[62] It is recommended that the questionnaire be altered to ask this question on household indebtedness to all households not only those that had taken out loans in the previous 12 months. This was an erroneous skip. The English version of the questionnaire in Annex C has been changed to correct this error. Nevertheless the question was asked to 83% of the sample; presumably those household that did not take out a loan in the 12 months prior to the survey had low levels of indebtedness.
[63] Note that the 99 households with no debt had presumably repaid the loan taken out in the past 12 months.

little demand for casual labour and repay when work is plentiful. This seasonality of debt is important to understand as levels of indebtedness will vary throughout the year.[64]

Over the entire sample, most household indebtedness was less than Ks300,000 (71% of the 3,305households). However, there was still a sizeable number of households with debts of more than Ks 500,000 (14% of households). The proportion of these more highly indebted households (more than Ks500,000 of debt) was highest in the Delta/Coastal Zone (20% of households) and lowest in the Giri-affected villages (8%). The Delta/Coastal Zone had the largest land holdings (see Table 55) which may explain this higher level of household debt (see below).

Table 109: Level of household indebtedness by region

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
Level of debt	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Less than Ks 25,000	21	3.4%	24	3.6%	57	8.1%	102	5.1%	38	5.8%	40	6.0%	180	5.4%
Ks 25,001 - 50,000	50	8.1%	50	7.6%	99	14.0%	199	10.0%	66	10.0%	101	15.3%	366	11.1%
Ks 50,001 - 75,000	41	6.7%	43	6.5%	38	5.4%	122	6.2%	38	5.8%	80	12.1%	240	7.3%
Ks 75,001 - 100,000	91	14.8%	84	12.7%	72	10.2%	247	12.5%	83	12.6%	98	14.8%	428	13.0%
Ks 100,001 - 150,000	74	12.1%	76	11.5%	91	12.9%	241	12.2%	82	12.4%	92	13.9%	415	12.6%
Ks 150,001 - 200,000	66	10.7%	80	12.1%	54	7.6%	200	10.1%	72	10.9%	61	9.2%	333	10.1%
Ks 200,001 - 300,000	74	12.1%	83	12.5%	70	9.9%	227	11.4%	86	13.0%	71	10.7%	384	11.6%
Ks 300,001 - 400,000	49	8.0%	43	6.5%	36	5.1%	128	6.5%	47	7.1%	24	3.6%	199	6.0%
Ks 400,001 - 500,000	33	5.4%	51	7.7%	29	4.1%	113	5.7%	31	4.7%	39	5.9%	183	5.5%
Over Ks 500,000	93	15.1%	91	13.7%	143	20.2%	327	16.5%	89	13.5%	53	8.0%	469	14.2%
No debt	22	3.6%	34	5.1%	18	2.5%	74	3.7%	22	3.3%	3	0.5%	99	3.0%
Don't know/ no answer	0	0.0%	3	0.5%	0	0.0%	3	0.2%	6	0.9%	0	0.0%	9	0.3%
TOTAL	614	100%	662	100%	707	100%	1983	100%	660	100%	662	100%	3305	100%

Note: This table only includes those households that took out loans in the past 12 months

Variation of levels of indebtedness is examined in relation to the size of household landholdings (Table 110). It is clear that the proportion of more highly indebted households (more than Ks500,000 of debt) rises progressively with land holding size such that for households with more than 20 acres of land,highly indebted households were the majority (69% of the households). For households owning more than 5 acres of land, debt levels of more than Ks 500,000 was the most common among the ranges of debt levels.[65]For households with no land the proportion of households with more than Ks500,000 of debt is small; only 4%. Obviously households with larger areas of land have a greater capacity to repay these high levels of debt, and as seen in Table 107 larger land holders predominantly use their loans to purchase agricultural inputs.

Table 110:Level of current householdindebtednessby land holding size

Level of debt	no land		<1 acre		1-2 acres		2+ to 5		5+ to 10		10+ to 15		15+ to 20		>20 acres		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Less than Ks 25,000	137	8.2%	7	9.6%	16	3.1%	13	2.5%	5	1.5%	2	2.4%					180	5.4%
Ks 25,001 - 50,000	273	16.3%	6	8.2%	42	8.3%	30	5.8%	11	3.4%	2	2.4%	1	1.6%	1	1.6%	366	11.1%

[64] For subsequent evaluations these questions should be asked at the same time of year in order to compare findings with the baseline.

[65] For households owning 5+ to 10 acres, 31% had debts of greater than Ks 500,000.

Level of debt	no land		<1 acre		1-2 acres		2+ to 5		5+ to 10		10+ to 15		15+ to 20		>20 acres		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Ks 50,001 - 75,000	153	9.2%	1	1.4%	35	6.9%	39	7.5%	10	3.1%	1	1.2%	1	1.6%			240	7.3%
Ks 75,001 - 100,000	235	14.1%	17	23.3%	85	16.7%	70	13.4%	18	5.6%	1	1.2%	2	3.2%			428	13.0%
Ks 100,001 - 150,000	237	14.2%	10	13.7%	72	14.1%	65	12.5%	22	6.8%	2	2.4%	4	6.3%	3	4.9%	415	12.6%
Ks 150,001 - 200,000	159	9.5%	4	5.5%	62	12.2%	58	11.1%	36	11.1%	7	8.3%	1	1.6%	6	9.8%	333	10.1%
Ks 200,001 - 300,000	182	10.9%	9	12.3%	58	11.4%	75	14.4%	42	13.0%	11	13.1%	5	7.9%	2	3.3%	384	11.6%
Ks 300,001 - 400,000	73	4.4%	5	6.8%	31	6.1%	51	9.8%	26	8.0%	2	2.4%	7	11.1%	4	6.6%	199	6.0%
Ks 400,001 - 500,000	69	4.1%	4	5.5%	23	4.5%	30	5.8%	43	13.3%	8	9.5%	5	7.9%	1	1.6%	183	5.5%
Over Ks 500,000	106	6.3%	9	12.3%	62	12.2%	71	13.6%	99	30.7%	47	56.0%	33	52.4%	42	68.9%	469	14.2%
No debt	44	2.6%	1	1.4%	22	4.3%	18	3.5%	8	2.5%	1	1.2%	3	4.8%	2	3.3%	99	3.0%
Don't know/no answer	3	0.2%			1	0.2%	1	0.2%	3	0.9%			1	1.6%			9	0.3%
Total	1671	100%	73	100%	509	100%	521	100%	323	100%	84	100%	63	100%	61	100%	3305	100%

Note: This table only includes those households that took out loans in the past 12 months

Table 111 illustrates a similar trend when debt is examined for different levels of household average monthly income. Generally households with a higher average monthly income had higher levels of debt at the time of the survey. This trend can readily be observed for current debt levels of over Ks 500,000. Only 3% of households earning an average of less than Ks 25,000 per month had debt levels of over Ks 500,000. The proportion of households with this level of debt increases as household average monthly incomes increases until reaching 68% of households earning more than Ks 300,000 per month.

Table 111:Level of current household indebtedness by household average monthly income

Household current debt	Less than Ks 25,000		Ks 25,000 - 50,000		Ks 50,001 - 75,000		Ks 75,001 - 100,000		Ks 100001 -150,000		Ks 150001 - 200,000		Ks 200001 - 250,000		Ks 250001 - 300,000		Over Ks 300,000		Don't know		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Less than Ks 25,000	42	9.4%	71	5.7%	33	4.5%	24	5.1%	6	2.8%			1	2.8%					3	23.1%	180	5.4%
Ks 25,001 - 50,000	75	16.7%	168	13.6%	78	10.6%	31	6.6%	9	4.1%	3	4.1%					2	4.5%			366	11.1%
Ks 50,001 - 75,000	47	10.5%	113	9.1%	48	6.5%	25	5.3%	7	3.2%											240	7.3%
Ks 75,001 - 100,000	64	14.3%	182	14.7%	106	14.3%	56	11.9%	13	6.0%	3	4.1%	3	8.3%	1	4.2%					428	13.0%
Ks 100,001 - 150,000	57	12.7%	155	12.5%	116	15.7%	50	10.6%	28	12.8%	5	6.8%	1	2.8%	1	4.2%	2	4.5%			415	12.6%
Ks 150,001 - 200,000	43	9.6%	146	11.8%	66	8.9%	44	9.3%	20	9.2%	2	2.7%	5	13.9%	2	8.3%	3	6.8%	2	15.4%	333	10.1%
Ks 200,001 - 300,000	42	9.4%	128	10.3%	97	13.1%	64	13.6%	36	16.5%	12	16.2%	2	5.6%	1	4.2%	1	2.3%	1	7.7%	384	11.6%
Ks 300,001 - 400,000	20	4.5%	69	5.6%	45	6.1%	30	6.4%	17	7.8%	5	6.8%	5	13.9%	2	8.3%	2	4.5%	4	30.8%	199	6.0%
Ks 400,001 - 500,000	20	4.5%	54	4.4%	36	4.9%	41	8.7%	22	10.1%	6	8.1%	3	8.3%			1	2.3%			183	5.5%
Over Ks 500,000	26	5.8%	118	9.5%	90	12.2%	88	18.6%	54	24.8%	33	44.6%	15	41.7%	14	58.3%	30	68.2%	1	7.7%	469	14.2%
No debt	12	2.7%	32	2.6%	21	2.8%	16	3.4%	5	2.3%	5	6.8%	1	2.8%	3	12.5%	3	6.8%	1	7.7%	99	3.0%
Don't know/no answer			1	0.1%	3	0.4%	3	0.6%	1	0.5%									1	7.7%	9	0.3%
Total	448	100%	1237	100%	739	100%	472	100%	218	100%	74	100%	36	100%	24	100%	44	100%	13	100%	3305	100%

High levels of indebtedness are not necessarily a problem as credit can be used to support investment at times when household liquidity is low. Indebtedness is a problem if rates of interest are usurious and if debt levels exceed a households' capacity to comfortably repay. In order to understand this

situation a little further survey respondents were asked to compare current levels of household indebtedness with previous years (see Table 112).

Table 112: Comparison of current debt with previous years, by region

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Increasing	355	60.0%	286	45.8%	456	66.2%	1097	57.6%	352	55.7%	557	84.5%	2006	62.7%
Staying much the same	137	23.1%	193	30.9%	155	22.5%	485	25.4%	192	30.4%	76	11.5%	753	23.6%
Decreasing	99	16.7%	146	23.4%	78	11.3%	323	16.9%	87	13.8%	26	3.9%	436	13.6%
Don't know/no resp	1	0.2%	0	0.0%	0	0.0%	1	0.1%	1	0.2%	0	0.0%	2	0.1%
TOTAL	592	100%	625	100%	689	100%	1906	100%	632	100%	659	100%	3197	100%

Overall, most respondents (63%) reported that their households' debts were increasing compared with previous years. There was considerable variation between regions, from 46% of households in the Dry Zone to a high of 85% of households in the Giri-affected areas reporting increasing levels of debt. The Delta/Coastal Zone was the second highest with 66% of households.

Conversely, 23% of respondents in the Dry Zone reported decreasing household debt levels, with a low of 4% of respondents from the Giri-affected areas. The Delta/Coastal Zone was the second lowest with 11% of households reporting decreasing debt. It can be expected that destructive cyclones such as Nargis and Giri result in increasing debt as households struggle to rebuild their houses and livelihoods.

Tables 113 and 114 examine trends in household debt levels in relation to the size of household land holdings and household average monthly income. While there is no clear trend apparent, in both cases the least wealthy (in terms of land and income) reported the highest proportion of households with increasing debt and were the least likely to have reported decreasing debt. Sixty-seven percent of landless households reported increasing levels of debt (Table 113) and, similarly, 69% of households earning less than Ks 25,000 per month reported that household debt was increasing. This increasing level of indebtedness amongst the poorest households was confirmed in the FGDs (see below).

Table 113:Comparison of current debt with previous years, by land holding size

Land holding	Increasing		Staying much the same		Decreasing		Don't know/no resp		Total	
class (acres)	Freq	%*	Freq	%*	Freq	%*	Freq	%*	Freq	%*
no land	1087	66.9%	350	21.6%	187	11.5%		0.0%	1624	100%
<1 acre	40	55.6%	21	29.2%	10	13.9%	1	1.4%	72	100%
1-2 acres	301	61.9%	121	24.9%	64	13.2%		0.0%	486	100%
2+ to 5	271	54.0%	131	26.1%	99	19.7%	1	0.2%	502	100%
5+ to 10	190	60.9%	82	26.3%	40	12.8%		0.0%	312	100%
10+ to 15	49	59.0%	16	19.3%	18	21.7%		0.0%	83	100%
15+ to 20	34	57.6%	15	25.4%	10	16.9%		0.0%	59	100%
>20 acres	34	57.6%	17	28.8%	8	13.6%		0.0%	59	100%
Total	2006	62.7%	753	23.6%	436	13.6%	2	0.1%	3197	100%

*Note: this denotes the percent of households in the relevant land-owning category

Table 114:Comparison of current debt with previous years, byHHaverage monthly income

Household average monthly income (Ks)	Increasing		Staying much the same		Decreasing		Do not know/No response		Total	
	Freq	%*	Freq	%*	Freq	%*	Freq	%*	Freq	%*
Less than Ks 25,000	299	68.6%	92	21.1%	45	10.3%		0.0%	436	100%
25,001 - 50,000	754	62.6%	290	24.1%	160	13.3%		0.0%	1204	100%
50,001 - 75,000	462	64.6%	160	22.4%	91	12.7%	2	0.3%	715	100%
75,001 - 100,000	279	61.6%	106	23.4%	68	15.0%		0.0%	453	100%
100,001 - 150,000	121	57.1%	57	26.9%	34	16.0%		0.0%	212	100%
150,001 - 200,000	39	56.5%	17	24.6%	13	18.8%		0.0%	69	100%
200,001 - 250,000	14	40.0%	15	42.9%	6	17.1%		0.0%	35	100%
250,001 - 300,000	14	66.7%	3	14.3%	4	19.0%		0.0%	21	100%
Over Ks 300,000	18	43.9%	12	29.3%	11	26.8%		0.0%	41	100%
Don't know/no resp	6	54.5%	1	9.1%	4	36.4%		0.0%	11	100%

Total	2006	62.7%	753	23.6%	436	13.6%	2	0.1%	3197	100%

*Note: this denotes the percent of households in the relevant income category

Following a similar trend, those households with the highest number of months of adequate household food provisioning (i.e. 12 months in the past year) showed the lowest percentage of households with increasing indebtedness (53%).

The FGDs discussed credit and indebtednessmore informally. In general FGD participants reported that,unless there was a credit association or microcredit provider in the village, the poor had to rely on family and friends for small loans, or shopkeepers to provide food items on credit. Some family and friends collected interest while others did not depending on the nature of the relationship. They did not ask for collateral and terms were generally flexible.

Money lenders on some occasions lent to the poor but only small amounts. Some villages reported that nobody lent money to casual labourers and the very poor; while in other villages casual labourers could sometimes borrow from employers, effectively selling their labour in advance. In one village in Gwa township the poor men's FGD summarized the situation: '*the poor had to take help from each other*'.

Wealthier households generally had more options for credit. Some villages reported that better off households travelled to towns to pawn their gold or other valuable items. With gold as collateral households could borrow with interest rates as low as 2% to 3% per month, while other FGDs reported rates as high as 10% to 15%per month with collateral. Farming households could also borrow from the Myanmar Agricultural Development Bank (MADB) or pre-sell their crops to traders/brokers. Upon harvest they then had to sell their crops to these traders/brokers at less than market prices. In Rakhine the FGDs reported that prawn farmers would repay their loans (principal and interest) to money lenders once they had sold their prawns. Other villages in Rakhine State reported that the prawn farmers themselves were sometimes a source of credit for other households.

Money lenders would lend with collateral or without collateral but with different interest rates. It was rare that they lent to very poor households without collateral, and the very poor generally had none to put up. Loans to the poor without collateral were generally small; one village in Rakhine quoted loans of Ks 10,000 at 20% interest per month. Other villages reported rates as high as 30% per month.

It was clear from the FGDs that the rates and terms of village money lenders varied greatly. The most common rates without collateral were from 10% to 20% per month. With gold as collateral, households could borrow from money lenders and pawnshops with common rates around 5%. Gold was generally the best form of collateral with the lowest interest rates. TVs, DVD players, cattle, tillers etc could also be used as collateral but the interest rates were higher. One village FGD reported that land holders only rarely mortgaged their properties.[66]

Loans from MADB were available to farmers only. The FGDs with agricultural producers reported various terms and conditions from MADB. One village reported a maximum of Ks 40,000 per acre of paddy and Ks 10,000 per acre for other crops. The interest rate was 1.75% per month with terms of 8 months for paddy and 4 months for winter crops. Loans from MADB were considered 'very advantageous'.[67] Another village reported interest of 1.5% per month for loans from MADB.

Only 4 of the 12 FGD villages had access to low interest sources of credit;generally microcredit providers but one village also had a form of village savings and loans association. However these did not satisfy the demand for credit. Loans from PACT were considered cheap at 3% interest rate but were inflexible in their terms. Some forms of PACT loans required repayments every 2 weeks; something that was difficult for many households. Money lenders, while offering expensive credit

[66]Bant Bway Village, Nawnghkio Township, Shan State
[67]Myoma Village, Gwa Township, Rakhine State.

generally provided bigger loans the terms of which could be extended as long as regular interest payments were made. Overall, money lenders were the most important source of credit.

5.12 Household assets and wealth

5.12.1 Household livestock ownership

Livestock were among the most important assets for rural households in the survey and represented a form of savings as well as being productive assets in their own right. Livestock are an integral component of the agricultural systems for farming households and can play important roles in tillage, threshing, transport, soil fertilization (through manures), even pest control (ducks), and can make valuable use of crop residues. However it has often been reported that landless households found it difficult to own animals as they generally had restricted access to land and grazing/feeding areas.Nevertheless livestock (predominantly pigs and poultry) were still an important source of livelihood for landless households.

There was considerable variation in types of livestock owned in each region, in a large part due to agroecological differences (Table 115). For example, ducks were very common in the Delta/Coastal region and were owned by more than one-quarter of households but rare in the Hilly Zone (less than 1% of households). Only chickens and pigs were common across all regions with half of all sample households owning chickens and 30% owning pigs. The Dry Zone had the most households owning cattle (49%) while only 7% of households in the Delta/Coastal Zone owned cattle. Buffalo were most common in Hilly Zone households (20%) followed by Delta/Coastal zone households (11%). Horses, goats and sheep were comparatively rarely owned across all regions.

Table 115: Frequency of households owning different types of livestock, by region

		Hilly	Dry	Delta/Coastal	LIFT villages	Control	Giri	Total
Cattle	Freq	186	391	55	632	234	105	971
	%	23.3%	48.9%	6.9%	26.3%	29.3%	13.1%	24.3%
Horses	Freq	26	0	0	26	18	0	44
	%	3.3%	0.0%	0.0%	1.1%	2.3%	0.0%	1.1%
Goats and/or sheep	Freq	49	56	10	115	26	24	165
	%	6.1%	7.0%	1.3%	4.8%	3.3%	3.0%	4.1%
Buffalo	Freq	157	2	89	248	86	47	381
	%	19.6%	0.3%	11.1%	10.3%	10.8%	5.9%	9.5%
Pigs	Freq	298	162	272	732	255	203	1190
	%	37.3%	20.3%	34.0%	30.5%	31.9%	25.4%	29.8%
Chickens	Freq	402	370	451	1223	418	365	2006
	%	50.3%	46.3%	56.4%	51.0%	52.3%	45.6%	50.2%
Ducks	Freq	4	14	205	223	69	22	314
	%	0.5%	1.8%	25.6%	9.3%	8.6%	2.8%	7.9%

Note: These were the 7 most widely reported livestock owned by households in the sample.

To better understand the extent of livestock ownership, Table 116 illustrates the average number of each type of livestock owned by households for those households that owned them. While ducks and goats/sheep were not widely owned by households, those that did own them owned them in relatively high numbers suggesting that these were important for household income and not only for household consumption or other purposes (such as tillage or transport). Chickens were also owned in comparably high numbers reflecting their value for both consumption (meat and eggs) and income.

Again there were wide differences in average numbers owned between the different agroecological zones represented in the survey. Of note was the average of 36 ducks owned by households with ducks in the Delta/Coastal Zone and 16 goats/sheep by households owning goats in the Dry Zone.

Table 116: Average number of each type of livestock owned by HHsthat owned them, by region

	Hilly	Dry	Delta/Coastal	LIFT villages	Control	Giri	Total
Cattle	3.95	3.50	6.13	3.87	3.30	4.06	3.75
Horses	3.76			3.76	2.83		3.37
Goats and/or sheep	2.67	15.60	3.89	8.81	12.95	2.73	8.53
Buffalo	2.16	8.00	3.94	2.85	2.22	5.06	2.98
Pigs	2.26	2.32	1.64	2.05	2.08	2.06	2.06
Chickens	9.65	10.16	10.73	10.20	10.09	5.59	9.35
Ducks	5.50	6.07	35.68	33.27	15.27	15.71	28.19

Similarly Table 117 shows the total number of each livestock type owned by the 800 households in each zone and for the sample of 4,000 households overall.

Table 117: Total numbers of each type of livestock owned by sample households in in each zoneand for the sample overall

	Hilly	Dry	Delta/Coastal	LIFT villages	Control	Giri	Total
Cattle	715	1,289	319	2,323	730	386	3,439
Horses	94			94	51		145
Goats and/or sheep	128	780	35	943	285	60	1,288
Buffalo	330	16	343	689	189	238	1,116
Pigs	663	343	414	1,420	502	377	2,299
Chickens	3,880	3,717	4,816	12,413	4,218	1,989	18,620
Ducks	22	85	7,279	7,386	1,023	330	8,739

Note: This table excludes shared ownership of animals among households (a comparatively small number).

Table 118 examines the relationship between household livestock ownership and land holding size for the sample of 4,000 households. As may be expected, households with little or no land rarely owned large livestock (cattle and buffalo). The proportion of households owning cattle and buffalo increased with land holding size. However, landless households were as likely as other households to own goats/sheep, pigs chickens and ducks. This is despite problems landless households face accessing land upon which to hold, tend or feed livestock.

Table 118:Frequency of households owning different types of livestock, by land holding size

		Land holding size (acres)							
		no land	<1 acre	1-2 acres	2 to 5	5 to 10	10 to 15	15 to 20	>20 acres
Cattle	Freq	181	18	173	295	185	46	40	33
	%	9.1%	20.0%	27.4%	45.2%	49.5%	45.5%	51.3%	42.9%
Horses	Freq	4	0	19	15	3	0	1	2
	%	0.2%	0.0%	3.0%	2.3%	0.8%	0.0%	1.3%	2.6%
Goats and/or sheep	Freq	60	1	48	36	14	3	3	0
	%	3.0%	1.1%	7.6%	5.5%	3.7%	3.0%	3.8%	0.0%
Buffalo	Freq	28	6	83	94	79	34	22	35
	%	1.4%	6.7%	13.2%	14.4%	21.1%	33.7%	28.2%	45.5%
Pigs	Freq	563	21	239	182	112	34	20	19
	%	28.2%	23.3%	37.9%	27.9%	29.9%	33.7%	25.6%	24.7%
Chickens	Freq	914	37	321	362	221	62	46	43
	%	45.8%	41.1%	50.9%	55.4%	59.1%	61.4%	59.0%	55.8%
Ducks	Freq	196	3	10	20	39	18	11	17
	%	9.8%	3.3%	1.6%	3.1%	10.4%	17.8%	14.1%	22.1%
Total HHs in land class		1,996	90	631	653	374	101	78	77

5.12.2 Household ownership of agricultural equipment and machinery

Households were also asked about the assets they owned, in part to provide a measure of household wealth. In addition to land and livestock, discussed above, respondents provided information on household ownership of agricultural equipment and machinery and various other household assets as well as sources of lighting and cooking fuel.

Table 119, below, summarises household ownership of agricultural equipment and machinery by region. This information not only provides information of relevance to household wealth but also

indicates production technologies and levels of investment in agriculture. Many of LIFT partners are supporting the intensification of agricultural production and investment in technologies required to lift productivity or quality of agricultural products. Changes in technologies as a result of LIFT support can therefore be assessed.

Most of the equipment listed in Table 119 is owned by land-holding farming households. However, with support, landless households may also invest in agricultural equipment and machinery to offer services to agricultural producers, and thereby provide another source of livelihood to the landless beyond selling their labour. The extent to which this has taken place will be investigated in LIFT mid-term and final evaluations.

There was little shared ownership of agricultural equipment and machinery (under 50 cases in the sample of 4,000 households) suggesting that interventions that promote shared ownership may be difficult to sustain. The most common equipment owned was tillage equipment for animal traction, followed by tarpaulins/seed dry nets, and animal drawn carts. Mechanized equipment (power tillers, power threshers, irrigation pumps and tractors) were rarely owned. Backpack sprayers for pest control were also rare among sampled households. This low level of investment in agricultural equipment and machinery suggests that considerable gains in productivity and crop quality can be made with irrigation and pest control equipment and possibly post-harvest equipment.

Table 119: Frequency of household ownership (individual and shared ownership) of various types of agricultural equipment and machinery, by region

		Hilly	Dry	Delta/Coastal	LIFT villages	Control	Giri	Total
Ploughs/tillage equipment (draught)	Not owned	536	480	646	1662	526	645	2833
	Owned	264	320	151	735	271	154	1160
	Shared	0	0	3	3	3	1	7
Power tiller	Not owned	770	791	741	2302	769	792	3863
	Owned	29	8	53	90	27	7	124
	Shared	1	1	6	8	4	1	13
Tractor	Not owned	798	799	784	2381	791	800	3972
	Owned	2	1	15	18	8	0	26
	Shared	0	0	1	1	1	0	2
Power thresher	Not owned	798	799	783	2380	793	798	3971
	Owned	2	1	14	17	5	2	24
	Shared	0	0	3	3	2	0	5
Tarpaulin or seed drying net	Not owned	475	596	725	1796	591	670	3057
	Owned	325	204	75	604	209	129	942
	Shared	0	0	0	0	0	1	1
Backpack sprayer	Not owned	705	711	781	2197	746	796	3739
	Owned	88	88	15	191	52	4	247
	Shared	7	1	4	12	2	0	14
Improved crop storage bin or silo	Not owned	692	735	755	2182	728	756	3666
	Owned	108	65	45	218	72	44	334
	Shared	0	0	0	0	0	0	0
Irrigation pump	Not owned	788	778	776	2342	787	799	3928
	Owned	12	22	24	58	13	1	72
	Shared	0	0	0	0	0	0	0
Animal drawn cart	Not owned	725	525	780	2030	653	800	3483
	Owned	75	275	20	370	144	0	514
	Shared	0	0	0	0	3	0	3
Trailer (drawn by vehicle)	Not owned	797	797	793	2387	798	799	3984
	Owned	3	3	7	13	2	1	16
	Shared	0	0	0	0	0	0	0
Seeder	Not owned	800	799	799	2398	799	800	3997
	Owned	0	1	1	2	1	0	3
	Shared	0	0	0	0	0	0	0

Power tillers were the most widely owned of the mechanized equipment. Table 120 illustrates that household ownership of a power tiller was related to the area of their landholding. Over 40% of households owning more than 20 acres of land owned a power tiller falling to a negligible proportion of households with little or no land.

Table 120: Frequency of household ownership of power tillers by land holding size.

Household land holding (acres)	Not owned		Owned		Shared		Total	
	Freq	%*	Freq	%*	Freq	%*	Freq	%*
no land	1,994	99.9%	1	0.1%	1	0.1%	1,996	100%
<1 acre	90	100%	0	0.0%	0	0.0%	90	100%
1-2 acres	627	99.4%	4	0.6%	0	0.0%	631	100%
2+ to 5	632	96.8%	19	2.9%	2	0.3%	653	100%
5+ to 10	336	89.8%	31	8.3%	7	1.9%	374	100%
10+ to 15	87	86.1%	13	12.9%	1	1.0%	101	100%
15+ to 20	51	65.4%	25	32.1%	2	2.6%	78	100%
>20 acres	46	59.7%	31	40.3%	0	0.0%	77	100%
Total	3,863	96.6%	124	3.1%	13	0.3%	4,000	100%

*Note: this denotes percent of households in relevant land-owning category

5.12.3Household energy sources

Overall, only 7% of the sample households were connected to the electricity grid; ranging from maximum of 16% of households in the Hilly Zone to less than 1% of households in the Giri-affected areas. Similarly households from the Hilly Zone were most likely to be connected to a village generator (15.6%) or have their own generator (3.8%). By contrast households in Giri-affected areas were most likely to use candles for lighting (55%) and households in the Delta/Coastal Zone most likely to use a kerosene or oil lamp (60%). Households in the Dry Zone were the second most connected to the grid (11%) but most likely to share a generator with other households (11%).

Table 121: Frequency of household sources of lighting, by region

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Electricity from the grid	128	16.0%	91	11.4%	31	3.9%	250	10.4%	42	5.3%	3	0.4%	295	7.4%
Village generator	125	15.6%	70	8.8%	10	1.3%	205	8.5%	53	6.6%	31	3.9%	289	7.2%
Own generator	30	3.8%	5	0.6%	24	3.0%	59	2.5%	17	2.1%	6	0.8%	82	2.1%
Shared generator*	48	6.0%	88	11.0%	48	6.0%	184	7.7%	39	4.9%	57	7.1%	280	7.0%
Lamp (kerosene/oil)	124	15.5%	18	2.3%	483	60.4%	625	26.0%	227	28.4%	204	25.5%	1056	26.4%
Candle	194	24.3%	141	17.6%	126	15.8%	461	19.2%	167	20.9%	442	55.3%	1070	26.8%
Other	151	18.9%	387	48.4%	78	9.8%	616	25.7%	255	31.9%	57	7.1%	928	23.2%
TOTAL	800	100%	800	100%	800	100%	2400	100%	800	100%	800	100%	4000	100%

* Shared generator with other households

Access to electricity either from the grid or generators (other than village generators) was correlated with level of household average monthly income (see Table 122). In general, the larger the household average monthly income the more likely the household had electricity from the grid, had its own generator or shared a generator with other households. Conversely the poorer the household the more likely it used candles or lamps for lighting. These trends can be expected.Connection to the grid, while in large part dependent on household location, is also dependent on income as it costs money to be connected in locations where this is possible and to pay for the service. Moreover, wealthier households are more likely to live in locations where electricity can be supplied. Such locations in

general have good road networks and better access to markets, employment, business and educational opportunities.

Table 122:Frequency of HH sources of lighting, by level of household average monthly income

	Electricityfrom grid		Village generator		Own generator		Shared generator		Lamp (kerosene/oil)		Candle		Other		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Less than Ks 25,000	19	3.5%	38	7.1%	2	0.4%	13	2.4%	168	31.2%	177	32.9%	121	22.5%	538	100%
Ks 25,001 - 50,000	68	4.6%	105	7.1%	16	1.1%	53	3.6%	497	33.8%	395	26.9%	335	22.8%	1469	100%
Ks 50,001 - 75,000	55	6.2%	69	7.8%	12	1.3%	69	7.8%	214	24.0%	244	27.4%	227	25.5%	890	100%
Ks 75,001 - 100,000	57	10.0%	47	8.2%	17	3.0%	72	12.6%	103	18.1%	149	26.1%	125	21.9%	570	100%
Ks 100,001 - 150,000	41	15.0%	7	2.6%	9	3.3%	40	14.6%	41	15.0%	71	25.9%	65	23.7%	274	100%
Ks 150,001 - 200,000	18	17.3%	8	7.7%	10	9.6%	16	15.4%	14	13.5%	11	10.6%	27	26.0%	104	100%
Ks 200,001 - 250,000	10	24.4%	8	19.5%	2	4.9%	5	12.2%	7	17.1%	4	9.8%	5	12.2%	41	100%
Ks 250,001 - 300,000	8	22.9%	3	8.6%	3	8.6%	2	5.7%	4	11.4%	4	11.4%	11	31.4%	35	100%
Over Ks 300,000	17	29.3%	4	6.9%	11	19.0%	9	15.5%	5	8.6%	6	10.3%	6	10.3%	58	100%
Don't know/no response	2	9.5%	0	0.0%	0	0.0%	1	4.8%	3	14.3%	9	42.9%	6	28.6%	21	100%
Total	295	7.4%	289	7.2%	82	2.0%	280	7.0%	1056	26.4%	1070	26.8%	928	23.2%	4000	100%

Sources of cooking fuel were similar between regions with a very high reliance on fuel wood. The use of fuel wood ranged from a low of 90% of households in the Delta/Coastal Zone to a high of 99% of households in Giri-affected areas (Table 123a). The FGDs underlined the importance of firewood; its collection and sale was an important source of income for poor households. In some cases especially the Giri-affected villages the community had to travel long distances to collect fuel wood. These results suggest thatcommunity forestry, agroforestry and fuel efficient stoves may be important areas for support in some locations.

Table 123a: Frequency of household sources of cooking fuel, by region

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Electricity	31	3.9%	11	1.4%	2	0.3%	44	1.8%	8	1.0%	1	0.1%	53	1.3%
Gas	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Charcoal	11	1.4%	18	2.3%	12	1.5%	41	1.7%	4	0.5%	9	1.1%	54	1.4%
Kerosene	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.1%	1	0.1%	2	0.1%
Wood	757	94.6%	764	95.5%	721	90.1%	2242	93.4%	772	96.5%	789	98.6%	3803	95.1%
Dung	0	0.0%	4	0.5%	0	0.0%	4	0.2%	0	0.0%	0	0.0%	4	0.1%
Other	1	0.1%	3	0.4%	65	8.1%	69	2.9%	15	1.9%	0	0.0%	84	2.1%
Total	800	100%	800	100%	800	100%	2400	100%	800	100%	800	100%	4000	100%

Table 123b: Frequency of households using fuel-efficient wood stoves, by region

	Hilly	Dry	Delta/Coastal	LIFT villages	Control	Giri	Total
Freq	68	106	113	287	68	134	489
%	8.5%	13.3%	14.1%	12.0%	8.5%	16.8%	12.2%

5.12.4 Ownership of other assets

The questionnaire also recorded household ownership of a range of other assets (not discussed above) as a means in particular to assess household wealth. Households were scored against their

ownership of 25 various assets (see Question 17.3 in Annex C) from a minimum score of zero to a maximum of 25. If a household owned all 25 it would score 25, if it owned 7 of the different assets it would score 7, and if it owned none it would score 0. These assets were not weighted for their different values.[68]

The resulting asset ownership score worked well to divide the households into broad range of wealth classes, though is skewed towards the lower scores (see Table 124).

Table 124:Household asset ownership scores for the sample of 4,000 households.

Asset ownership score	Frequency	% of all HHs
0	456	11.4%
1	597	14.9%
2	657	16.4%
3	604	15.1%
4	488	12.2%
5	368	9.2%
6	294	7.4%
7	185	4.6%
8	123	3.1%
9	80	2.0%
10	58	1.4%
11	44	1.1%
12	23	0.6%
13	12	0.3%
14	5	0.1%
15	3	0.1%
16	2	0.0%
18	1	0.0%
Total	4,000	100%

Table 125 provides the average household asset ownership score for each region in the sample. Again the Giri-affected area scored the lowest, consistent with the region's scoring in other measures of wealth and food security. The average score for Giri-affected areas was 1.99 compared with highest score of 4.78 for the Dry Zone. The Delta/Coastal Zone scored second lowest with 3.31 reflecting the large number of landless households whose primary source of livelihood was casual labour.

Table 125: Average household asset ownership score, by region

Region	No. HHs	Mean asset score
Hilly	800	3.56
Dry	800	4.78
Delta/Coastal	800	3.31
LIFTvillages	2,400	3.88
Control	800	3.79
Giri	800	1.99
Total	4,000	3.48

Asset ownership showed a clear correlation with household land holding size (Table 126) and household average monthly income (Table 127). Looking at the total sample, households with no land had an average household asset ownership score of 2.77 rising to an average score of 7.73 for households owning more than 20 acres. Similar trends were apparent for each individual region. Note again, Giri-affected households with little or no land scored the lowest in terms of asset ownership.

Table 126: Average household asset ownership score by land holding size for each region

HH land holding (acres)	Hilly	Dry	Delta/Coastal	LIFTvillages	Control	Giri	Total
no land	2.93	3.87	2.73	3.12	3.07	1.87	2.77

[68] Assets were varied in value and included the following: bicycle, motorcycle, trishaw, *trawlarjee*, car, truck, bed (wooden or steel), mattress, stove (gas or electric), fuel efficient stove, chair, table, gold/jewelry , radio/cassette, TV/satellite dish, DVD player, sewing machine, cell phone, watch etc.

<1 acre	2.74	3.45	4.71	3.22	2.27	1.40	2.79
1-2 acres	3.32	4.61	4.27	3.68	3.53	1.83	3.45
2+ to 5	3.96	5.23	4.12	4.53	4.41	2.00	4.11
5+ to 10	4.82	5.74	3.90	4.94	4.71	2.52	4.50
10+ to 15	5.80	7.27	4.19	5.72	5.26	3.27	5.37
15+ to 20	8.80	6.95	4.84	6.12	6.81	4.60	6.21
>20 acres	8.00	9.15	7.72	8.07	7.06	6.00	7.73
Total	3.56	4.78	3.31	3.88	3.79	1.99	3.48

Similarly, looking at the total sample, households earning an average of less than Ks 25,000 per month had an average score of 2.12 (Table 127). Average scores rose progressively to 8.86 for households earning over Ks 300,000 per month. Similar trends were apparent for individual regions. The very lowest score was for households in Giri-affected areas that earned less than Ks 25,000 per month; these households had a mean asset score of just 1.15.

These relationships are to be expected and provide some validation of the consistency of the survey data related to household assets, income and land holding sizes.

Table 127: Average household asset ownership score by household average monthly income for each region

	Hilly	Dry	Delta/Coastal	LIFT villages	Control	Giri	Total
Less than Ks 25,000	1.90	3.53	1.70	2.41	2.73	1.15	2.12
Ks 25,001 - Ks 50,000	3.04	3.72	2.48	3.01	2.91	1.86	2.77
Ks 50,001 - Ks 75,000	3.58	4.74	3.31	3.91	3.92	1.87	3.50
Ks 75,001 - Ks 100,000	4.45	5.26	3.77	4.62	4.66	2.48	4.14
Ks 100,001 - Ks 150,000	5.25	6.26	4.76	5.41	6.05	3.13	5.17
Ks 150,001 - Ks 200,000	5.86	7.67	6.56	6.76	8.08	9.17	7.05
Ks 200,001 - Ks 250,000	5.91	8.30	6.60	6.90	7.29	6.00	6.90
Ks 250,001 - Ks 300,000	7.60	7.82	8.22	7.87	4.20	.	7.34
Over Ks 300,000	9.00	9.38	9.74	9.45	7.09	6.67	8.86
Don't know/no response	3.00	3.00	1.14	2.19	4.00	1.00	2.48
Total	3.56	4.78	3.31	3.88	3.79	1.99	3.48

The trend of increasing asset score with increasing MAHFP was not so clear. However the highest average household asset ownership score was for the households that also had the highest number of months of adequate household food provisioning (see Table 128).

Table 128: Average household asset ownership score by MAHFP

MAHFP	No. HHs	Mean asset score
0	20	1.50
1	4	1.25
2	3	0.67
3	4	1.25
4	10	1.60
5	34	2.03
6	59	1.66
7	217	2.50
8	449	2.75
9	714	2.94
10	1088	3.25
11	250	2.84
12	1148	4.87
Total	4000	3.48

5.12.5 Materials used in house construction

Three additional questions were asked to provide further indications of household wealth. These related to the materials used in the construction of respondents' houses; specifically the main

materials used for roofing, walls and floors.[69] This was another means to understand household wealth, and compare with other measures used in the survey.

Table 129 summarises the findings with regards to roofing materials used in the different regions of the survey. Overall, nearly two-thirds of households used palm frond or thatch (62%) for roofing and a third (35%) used zinc or iron sheets. There was considerable variation between regions. Households in the Hilly Zone predominantly used zinc or iron sheets (67%) with only 29% using palm frond or thatch. At the other extreme were households in the Giri-affected areas and Delta/Coastal Zone where 88% and 85% respectively used palm frond or thatch with little use of zinc or iron sheets. This finding is not only consistent with the wealth profiles of the Giri-affected areas and Delta/Coastal Zone (see Table 125) but also reflects the raw materials that are often easily available in these coastal areas.Similarly, only 24% of households earning less than Ks 25,000 per month used zinc/iron sheeting, while 74% of those earning more than Ks 300,000 per month used this material for their roofs.

Table 129:Household main roofing material,by region

Main roofing material	Hilly		Dry		Delta/Coastal		LIFTvillages		Control		Giri		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Zinc or iron sheets	534	66.8%	350	43.8%	113	14.1%	997	41.5%	330	41.2%	74	9.2%	1401	35.0%
Tarpaulin			7	0.9%	6	0.8%	13	0.5%	4	0.5%	24	3.0%	41	1.0%
Palm frond or thatch	229	28.6%	417	52.1%	681	85.1%	1327	55.3%	455	56.9%	702	87.8%	2484	62.1%
Other	37	4.6%	26	3.2%			63	2.6%	11	1.4%			74	1.8%
Total	800	100%	800	100%	800	100%	2400	100%	800	100%	800	100%	4000	100%

Table 130:Frequency of householduse of zinc or iron roofing material by land holding size

HH land holding (acres)	Number of HH in land category	Use of zinc or iron sheets	
		Freq	% of HHs in land class
no land	1996	370	18.5%
<1 acre	90	45	50.0%
1-2 acres	631	351	55.6%
2+ to 5	653	332	50.8%
5+ to 10	374	162	43.3%
10+ to 15	101	50	49.5%
15+ to 20	78	44	56.4%
>20 acres	77	47	61.0%
Total	4000	1401	35.0%

Table 131:Frequency of household use of zinc or iron roofing material by household average monthly income

Average household monthly income (Ks)	No. HHs in income class	Use of zinc or iron sheets	
		Freq	% of all HHs in income class
Less than Ks 25,000	538	128	23.8%
Ks 25,001 - Ks 50,000	1469	410	27.9%
Ks 50,001 - Ks 75,000	890	316	35.5%
Ks 75,001 - Ks 100,000	570	235	41.2%
Ks 100,001 - Ks 150,000	274	139	50.7%
Ks 150,001 - Ks 200,000	104	71	68.3%
Ks 200,001 - Ks 250,000	41	23	56.1%
Ks 250,001 - Ks 300,000	35	27	77.1%
Over Ks 300,000	58	43	74.1%
Don't know/no response	21	9	42.9%
Total	4000	1401	35.0%

Construction materials for walls and flooring appeared not so related to household wealth but more related to local availability. House walls were either bamboo/palm/ thatch (75% of sample households) or timber (15%). More costly materials such as bricks or cement were rarely used. The Hilly Zone households used more timber and bricks/cement than other regions; perhaps a function of the availability of timber, and the needs of the cooler climate for more substantial walling (Table 132).

[69] Enumerators completed these questions based on their observations of the main construction materials used.

Table 132: Household main wall material, by region

Wall material	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Zinc or iron sheets	16	2.0%	3	0.4%	10	1.3%	29	1.2%	11	1.4%	4	0.5%	44	1.1%
Tarpaulin	2	0.3%	0	0.0%	36	4.5%	38	1.6%	8	1.0%	66	8.3%	112	2.8%
Bamboo, palm or thatch	435	54.4%	700	87.5%	626	78.3%	1761	73.4%	575	71.9%	643	80.4%	2979	74.5%
Timber	219	27.4%	43	5.4%	119	14.9%	381	15.9%	141	17.6%	81	10.1%	603	15.1%
Bricks, cement, cement block, or cement and stone	115	14.4%	53	6.6%	9	1.1%	177	7.4%	60	7.5%	5	0.6%	242	6.1%
Mud bricks/mud and sticks	13	1.6%	1	0.1%	0	0.0%	14	0.6%	3	0.4%	0	0.0%	17	0.4%
Other	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	0.3%	1	0.1%	3	0.1%
TOTAL	800	100%	800	100%	800	100%	2400	100%	800	100%	800	100%	4000	100%

Flooring was either timber or bamboo with timber most common in all regions except the Dry Zone where bamboo was most common (43% of households) (Table 133). The Dry Zone unlike other regions had a high proportion of houses with earthen floors (30%).

Table 133: Household main flooring material, by region

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Timber	362	45.3%	173	21.6%	566	70.8%	1101	45.9%	381	47.6%	575	71.9%	2057	51.4%
Bamboo	336	42.0%	344	43.0%	205	25.6%	885	36.9%	278	34.8%	218	27.3%	1381	34.5%
Earth	28	3.5%	237	29.6%	4	0.5%	269	11.2%	100	12.5%	2	0.3%	371	9.3%
Cement	74	9.3%	46	5.8%	8	1.0%	128	5.3%	38	4.8%	3	0.4%	169	4.2%
Other	0	0.0%	0	0.0%	17	2.1%	17	0.7%	3	0.4%	2	0.3%	22	0.6%
TOTAL	800	100%	800	100%	800	100%	2400	100%	800	100%	800	100%	4000	100%

5.12.6 Trends in household assets and wealth

Respondents were also asked to consider their households' current level of assets and wealth and how these may have changed over the past two years. Overall, the majority of respondents (52%) felt that their assets and wealth remained much the same. However, a third of respondents believed that their level of assets and wealth was decreasing. Similar responses were recorded for most regions except the Giri-affected area where the majority of households (53%) believed their level of assets and wealth was diminishing. This would be in large part due the damage caused by Cyclone Giri.

The responses from the Delta/Coastal Zone were surprising as it was expected that assets and wealth would be increasing for most households in the past two years, as households re-established their homes and livelihoods following Cyclone Nargis. However only 14% of households believed their assets and wealth to be increasing (the second lowest of the regions surveyed).

Table 134:Respondent perceptions of changes in HH assets and wealth over the past 2 years

	Hilly		Dry		Delta/Coastal		LIFTvillages		Control		Giri		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Increasing	129	16.1%	166	20.8%	114	14.2%	409	17.0%	124	15.5%	40	5.0%	573	14.3%
Much the same	420	52.5%	399	49.9%	467	58.4%	1286	53.6%	458	57.2%	335	41.9%	2079	52.0%
Decreasing	251	31.4%	235	29.4%	219	27.4%	705	29.4%	218	27.2%	425	53.1%	1348	33.7%
Total	800	100%	800	100%	800	100%	2400	100%	800	100%	800	100%	4000	100%

The trends in household assets and wealth were examined by land holding and average monthly incomes (Tables 135 and 136). In general, a higher proportion of large land owners believed their assets and wealth to be increasing compared with landless and land-poor households. For example, only 12 % of landless households compared with 22% of households owning more than 20 acres believed their assets and wealth to be increasing.

Table 135:Respondent perceptions of changes in household assets and wealth over the past 2 years, land holding size

	Increasing		Staying much the same		Decreasing		Total	
	Freq	%	Freq	%	Freq	%	Freq	%
no land	232	11.6%	1,039	52.1%	725	36.3%	1,996	100%
<1 acre	12	13.3%	52	57.8%	26	28.9%	90	100%
1-2 acres	88	13.9%	320	50.7%	223	35.3%	631	100%
2+ to 5	116	17.8%	339	51.9%	198	30.3%	653	100%
5+ to 10	65	17.4%	201	53.7%	108	28.9%	374	100%
10+ to 15	23	22.8%	45	44.6%	33	32.7%	101	100%
15+ to 20	20	25.6%	39	50.0%	19	24.4%	78	100%
>20 acres	17	22.1%	44	57.1%	16	20.8%	77	100%
Total	573	14.3%	2,079	52.0%	1,348	33.7%	4,000	100%

A similar but more pronounced trend can be observed when comparing households with different levels of income (Table 136). Forty-seven percent of households earning more than Ks 300,000 per month believed their levels of assets and wealth to be increasing, compared with only 7% of households earning less than Ks 25,000 per month.

Table 136:Respondent perceptions of changes in household assets and wealth over the past 2 years, by household average monthly income

	Increasing		Staying much the same		Decreasing		Total	
	Count	%	Count	%	Count	%	Count	%
Less than Ks 25,000	37	6.9%	259	48.1%	242	45.0%	538	100%
Ks 25,001 - Ks 50,000	162	11.0%	773	52.6%	534	36.4%	1469	100%
Ks 50,001 - Ks 75,000	121	13.6%	467	52.5%	302	33.9%	890	100%
Ks 75,001 - Ks 100,000	98	17.2%	314	55.1%	158	27.7%	570	100%
Ks 100,001 - Ks 150,000	70	25.5%	134	48.9%	70	25.5%	274	100%
Ks 150,001 - Ks 200,000	34	32.7%	57	54.8%	13	12.5%	104	100%
Ks 200,001 - Ks 250,000	12	29.3%	22	53.7%	7	17.1%	41	100%
Ks 250,001 - Ks 300,000	10	28.6%	18	51.4%	7	20.0%	35	100%
Over Ks 300,000	27	46.6%	24	41.4%	7	12.1%	58	100%
Don't know/no response	2	9.5%	11	52.4%	8	38.1%	21	100%
Total	573	14.3%	2079	52.0%	1,348	33.7%	4,000	100%

5.13 Training

In the final section of the household survey, respondents were asked about the vocational training that any member of their households had received in the past three years. Only 11% of households had received any training (Table 137). Roughly half of this training was in crop production (5% of households), 4% of households had received training in livestock production, less than 1% in fishery production, and 4% in other vocational skills.

There was considerable variation in the training received by households in each region. Once again Giri-affected households were disadvantaged; only 4 out of the 800 households had received any training (0.5%) compared with 126 households out of 800 in the Delta/Coastal Zone (16%). Eight percent of households in the Hilly Zone and 7% in the Delta/Coastal Zone had received training in crop production. Not one household in the Giri-affected area had received training in agriculture (either crop or livestock production).

This low rate of training received by households is a reflection of the very limited government extension services constrained by capacity and resources. The Delta/Coastal Zone had received support from NGOs and UN agencies following Cyclone Nargis contributing to the highest number of households that had received training compared with other regions.

Table 137:Number of households receiving vocationaltraining in the past 3 years, by region

	Hilly	Dry	Delta/Coastal	LIFTvillages	Control	Giri	Total

	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Crop production	65	8.1%	36	4.5%	59	7.4%	160	6.7%	45	5.6%			205	5.1%
Livestock	49	6.1%	40	5.0%	31	3.9%	120	5.0%	37	4.6%			157	3.9%
Fisheries					16	2.0%	16	0.7%	10	1.3%			26	0.7%
Other vocation	40	5.0%	34	4.3%	40	5.0%	114	4.8%	32	4.0%	4	0.5%	150	3.8%
Total	118	14.8%	81	10.1%	126	15.8%	325	13.5%	96	12.0%	4	0.5%	425	10.6%

There was little difference in the training received by households owning different sizes of land holdings (Table 138). The exception was training in crop productionwhere there was atrend for households with larger land holdings to have been more likely to receive training. The percentage of households that received training in crop production rose from 2.6% of landless households to 13% of households owning more the 20 acres of land.

Table 138:Vocational training received by sample HH in the past 3 years, by land holding size

HH land holding (acres)	Total HHs in land class	Crop production		Livestock		Fisheries		Other vocation		Total	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
no land	1996	51	2.6%	69	3.5%	23	1.2%	67	3.4%	210	10.5%
<1 acre	90	5	5.6%	0	0.0%	0		2	2.2%	7	7.8%
1-2 acres	631	44	7.0%	29	4.6%	1	0.2%	31	4.9%	105	16.6%
2+ to 5	653	36	5.5%	26	4.0%	1	0.2%	20	3.1%	83	12.7%
5+ to 10	374	39	10.4%	22	5.9%	0		21	5.6%	82	21.9%
10+ to 15	101	11	10.9%	6	5.9%	0		4	4.0%	21	20.8%
15+ to 20	78	9	11.5%	4	5.1%	1	1.3%	3	3.8%	17	21.8%
>20 acres	77	10	13.0%	1	1.3%	0		2	2.6%	13	16.9%
Total	4,000	205	5.1%	157	3.9%	26	0.7%	150	3.8%	538	13.5%

Note: Some households participated in more than one training event. Hence the number of training events received by households (538) exceeds the number of households who received training in the past 3 years (425).

There was no clear trend in the training received by households reporting different average monthly incomes (Table 139). However, overall only 7% of households earning less than Ks 25,000 per month received any vocational training while 17% of the households earning over Ks 300,000 per month received training. This may be the result of the limited free time available to the poorest households to attend training or their relative marginalization. Such factors need to be considered in the design and delivery of training programs.

Table 139:Vocational training received by sample households in the past 3 years, by household average monthly income

Avg monthly HH income (Ks)	No. HHs in category	Crop production		Livestock		Fisheries		Other vocation		Total	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
<Ks 25,000	538	17	3.2%	12	2.2%	2	0.4%	8	1.5%	39	7.2%
25,001 - 50,000	1,469	75	5.1%	73	5.0%	13	0.9%	54	3.7%	215	14.6%
50,001 - 75,000	890	47	5.3%	31	3.5%	8	0.9%	29	3.3%	115	12.9%
75,001 - 100,000	570	27	4.7%	23	4.0%	2	0.4%	36	6.3%	88	15.4%
100,001 - 150,000	274	16	5.8%	11	4.0%			12	4.4%	39	14.2%
150,001 - 200,000	104	11	10.6%	4	3.8%			2	1.9%	17	16.3%
200,001 - 250,000	41	4	9.8%					2	4.9%	6	14.6%
250,001 - 300,000	35	3	8.6%	1	2.9%			3	8.6%	7	20.0%
Over Ks 300,000	58	4	6.9%	2	3.4%	1	1.7%	3	5.2%	10	17.2%
Don't know/no resp	21	1	4.8%					1	4.8%	2	9.5%
Total	4,000	205	5.1%	157	3.9%	26	0.7%	150	3.8%	538	13.5%

Overall, more male household members received training than female household members; 301 compared with 231 respectively. This was particularly the case for training in crop and livestockproduction where roughly two-thirds of participants were male. However, more female household members attended training in *other vocations*. The Dry Zone stood out in terms of the relative number of female members receiving training; 77% of household members who received vocational training in the past three years were female and only 23% were male. Very little of the training was attended by both male and female household members (1%). It is unclear whether the agencies that delivered this training promoted the participation of women or the participation of both male and female household members. However it is clear from the FGDs and other studies that both

male and female household members play important roles in crop, livestock and fishery production.Training programmes should take these roles into account to maximize training outcomes.

Table 140:Sex of HH members who received vocational training in the past 3 years, by region

		Hilly		Dry		Delta/Coastal		LIFTvillages		Control		Giri		Total	
		Count	C %	Count	C %	Count	C %	Count	C %	Count	C %	Count	C %	Count	C %
Crop production	Male	50	76.9%	11	30.6%	40	67.8%	101	63.1%	33	73.3%			134	65.4%
	Female	13	20.0%	25	69.4%	19	32.2%	57	35.6%	12	26.7%			69	33.7%
	Both	2	3.1%					2	1.2%					2	1.0%
	Total	65	100%	36	100%	59	100%	160	100%	45	100%			205	100%
Livestock	Male	35	71.4%	4	10.0%	19	61.3%	58	48.3%	26	70.3%			84	53.5%
	Female	12	24.5%	36	90.0%	12	38.7%	60	50.0%	10	27.0%			70	44.6%
	Both	2	4.1%					2	1.7%	1	2.7%			3	1.9%
	Total	49	100%	40	100%	31	100%	120	100%	37	100%			157	100%
Fisheries	Male					11	68.8%	11	68.8%	5	50.0%			16	61.5%
	Female					5	31.2%	5	31.2%	5	50.0%			10	38.5%
	Both														
	Total					16	100%	16	100%	10	100%			26	100%
Other vocation	Male	17	42.5%	10	29.4%	20	50.0%	47	41.2%	17	53.1%	3	75.0%	67	44.7%
	Female	23	57.5%	24	70.6%	20	50.0%	67	58.8%	14	43.8%	1	25.0%	82	54.7%
	Both									1	3.1%			1	0.7%
	Total	40	100%	34	100%	40	100%	114	100%	32	100%	4	100%	150	100%
Total	Male	102	66.2%	25	22.7%	90	61.6%	217	52.9%	81	65.3%	3	75.0%	301	55.9%
	Female	48	31.2%	85	77.3%	56	38.4%	189	46.1%	41	33.1%	1	25.0%	231	42.9%
	Both	4	2.6%	0	0.0%	0	0.0%	4	1.0%	2	1.6%	0	0.0%	6	1.1%
	Total	154	100%	110	100%	146	100%	410	100%	124	100%	4	100%	538	100%

Finally respondents were asked whether their households had used any skills acquired during the vocational training received during the past 3 years to improve household livelihoods or food security (Table 141). While only few households had received vocational training in the past 3 years the training received was useful. Approximately two-thirds of respondents reported that their households had applied skills gained in training to improve their households' livelihoods or food security. The highest application of skills was from training in crop production (70% of households who had received such training) and the lowest was from training in *other vocations* (60%).

These results suggest that considerable benefits could be achieved through more extensive programmes of vocational training; only few households had received training and it appearsthat training has the potential to be effective in improving household livelihoods and food security.

Table 141:Frequency of householdsusing skills acquired during vocational training received in the past 3 years to improve household livelihoods or food security, by region

	Hilly		Dry		Delta/Coastal		LIFT villages		Control		Giri		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Crop production	48	73.8%	22	61.1%	47	79.7%	117	73.1%	27	60.0%			144	70.2%
Livestock	33	67.3%	24	60.0%	26	83.9%	83	69.2%	20	54.1%			103	65.6%
Fisheries					12	75.0%	12	75.0%	5	50.0%			17	65.4%
Other vocations	25	62.5%	15	44.1%	25	62.5%	65	57.0%	22	68.8%	3	75.0%	90	60.0%
Total	106	68.8%	61	55.5%	110	75.3%	277	67.6%	74	59.7%	3	75.0%	354	65.8%

6. Summary and conclusions

The survey results quite clearly point to considerable disadvantage faced by the poorest and landless households in the survey relative to households with larger landholdings and higher monthly incomes. Perceptions from these poorest and most vulnerable households, born out by both the household sample survey and FGDs, were that their situations were not improving and if anything were getting worse.

The survey also underlinedthe considerable regional differences in livelihoods and food security, as expected. The Giri-affected area stood out as the most disadvantaged in many measures. The

Delta/Coastal Zone displayed the greatest inequity among households having both the largest proportion of landless households but also easily the largest average land holdings among those households that owned land.

In summary the key findings that illustrate these tendencies are as follows:

School attendance

- Overall a very similar percent of school-aged boys and girls were reported to be attending school (approximately 70%).
- There was a tendency for households owning larger areas of land and earning higher monthly incomes to be more likely to send their children to school.
- In the Giri-affected areas only 52 % of school-aged children in the poorest households (less than Ks 25,000 per month) attended school.

Livelihoods

- Casual labour was the most common source of household income with agriculture the second most common.
- Landless households were most reliant on casual labour for their livelihoods.
- In the Delta/Coastal Zone casual labour was the most important source for almost 70% of the poorest households (less than Ks 25,000 per month). This highlights the vulnerability of the poor and landless to factors that adversely influence demand for labour.

Household incomes

- The most common household monthly income range was Ks 25,000 to Ks 50,000 in all zones (approximately USD $30 to $60 per month).
- Farming households with less than 2 acres of land were not noticeably wealthier than landless households (in terms of reported income).
- There was a correlation between area of landholding and average monthly income; households owning larger areas of land on average reported higher monthly incomes.
- Overall, 44% of households reported decreasing incomes compared with the previous year; 40% reported that incomes were much the same as the previous year. However, two-thirds of respondents from the Giri-affected townships reported decreasing income reflecting the serious impact of Cyclone Giri.

Casual employment

- 50% of households had members who had worked for casual wages in the past 12 months, rising to 73% of households with no land. Only 2.6% of households with more than 20 acres of land had members who had worked for casual wages.
- Overall nearly twice as many days of casual work was reportedly undertaken by men than women in the past 12 months. Males dominated casual work in the fishery and forestry sectors but in agriculture in the Hilly and Dry Zones there were more days worked by women.
- 41% of respondents whose households had worked casually for wages in the previous 12 months believed that casual work opportunities had decreased (45% reported it was “the same as previous year”)
- 58% of respondents from Giri-affected areas believed casual work had decreased in their area.
- FGDs in many villages tended to confirm that it was becoming increasingly difficult to find casual work locally.
- There was a sizeable difference in casual wages paid to men and women. The FGDs reported that women generally received Ks 500 to Ks 1,000 less than men per day of casual work. Depending on the nature of the work and the region, men were commonly paid between Ks 1,500 and Ks 3,000 per day and women between Ks 1,000 and Ks 2,500 per day.

Food security

- Households from Giri-affected areas reported the lowest HDDS (i.e. the least diversified diets) and the lowest MAHFP.
- Households in Giri-affected areas were the most vulnerable with less than 20% of households reporting adequate food throughout the year.
- As a general trend HDDS and MAHFP increased with reported monthly income and area of land owned.
- Similarly HHS scores were generally higher for the landless and poorest households.
- Despite the timing of the survey in a time before the main monsoon harvest the Household Hunger Scale (HHS) indicated that no region in the sample had a median score above zero.
- The Delta/Coastal Zones and Giri-affected areas had the largest proportion of households with moderate or severe hunger (HHS scores greater than 1). Nearly 10% of households with no land reported moderate or severe hunger in the 4 weeks previous to the survey. The above examples clearly illustrate the benefits of targeting landless and low income households for interventions aiming to improve food security.
- There was a clear tendency for households with increasing levels of land ownership and average monthly income to have had less need to adopt coping strategies.

Access to land

- Land is the most important livelihood asset for households in rural Myanmar. Ownership of sufficient land can ensure income and food security. However ownership of land is not universal and highly inequitable in its distribution amongst the rural population.
- Within the sample of 4,000 households 50% of households did not own land. Only a quarter of households (26%) in the Hilly Zone did not own land while 72% did not own land in the Delta/Coastal Zone.
- There were also big differences in the size of land holdings. The very skewed distribution of land ownership in the Delta/Coastal Zone raises concerns of equity when providing agricultural assistance in this area unless programmes target the quite small percentage of small land owning households (owning say less than 5 acres).
- Landless participants in the FGDs reported that the opportunity for them to gain access to land for cultivation was very limited.

Crop production

- Rice was clearly the most commonly planted monsoon crop, but not everywhere. Corn or maize was the most common in the Hilly Zone with 44% of all households that grew monsoon crops planting it. Similarly sesame seed was the most commonly planted crop in the Dry Zone (35% of all households that grew monsoon crops). Ninety-eight percent of all households that grew monsoon crops in the Delta/Coastal and Giri-affected areas planted rice.
- Taking all crops and regions together, 43% of respondents believed the 2010 monsoon crop to have been worse than average, 38% believed yields to have been average, and 19% better than average. 73% respondents from Giri-affected areas reported that it was worse than average the result of Cyclone Giri which hit the area just before harvest.
- There was a greater diversity of post-monsoon crops planted compared with the monsoon plantings. Groundnuts (peanuts) were the most widely planted(16% of the households that grew post-monsoon crops). Rice was the next most common but was not widely planted outside the Delta/Coastal Zone
- 42% of all respondents whose households grew crops after the 2010 monsoon harvest believed the yields were worse than average, 37% believed that yields were average, and 21% better than average. Again the large majority of respondents from Giri-affected areas believed yields to have been worse than average (68%)
- The most common constraint to crop production was the lack of inputs or lack of money to buy them. Limited capital equipment (tools, draft animals, mechanical power) and land were also common constraints.

- Overall, constraints to crop production were generally associated with low-intensity production techniques that could be addressed with increased availability of credit, technical advice and improved access to markets. However, there were also structural problems related to access to land, and problems associated with lack of infrastructure for irrigation and water control (embankments).

Marketing

- Households rarely organized themselves for group/collective marketing of their crops. Overall 90% of households sold their crops individually and consequently had little bargaining power with buyers and traders.
- Household knowledge of crop prices and access to price information was lacking. Nearly a quarter of households marketing crops had no price information before they sold their crops.
- Larger land holders were more likely to have known the price of their main crops before selling them.
- Crop price information was predominantly from family and friends and crop buyers (dealers/brokers).
- The majority of households sold their main crop immediately upon harvest (62%). Only 17% of households sold their crops 2 or more months after harvest.
- Larger and wealthier agricultural producers were more likely to store and sell their crops some months after the main harvest season (and realize higher prices).

Credit and indebtedness

- A large majority of households (83%) had taken out a loan in the 12 months before the survey.
- Households with no land and households with large areas of land were just as likely to have borrowed money in the 12 months prior to the survey. But households with higher incomes were less likely to have borrowed money in the 12 months prior to the survey.
- Family and friends were the most common sources of loans among households in the survey. Forty-two percent of all households borrowed from family and friends, and 31% borrowed from money lenders. Shopkeepers were the next most common source of loans (19%).
- Households with no land were most reliant on family and friends as a source of loans (48%), while only 21% of households owning more than 20 acres borrowed from this source.
- Most loans were for purchases of food (44%) clearly illustrating the importance of credit as a coping strategy for household food security. This is particularly the case for households that did not own land or had low monthly incomes.
- Households owning larger areas of land or with high monthly incomes rarely used their loans to purchase food. Households owning the larger areas of land primarily used their loans for purchasing agricultural inputs.
- For most rural households debt is cyclic. The FGDs indicated that farming households often borrowed to sow their crops and repaid the loans upon harvest. Landless households often borrowed when there was little demand for casual labour and repaid when work was plentiful. This seasonality of debt is important to understand as levels of indebtedness will vary throughout the year.
- In general the level of household debt rises with land holding size and average monthly incomes. But households with larger areas of land and higher incomes have a greater capacity to repay these high levels of debt.
- High levels of indebtedness are not necessarily a problem as credit can be used to support investment at times when household liquidity is low. Indebtedness is a problem if rates of interest are usurious and if debt levels exceed a households' capacity to comfortably repay.
- Most respondents (63%) reported that their households' debts were increasing compared with previous years with 85% of households in Giri-affected areas reporting increased debt.
- The least wealthy (in terms of land and income) reported the highest proportion of households with increasing debt. This increasing level of indebtedness amongst the poorest households was confirmed in the FGDs.

- FGD participants reported that the poor had to rely on family and friends for small loans, or shopkeepers to provide food items on credit. Few others lent money to casual labourers and the very poor. Wealthier households generally had more options for credit: pawning gold or other valuable items and receiving lower interest rates. Farming households could also borrow from the MADB or pre-sell their crops to traders/brokers.

Assets and wealth

- There was little shared ownership of agricultural equipment and machinery (under 50 cases in the sample of 4,000 households) suggesting that interventions that promote shared ownership may be difficult to sustain.
- Mechanized equipment (power tillers, power threshers, irrigation pumps and tractors) were rarely owned. Backpack sprayers for pest control were also rare among sampled households. This low level of investment in agricultural equipment and machinery suggests that considerable gains in productivity and crop quality can be made particularly with irrigation and pest control equipment and possibly post-harvest equipment.
- Only 7% of the sample households were connected to the electricity grid with most households relying on lamps or candles for lighting.
- Access to electricity either from the grid or generators (other than village generators) was loosely correlated with level of household average monthly income.
- Sources of cooking fuel were similar between regions with a very high reliance on fuel wood. FGDs underlined the importance of fuel wood. Especially in the Giri-affected villages the community had to travel long distances to collect fuel wood. These results suggest that community forestry, agroforestry and fuel efficient stoves may be important areas for support in some locations.
- The Giri-affected area scored the lowest average household asset ownership score, consistent with the region's scoring in other measures of wealth.
- Asset ownership was correlated with household land holding size and household average monthly income.
- The majority of respondents (52%) in the sample considered that their households' assets and wealth remained much the same. However, a third believed that their household's level of assets and wealth was decreasing. Similar responses were recorded for most regions except the Giri-affected area where the majority of households (53%) believed their level of assets and wealth was diminishing.
- A higher proportion of households owning large areas of land and households with high monthly incomes believed their assets and wealth to be increasing compared with landless and land-poor households.

Training

- Only 11% of households had received any vocational training in past 3 years. The Delta/Coastal Zone had seen most training. Not one household in the Giri-affected area had received training in agriculture (either crop or livestock production).
- Overall, more male household members received training than female household members; 301 compared with 231 respectively.
- While only few households had received vocational training in the past 3 years the training received was useful. Approximately two-thirds of respondents reported that their households had applied skills gained in training to improve their households' livelihoods or food security.
- These results suggest that considerable benefits could be achieved through more extensive programmes of vocational training as only few households had received training but nevertheless training had the potential to be effective in improving household livelihoods and food security.

ANNEX A – List of villages covered in the household survey

Region	Township	IP	LIFT/control	Village Tract	Village
Delta/Coastal	Bogale	GRET	LIFT	(Kyun Nyo Gyi) Kyun Hteik	La Tar Chaung Hpyar
Delta/Coastal	Bogale	WHH	LIFT	Chaung Gyi Wa	Ywar Thit
Delta/Coastal	Bogale	WHH	LIFT	Hay Man Nyi Naung	Nyi Naung
Delta/Coastal	Bogale	GRET	LIFT	Ma Gu	Dhamma Rek Khi Ta
Delta/Coastal	Bogale	GRET	LIFT	Ma Gu	Thu Kha Ba La
Delta/Coastal	Bogale	GRET	LIFT	Pa Da Myar Kone	Pein Hne Chaung
Delta/Coastal	Bogale	WHH	LIFT	Pyin Boe Gyi	Dhamma Thu Kha
Delta/Coastal	Bogale	WHH	LIFT	Sa Bai Kone	Za Gar Lun Kone
Delta/Coastal	Bogale	WHH	LIFT	Tha Zin Kone	Ka Tet Kone
Delta/Coastal	Bogale	WHH	LIFT	Thone Htat	Ba Wa Thit
Delta/Coastal	Bogale	WHH	Control	Pyin Boe Gyi	Pyin Boe Gyi
Delta/Coastal	Bogale	WHH	Control	Pyin Boe Gyi	Pyin Boe Lay
Delta/Coastal	Bogale	GRET	Control	Hpar Yar Chaung	Ma Yar
Delta/Coastal	Gwa	MERN	LIFT	Gwa-ward	Myo-ma
Delta/Coastal	Gwa	MERN	LIFT	Kine-khon VT	Kine-khon
Delta/Coastal	Gwa	MERN	LIFT	Kyein-ta-li ward	Ward-1
Delta/Coastal	Gwa	MERN	LIFT	Laune-kyoe	Longg-kyoe
Delta/Coastal	Gwa	MERN	LIFT	Sup-twher	Sup-thwar
Delta/Coastal	Gwa	MERN	LIFT	Ya-hai-katoh	Ya-hai-katoh
Delta/Coastal	Gwa	MERN	Control	Nyaung Chaung	Zee Khon
Delta/Coastal	Gwa	MERN	Control	Thea Kone (Kwin Thone Sint)	Thea Kone
Delta/Coastal	Labutta	Mercy Corps	LIFT	Ah Mat	Ah Mat
Delta/Coastal	Labutta	Mercy Corps	LIFT	Bi Tut	Htone Bu Kya Ah Wa
Delta/Coastal	Labutta	Mercy Corps	LIFT	Da Ni Seik	Pein Hne Kone
Delta/Coastal	Labutta	ADRA	LIFT	Hlwa Zar (Pyinsalu Sub-township)	Hlwa Zar
Delta/Coastal	Labutta	ADRA	LIFT	Hlwa Zar (Pyinsalu Sub-township)	Let Pan Kone
Delta/Coastal	Labutta	Mercy Corps	LIFT	Htin Pon Kwin	Nga Hpei Ta Yar
Delta/Coastal	Labutta	Mercy Corps	LIFT	Kan Bet	Pauk Tu
Delta/Coastal	Labutta	LEAD	LIFT	Kone Gyi (Pyinsalu Sub-township)	Kone Gyi
Delta/Coastal	Labutta	LEAD	LIFT	Kone Gyi (Pyinsalu Sub-township)	Lay Yin Kwin
Delta/Coastal	Labutta	Mercy Corps	LIFT	Kyu Taw	Chaung Kwe Gyi
Delta/Coastal	Labutta	Mercy Corps	LIFT	Maung Nge	Boe Khway Gyi
Delta/Coastal	Labutta	AVSI	LIFT	Pyin Ah Lan	Yae Cho Kan
Delta/Coastal	Labutta	LEAD	LIFT	Tei Pin Kaing (Pyinsalu Sub-township)	Kant Ba Lar Chaung
Delta/Coastal	Labutta	ADRA	LIFT	Yae Twin Seik (Pyinsalu Sub-township)	Ka Zaung Chaung
Delta/Coastal	Labutta	Mercy Corps	LIFT	Bone Gyi Kone	Hlwa Zin Kone
Delta/Coastal	Labutta	Mercy Corps	LIFT	Shaw Chaung	Ka Ti Par Ywar Thit
Delta/Coastal	Labutta	Mercy Corps	LIFT	Tha Nat Hpet	Gon Hnyin Tan
Delta/Coastal	Labutta	Mercy Corps	LIFT	Baing Daunt Chaung	Baing Daunt Chaung
Delta/Coastal	Labutta	Mercy Corps	LIFT	Hlwa Zar	Kwa Kwa Lay
Delta/Coastal	Labutta	Mercy Corps	LIFT	Gon Hnyin Tan	Leik Thit
Delta/Coastal	Labutta	ADRA	Control	Hlwa Zar (Pyinsalu Sub-township)	Ka Nu Ka Mar
Delta/Coastal	Labutta	AVSI	Control	Pyin Ah Lan	Mingala Thaung Tan
Delta/Coastal	Labutta	Mercy Corps	Control	Nyaung Chaung	Boe Khway Gyi
Delta/Coastal	Labutta	Mercy Corps	Control	Koke Ko (Pyinsalu Sub-township)	Ka Nyin Kwin
Delta/Coastal	Labutta	Mercy Corps	Control	Sar Chet (Pyinsalu Sub-township)	Ka Ka Yo
Delta/Coastal	Labutta	Mercy Corps	Control	Ka Nyin Kone	Hpoe Thin (a) Hpa Yar Lay Su
Delta/Coastal	Labutta	LEAD	Control	Salu Sate	Salu Sate
Delta/Coastal	Maruk U	Mercy Corps	LIFT	Htan Ma Rit	Oke HPoke Kan
Delta/Coastal	Maruk U	Mercy Corps	LIFT	Sin Oe	Chaung Thit
Delta/Coastal	Maruk U	Mercy Corps	LIFT	Tin Nyo	Pin Nyar Thi

Region	Township	IP	LIFT/control	Village Tract	Village
Delta/Coastal	Mawlamyaingkyun	GRET	LIFT	Kyet Shar	Kyun Chaung
Delta/Coastal	Mawlamyaingkyun	GRET	LIFT	Myat Thar Wa	Myat Thar Wa
Delta/Coastal	Mawlamyaingkyun	GRET	LIFT	Pyar Mut Shaw Chaung	Kyon La Tar Wa
Delta/Coastal	Mawlamyaingkyun	GRET	Control	in Kyon La Tar Kyaung Su	Kyon La Tar Chaung Hpyar
Delta/Coastal	Pyapon	Pact	LIFT	Bant Bway Su	Bant Bway Su
Delta/Coastal	Pyapon	Pact	LIFT	Day DaLu(AhMar Sub-Tsp)	War Chaung
Delta/Coastal	Pyapon	Pact	LIFT	Kani	Kani
Delta/Coastal	Pyapon	Pact	LIFT	Kun Daing	Kun Daing
Delta/Coastal	Pyapon	Pact	LIFT	Kyet Hpa Mway Zaung	Ka Nwi
Delta/Coastal	Pyapon	Pact	LIFT	Kyon Soke Gon HnyinTan	Kyon Soke
Delta/Coastal	Pyapon	Pact	LIFT	ThaMein HtawThein Kone	Tha Mein HtawThein Kone
Delta/Coastal	Pyapon	Pact	LIFT	Zee Baung	Kyon Kan Wa
Delta/Coastal	Pyapon	Pact	Control	Kyone Ku	Ah Kyi Ka Yin Su
Delta/Coastal	Pyapon	Pact	Control	Kyone Kyaik	Kyone Thin
Delta/Coastal	Pyapon	Pact	Control	Ah Char Ka Lay	Chauk Eain Tan
Dry	Aung Lan	Actionaid	LIFT	Nyaung Pin Seik	Nyaung Pin Seik
Dry	Aung Lan	Actionaid	Control	Byan Di	Kyauk Oo Taung
Dry	Ayadaw	Helpage	LIFT	Ye Chin	Kywe Chan
Dry	Ayadaw	UNDP	LIFT	Kyauk Pyauk	Kyauk Pyauk(N)
Dry	Ayadaw	UNDP	LIFT	War Tan	Sai Gyi Daw
Dry	Ayadaw	UNDP	LIFT	Don Dit	Zee Pin Wine
Dry	Ayadaw	HAI	Control		Ta Mar Pin Kone
Dry	Ayadaw	UNDP	Control	Yeaeyo	Aung San
Dry	Chauk	UNDP	LIFT		Kin Mon Chone
Dry	Chauk	UNDP	LIFT		Ohan Myar Gyi
Dry	Chauk	UNDP	LIFT		Than Kone
Dry	Chauk	UNDP	Control	Chaung Tet	King Htauk Kan
Dry	Chaung U	UNDP	LIFT	Nga Lone Tin	Nga Lone Tin
Dry	Kyaukpadaung	UNDP	LIFT		Kyweku
Dry	Kyaukpadaung	UNDP	LIFT		Pyin Ma Gyi
Dry	Kyaukpadaung	UNDP	LIFT		Atar Ywar Ma
Dry	Kyaukpadaung	UNDP	LIFT		Kha Paung Kone
Dry	Kyaukpadaung	UNDP	LIFT		Myouk Kone
Dry	Kyaukpadaung	UNDP	LIFT		Seik Htain (S)
Dry	Kyaukpadaung	UNDP	LIFT		Twin Ma
Dry	Kyaukpadaung	UNDP	Control	Hlaing Thar	Pin Pu
Dry	Kyaukpadaung	UNDP	Control		Go Kyin
Dry	Magway	ECODEV	LIFT	Kayin (Kan Yin)	Kayin (Kan Yin)
Dry	Magway	ECODEV	LIFT	In Taing Gyi	Daung Gyi
Dry	Magway	UNDP	LIFT		Aye Mya Tharyar-S
Dry	Kyaukpadaung/ Magway	UNDP	LIFT		Kayin (Kan Yin)
Dry	Magway	UNDP	LIFT		Pho Lay Lone
Dry	Magway	UNDP	LIFT	Sar Taing Kan	War Guan San Pya
Dry	Magway	UNDP	Control	Inn Daing Gyee	Daung They Chaung
Dry	Magway	UNDP	Control	Gyoke Kone	Inn Gyinn
Dry	Mahlaing	IDE	LIFT		Taung Kone
Dry	Myaing	IDE	LIFT	Myo Thar	Pauk Taw Kone
Dry	Myaing	IDE	Control	Kyauk Sauk	Kyauk Sauk
Dry	Myaung	UNDP	LIFT	Bu Kaing	Bu Kine(E)
Dry	Myaung	UNDP	LIFT	Za Yat Kone	Nga Hmyaung Taung
Dry	Myaung	UNDP	LIFT		Taung Yat
Dry	Myaung	UNDP	Control	Ohn Nae Boke	Ohn Nae Boke
Dry	Myaung	UNDP	Control	Ohn Nae Boke	Mya San
Dry	Myothit	DPDO	LIFT	Lay Taing Sin	Thar Hmyar
Dry	Natmauk	IDE	LIFT	Yae Htwet	Kyauk Te
Dry	Natogyi	IDE	LIFT	Htein Ba Lar	Htein Ba Lar
Dry	Nyaung Oo	UNDP	LIFT		Htan Ngal Taw
Dry	Nyaung Oo	UNDP	LIFT		Mone Taing
Dry	Nyaung Oo	UNDP	LIFT		San Kan
Dry	Nyaung Oo	UNDP	LIFT		Ywar Pa Lae

Region	Township	IP	LIFT/control	Village Tract	Village
Dry	Nyaung Oo	UNDP	Control	Nyaung Ni Kyin	Nyaung Ni Kyin
Dry	Pakokku	UNDP	LIFT	Ku	Yae Kyi
Dry	Pakokku	UNDP	LIFT	Myin Win	Myin Win
Dry	Pakokku	UNDP	Control		Be Gyi
Dry	Pyawbwe	Mercy Corps	LIFT	Myin Te	Kyi Taing Kone
Dry	Salingyi	IDE	LIFT	Than Ma Taw	Than Ma Taw
Dry	Seikphyu	ADRA	LIFT	Ywar Thit Gyi	Ywar Thit Gyi
Dry	Taung Dwin Gyi	UNDP	LIFT		Kalama
Dry	Taung Dwin Gyi	UNDP	LIFT		Miou Aung
Dry	Taung Dwin Gyi	UNDP	LIFT		Poe Sar Khin
Dry	Taung Dwin Gyi	UNDP	LIFT		Thae Pyin
Dry	Taung Dwin Gyi	UNDP	Control	Kokeko Kone	Kyet Yoe San
Dry	Taung Tha	IDE	LIFT	Kan Sint	Kan Sint
Dry	Taung Tha	UNDP	LIFT		Kyaung Oho
Dry	Taung Tha	IDE	Control	Ayeywar	Ayeyar
Dry	Thazi	Oxfam	LIFT	Hnget Gyi Thaik	Than Pawe
Dry	Yay Nan Chaung	UNDP	LIFT		Aung Thar
Dry	Yay Nan Chaung	UNDP	LIFT		Lay Tine Sin
Dry	Yay Nan Chaung	UNDP	LIFT		Pinn Wa
Dry	Yay Nan Chaung	UNDP	LIFT		Thit Ta Bway (N)
Dry	Yay Nan Chaung	UNDP	Control	Thone Sae Chauk	Kyee Myint
Dry	Yay Nan Chaung	UNDP	Control	Kyan Kine Kyune	Shar Tapin
Giri	Kyauk Phyu		Giri	Chaung Wa	Ku Lar Bar
Giri	Kyauk Phyu		Giri	Kan Dee	Min Tet Taung
Giri	Kyauk Phyu		Giri	Kyauk Pyauk	Kyauk Pyauk
Giri	Kyauk Phyu		Giri	Min Chaung	Myo Chaung
Giri	Kyauk Phyu		Giri	Nga Seint Pyin	Ma Au Taw
Giri	Kyauk Phyu		Giri	Nga Seint Pyin	Maw Gyi
Giri	Kyauk Phyu		Giri	Nga Seint Pyin	Mi Kyaung Yae Thauk
Giri	Kyauk Phyu		Giri	Pyin Hpyu Maw	Pyin Hpyu Maw
Giri	Kyauk Phyu		Giri	Taung Yin	Ku Lar Bar Taung
Giri	Kyauk Phyu		Giri	Thea Chaung	Kapi Chaung
Giri	Kyauk Phyu		Giri	Ya Ta Na	Laung Khoke Taung (Ngwe Twin Tu)
Giri	Min Pya		Giri	Kin Seik	Than Taung (Upper)
Giri	Min Pya		Giri	Thein Taung	Thein Taung
Giri	Min Pya		Giri	San Bar Lay	Taung Taik
Giri	Min Pya		Giri	Thin Ga Net	Thin Ga Net
Giri	Min Pya		Giri	Ah Wa	Min
Giri	Min Pya		Giri	Ah Htet Hnget Pyaw Chaung	Hpay Thar Pyin (Upper)
Giri	Min Pya		Giri	Kyaung Taung	Gwa Son
Giri	Min Pya		Giri	Kay Tha Lar Chaung Wa	Chaung Hpyar
Giri	Min Pya		Giri	Taung Shey Pyin	Tha Pyoke Yay Myet
Giri	Min Pya		Giri	Taung Shey Pyin	Pyin Gyi
Giri	Min Pya		Giri	Kyein Chaung	Kyein Chaung
Giri	Min Pya		Giri	Hpa Laung Pyin	Yay Ngan Sae
Giri	Min Pya		Giri	Thar Yar Kone	Kyauk Khoke
Giri	Min Pya		Giri	Yan Htaing	Kha Maung Taw
Giri	Min Pya		Giri		Kyaung Shae Kyaung
Giri	Min Pya		Giri	Khaung Laung Chaung	Khaung Laung Chaung
Giri	Min Pya		Giri	Chaung Shey	Chaung Shey
Giri	Myay Pon		Giri	Ah Lel Kyun	Ah Lel Kyun
Giri	Myay Pon		Giri	Daing Bon	Daing Bon
Giri	Myay Pon		Giri	Gaung Hpyu	Wet Gaung
Giri	Myay Pon		Giri	Kan Htaunt Gyi	Kan Htaunt Gyi
Giri	Myay Pon		Giri	Kaw	Kaw
Giri	Myay Pon		Giri	Kyay Taw	Kyay Taw
Giri	Myay Pon		Giri	Kyun Thar Yar	Kyun Thar Yar
Giri	Myay Pon		Giri	Laung Da Reik	Thay Chaung
Giri	Myay Pon		Giri	Nga Man Ye Gyi	Lwan Lone Paik (Htein Pin Myint)

Region	Township	IP	LIFT/control	Village Tract	Village
Giri	Myay Pon		Giri	Ngwe Twin Tu	Ngwe Twin Tu
Giri	Myay Pon		Giri	Pauk Tu Taung	Pauk Tu Taung
Giri	Myay Pon		Giri	Pin Kat Chaung	Ka Paing Chaung
Giri	Myay Pon		Giri	Pyayt Chaung	Pyayt Chaung
Giri	Myay Pon		Giri	Seik Ta Ra	Seik Ta Ra
Giri	Myay Pon		Giri	Sin Kyat	Sin Kyat
Giri	Myay Pon		Giri	Tha Yet Taung	Tha Yet Taung
Giri	Myay Pon		Giri	Yae Ni Gyi	Thin Paung Chaung
Giri	Myay Pon		Giri	Yet Chaung	War Khoke Chaung
Giri	Myay Pon		Giri	Yoe Sa Nwin	Oke Kan
Giri	Pauktaw		Giri	Thit Poke	Thit Poke
Giri	Pauktaw		Giri	Pon Nar Gyi	Thar Zay Kone
Giri	Pauktaw		Giri	Hpa Tu Gyi	Ah Lel
Giri	Pauktaw		Giri	Kyauk Su	Mauk Pyar
Giri	Pauktaw		Giri	Byaing Thit	Ma Nyin Kaing
Hilly	Bahmo	SWISSAID	LIFT	Moe Hping	Shwe Si
Hilly	Falam	GRET	LIFT	C.Zamual	C.Zamual
Hilly	Falam	GRET	LIFT	Simzawl	Simzawl
Hilly	Falam	GRET	Control	Mangkheng	Mangkheng
Hilly	Hakha	GRET	LIFT	Khawbe	Nabual
Hilly	Hakha	GRET	LIFT	Tinam	Tinam
Hilly	Hopong	Metta	LIFT	Lon Hay	Kho Lai
Hilly	Hopong	Metta	LIFT	Lwe On	Naung Khom
Hilly	Hopong	Metta	Control	Sa Ngaw	Ho Hti
Hilly	Hsihseng	Metta	LIFT	Ban Phwee	Saw Sar(S)
Hilly	Hsihseng	Metta	LIFT	Lwe Put	Twe Pu
Hilly	Hsihseng	Metta	LIFT	Par Law Pakae	Naung Lat
Hilly	Hsihseng	Metta	LIFT	Taung Shay	Hti Son
Hilly	Hsihseng	Metta	Control	Par Law Par Kel	Naung San Bat
Hilly	Kalaw	UNDP	LIFT	La Mong	La mine Ywr Thit
Hilly	Kalaw	UNDP	LIFT		Alae Pine
Hilly	Kalaw	UNDP	LIFT		Naung Lwe
Hilly	Kalaw	UNDP	Control	Shwe Min Phone	Taung Peit
Hilly	Kyaukme	UNDP	LIFT		Man Lwe
Hilly	Kyaukme	UNDP	LIFT		Pan Hai
Hilly	Kyaukme	UNDP	LIFT		Myin Win
Hilly	Kyaukme	UNDP	LIFT		Shwe Kyaung
Hilly	Kyaukme	UNDP	LIFT		Pan Kwan
Hilly	Kyaukme	CESVI	LIFT	Ta Khun Taing	Hke Moon
Hilly	Kyaukme	UNDP	Control	Nant Hu Taung	Nant Hu Taung
Hilly	Kyaukme	UNDP	Control		Pan Hpyet
Hilly	Machanbaw	Metta	LIFT		In Wint Baw
Hilly	Myitkyina	SWISSAID	LIFT	Ah Kye	Ah Kye
Hilly	Myitkyina	SWISSAID	LIFT	Ah Kye	Maw Hpawng (Upper)
Hilly	Moe Mauk/Myitkyina	SWISSAID	LIFT		Pam Ma Ti
Hilly	Myitkyina	SWISSAID	Control	Ah Kye	Hpa Raw
Hilly	Nawngh Kio	CESVI	LIFT	Bant Bway	Bant Bway
Hilly	Nawngh Kio	CESVI	LIFT	Kone Thar	Kone Thar
Hilly	Nyaung-shwe	MCS	LIFT	Kyauk Taing	Kyauk Taing
Hilly	Nyaung-shwe	UNDP	LIFT		Kyauing Khan (N)
Hilly	Nyaung-shwe	UNDP	LIFT		Myay Nio Kone
Hilly	Nyaung-shwe	UNDP	LIFT		Shwe La Phone
Hilly	Nyaung-shwe	MCS	Control	Inn Phyar	Inn Yar
Hilly	Nyaung-shwe	UNDP	Control		Ti Law
Hilly	Pindaya	UNDP	LIFT		Inn Kaung
Hilly	Pindaya	UNDP	LIFT		Nat Inn
Hilly	Pinlaung	Metta	LIFT	Hti Bwa(North)	Lai Laung Kyi
Hilly	Pinlaung	Metta	LIFT	Paw In	Pha Ra Bwe
Hilly	Pinlaung	UNDP	LIFT		Kyay Taung
Hilly	Pinlaung	UNDP	LIFT		Naung Moon

Region	Township	IP	LIFT/control	Village Tract	Village
Hilly	Pinlaung	UNDP	LIFT		Tikyit (M)
Hilly	Pinlaung	Metta	Control	Min Bu	Min Bu
Hilly	Pinlaung	UNDP	Control		Naung Mu
Hilly	Puta-O	Metta	LIFT		Nant Par
Hilly	Puta-O	Metta	Control		Nant Khan
Hilly	Taunggyi	Metta	LIFT	Naung Khae	Naung Khae
Hilly	Taunggyi	Metta	LIFT	Naung Pyit	Pone Phron
Hilly	Taunggyi	Metta	Control	Naung Kar	Nyaung Win
Hilly	Tedim	GRET	LIFT	Kaptel	Kaptel
Hilly	Tedim	GRET	LIFT	Phunum	Zungh
Hilly	Tedim	GRET	LIFT	Vangteh	Vangteh
Hilly	Tedim	GRET	Control		Sezang
Hilly	Thantlang	GRET	LIFT	Lungding	Lungding
Hilly	Thantlang	GRET	LIFT	Tlangte	Mualkai
Hilly	Thantlang	GRET	Control		Htar lan
Hilly	Tonzang	Mercy Corps	LIFT	Salzang	Lomzang
Hilly	Tonzang	GRET	LIFT		Plauntung
Hilly	Tonzang	Mercy Corps	Control		Teinlan
Hilly	Waingmaw	SWISSAID	LIFT		Kyaing Khant
Hilly	Waingmaw	SWISSAID	LIFT		Meding
Hilly	Waingmaw	SWISSAID	Control	Nang War	Nang War
Hilly	Ywar Ngan	UNDP	LIFT		Myin Won

ANNEX B – Village profile format

PROFILE OF VILLAGE

Questionnaire No

SECTION 1: GENERAL INFORMATION

1.1	Village name		|_____|
1.2	Village MIMU code		|_____|
1.3	Village tract name		|_____|
1.4	Township name		|_____|
1.5	State/Region		|_____|
1.6	LIFT Fund Village/ Control Village	LIFT Fund Village..... 1 Control Village 2	|_____|
1.7	Interview date	_____/_____/2011	_____/_____/2011

	Name	Code
1.8	Enumerator	|____|
1.9	Supervisor	|____|
1.10	Editor	|____|

Name of LIFT Implementing Partners who are working or plan to work in this village:	**1** **2** **3** **4** **5**

Respondent information

	Name	Sex Male---- 1 Female--2	Designation/Occupation
Respondent—1			
Respondent—2			
Respondent—3			
Respondent—4			
Respondent—5			
Village telephone no.			

1. Households		Total
1.1	# of households	
2. Village population		**Total**
2.1	Male	
2.2	Female	

3. Ethnicity

Note, if the number of HHs comprising each group is not accurately known then percentage can be estimated.

Ethnicity			Numbers of households	Percentage
3.1	Bamar	1		
3.2	Kachin	2		
3.3	Kayah	3		
3.4	Kayin	4		
3.5	Chin	5		
3.6	Mon	6		
3.7	Rakhine	7		
3.8	Shan	8		
3.9	Indian	9		
3.10	Chinese	10		
3.11	Other ethnic group (specify_____)	11		
3.12	Other ethnic group (specify_____)	12		
3.13	**Total**			**100%**

4. Land

Sr	Type of land (record for the major types present in village)	Main crops grown			Average yields for each crop (specify units eg baskets/acre)					
		For Perennial	Monsoon	After monsoon	For Perennial		Monsoon crop		After monsoon	
					Unit	Qty	Unit	Qty	Unit	Qty
		a	b	c	d	e	f	g	h	i
1	Le (wet)									
2	Ya (dry)									
3	Kaing (Cultivable waste land, islands etc)									
4	Garden									
5	Dani (swamp lands)									
6	Taungya (shifting cultivation)									
7	Other(specify)_____									
8	Other(specify)_____									
9	Other(specify)_____									

5. Irrigated area in the village

5.1	What is the approximate area of village land that is irrigated in the dry season? (Current acreage)		**_____acres**
5.2	What are the major crops grown on this irrigated land?	1 2 3 4	
5.3	How many households farm irrigated land?		**_____HHs**

6	Main sources of livelihood	Approx. no. of households with this as main source of livelihood
6.1	Agriculture	
6.2	Fishing	
6.3	Business (SME, shop, trading etc)	
6.4	Forest user	
6.5	Livestock	
6.6	Casual labour	
6.7	Other 1:_____	
6.8	Other 2:_____	
6.9	Other 3:_____	
6.10	Other 4:_____	
6.11	Other 5:_____	
6.12	Other 6:_____	
6.13	Total	

7. Use of Power Tillers

Of the **farming** households, how many mainly use power tillers, how many mainly use draught animals and how many mainly use manual labour to plough their land?

7.1	No. Farming HHs using power tillers	**_____HHs**
7.2	No. Farming HHs using draught animals	**_____HHs**
7.3	No Farming HHs using manual labour	**_____HHs**

8. Village assets		
8.1	Power tiller	
8.2	Thresher	
8.3	Rice mill	
8.4	Pond	
8.5	Tube well (Hand/ treadle pump)	
8.6	Tube well (Motor pump)	
8.7	Shallow well	
8.8	Powered water pump	
8.9	Generator	
8.10	Trawlarjee	
8.11	Repair shop	
8.12	Other 1……	
8.13	Other 2……	
8.14	Other 3……	
8.15	Other 4……	

9. Casual labour opportunities for village households

What are the major types of work for casual labourers?

Sr	Farm related		Non-farm		Migrating (within Myanmar and international)	
	Type of work	No of HH	Type of work	No of HH	Type of work	No of HH
1						
2						
3						
4						
5						
6						
7						

10.	What are the average wages per day (Kyat) paid locally	
10.1	Male	_____Kyats
10.2	Female	_____Kyats

11. Village access and proximity to services

	Multiple answers	Distance from village (mile)	Mode of Transport		Time needed (One-way) (minutes)		Cost (Kyats) (One-way)	
			Wet	Dry	Wet	Dry	Wet	Dry
		a	b	c	d	e	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 foot.....1
Ox-cart/ horse cart 2
Trailer Jeep 3
Bicycle 4
Motor cycle.....5
Car 6
Boat.....7
Other Specify_____ 8

12. Standard of road access to the village: TICK ONE THAT BEST DESCRIBES THE SITUATION

No road reaching all the way to the village (eg 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	|_____|
Accessible by car/truck in **dry weather** only	4	
Accessible by car/truck in **all weather**	5	

13. Selling village products (fill in as applicable to the village) **Main products sold by HHs in this village**		
	Where sold (mostly)?	No product……..0 Own village……..1 Another village…….2 Township……..3
13.1	Monsoon paddy	|____|
13.2	Summer paddy	|____|
13.3	Sesame and other oil crops	|____|
13.4	Peas and beans (pulses)	|____|
13.5	Ground nuts (peanuts)	|____|
13.6	Maize	|____|
13.7	Wheat	|____|
13.8	Potatoes, sweet potato	|____|
13.9	Onions, garlic, ginger, turmeric, chilies	|____|
13.10	Fresh fruit and vegetables	|____|
13.11	Sugar cane	|____|
13.12	Nippa palm	|____|
13.13	Coconut	|____|
13.14	Betel nut/leaf	|____|
13.15	Toddy (incljaggery, alcohol)	|____|
13.16	Other ……	|____|
13.17	Other ……	|____|
13.18	Other ……	|____|
13.19	Other ……	|____|

NOTE: Include any other manufactured products sold by village households in the rows for *Other.*

	Type	**Yes….1 No…..0**	**If 'yes', No. of HH**
14. Availability of electricity			
14.1	Electricity (Govt)	|____|	|_____|
14.2	Electricity organized by village	|____|	|_____|
14.3	Electricity (Private/commercial generator)	|____|	|_____|
15. Infrastructure/facilities within the village			
	Type	**Yes….1 No…..0**	**Number**
15.1	Primary school (govt)	|____|	|_____|
15.2	Middle school (govt)	|____|	|_____|
15.3	High school (govt)	|____|	|_____|
15.4	Non govt school	|____|	|_____|
15.5	Sub rural health centre	|____|	|_____|
15.6	Grain bank/seed bank	|____|	|_____|
15.7	Cyclone shelter	|____|	|_____|

16. Are there any functioning self-help groups in the village — Yes……..1 No…….2 — If "2" ▶18 — |____|

17. If yes, what are they and what do they do?

	Name of self help group		Main activities		No of member HHs	No. of male members	No. of female members	When did it last meet? (indicate the month/year)
	Name	Code	Main activities	Code				
	A		b		c	d	e	f
1		|____|		|____|	|____|	|____|	|____|	|____|
2		|____|		|____|	|____|	|____|	|____|	|____|
3		|____|		|____|	|____|	|____|	|____|	|____|
4		|____|		|____|	|____|	|____|	|____|	|____|
5		|____|		|____|	|____|	|____|	|____|	|____|
6		|____|		|____|	|____|	|____|	|____|	|____|
7		|____|		|____|	|____|	|____|	|____|	|____|

NOTE: If members are households, use column c. If members are individuals, use column d & e.

18. Have any NGOs been working in the village in the past 12 months? — Yes……..1 No…….2 — If "2" ▶20 — |____|

19 If yes, what have been their major activities in the village?

Sr	Name of NGO	NGO code	Major activities?	Activities Code
	a		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? — Yes……..1 No…….2 — If "2" ▶22 — |____|

21. If yes, what type of training?

Sr	Name of agency or NGO	NGO code	Nature of training	Training Code
	a		b	
1		|____|		|____|
2		|____|		|____|
3		|____|		|____|
4		|____|		|____|
5		|____|		|____|
6		|____|		|____|
7		|____|		|____|
8		|____|		|____|

22. Source of credit in this village

Sr	Type of lender	Interest rate (%)	Term of loan (mths) Write dash(-) if no term fixed.	Frequency of repayment	Repayment (in cash/kind) Cash .....1 Kind Specify 2	Collateral needed (Y/N) Yes .....1 No 2
		a	b	c	d	e
1	|____|					
2	|____|					
3	|____|					
4	|____|					
5	|____|					

NOTE: In the "Type of lender" column, fill in the following codes:

Private bank 1
Micro-credit provider (low interest, less than 3%) 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
Other (specify) _____ 88

		Yes.....1 No.....2
23.	Is there any savings and loan association operating in this village?	|____|
24.	Does the village have access to low interest micro-credit?	|____|

25. If yes to either or both questions, complete the following table

	Name of S&L group or microcredit provider		Main objective for providing credit	Total no. current loans in village from these sources	No. current loans to women
	Name	Code			
	a		b	c	d
1		|____|	|____|	|____|	|____|
2		|____|	|____|	|____|	|____|
3		|____|	|____|	|____|	|____|
4		|____|	|____|	|____|	|____|
5		|____|	|____|	|____|	|____|
6		|____|	|____|	|____|	|____|

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 in the village

	Main water source		Quantity	Purpose of use	All-year-round availability
				Drinking.....1 Other HH uses....2 Both.....3	Yes.....1 No.....0
			a	b	c
26.1	River	1		|____|	|____|
26.2	Creek	2		|____|	|____|
26.3	Pond	3		|____|	|____|
26.4	Brick well	4		|____|	|____|
26.5	Hand-dug well	5		|____|	|____|
26.6	Tube Well (Motor pump)	6		|____|	|____|
26.7	Tube well (Hand pump)	7		|____|	|____|
26.8	Spring water (natural)	8		|____|	|____|
26.9	Spring water (stored)	9		|____|	|____|
26.10	Public water supply system	10		|____|	|____|
26.11	Dam	11		|____|	|____|
26.12	Rain water storage tank	12		|____|	|____|
26.13	Other (specify) _____	13		|____|	|____|
26.14	Other (specify) _____	14		|____|	|____|
26.15	Other (specify) _____	15		|____|	|____|

27. Months during which water is scarce

			Yes .....1 No 0
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 |____|

■ **End of the village profile**

ANNEX C – Household questionnaire (corrected English version)

HOUSEHOLD QUESTIONNAIRE

Questionnaire No

SECTION 1: GENERAL INFORMATION

1.1	Village name		|_____|
1.2	Village MIMU code		|_____|
1.3	Village tract name		|_____|
1.4	Township name		|_____|
1.5	State/Region		|_____|
1.6	Interview start time	_____:_____	|_____|
1.7	Interview end time	_____:_____	|_____|
1.8	Interview duration	_____:_____	|_____|
1.9	LIFT Fund Village/ Control Village	LIFT Fund Village..... 1 Control Village 2	|_____|
1.10	Interview date	_____/_____/20..	_____/_____/_____

		Name	Code
1.11	Enumerator		|____|
1.12	Supervisor		|____|
1.13	Editor		|____|

		Name
1.14	Name of head of HH (De jeure)	

SECTION 2: RESPONDENT INFORMATION

2.1	Respondent's 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.)*	
2.2	Position in the Household	Head of Household .....1 Spouse .....2 De facto Head of Household.....3	|____|
2.3	Sex	Male .....1 Female 2	|____|
2.4	Age	_____ years	|____|
	Specify age in years. If specific age is not known, round to the nearest 5 years upwards.		

SECTION 3: DEMOGRAPHY

Total number of HH members |_____|

Definition of HH members: Has to have stayed in the HH at some time during the past 3 months and is normally considered to be a regular HH member.

	3.1	3.2	3.3	3.4	3.5	3.6
HH Id No	**Name**	**Relationship with the Head of Household** Head of HH ..... 1 Spouse..... 2 Son, daughter, son/daughter-in-law.... 3 Parent/parent-in-law... 4 Other relative ..... 5 Non-relative 6	**Sex** Male .....1 Female....2	**Age** Specify age in years. If specific age not known, round to the nearest 5 years upwards.	Physical/mental disability that prevents him/her from working or studying Yes .....1 No 0	Regularly or full-time attending school/studying Yes.....1 No.....0
	All HH members					**5 and above 5**
1	Head of the HH:		|____|	|____|	|____|	|____|
2			|____|	|____|	|____|	|____|
3			|____|	|____|	|____|	|____|
4			|____|	|____|	|____|	|____|
5			|____|	|____|	|____|	|____|
6			|____|	|____|	|____|	|____|
7			|____|	|____|	|____|	|____|
8			|____|	|____|	|____|	|____|
9			|____|	|____|	|____|	|____|
10			|____|	|____|	|____|	|____|
11			|____|	|____|	|____|	|____|
12			|____|	|____|	|____|	|____|
13			|____|	|____|	|____|	|____|
14			|____|	|____|	|____|	|____|
15			|____|	|____|	|____|	|____|

3.7	Can some member of the HH read or write a simple message in Myanmar language or any other language?**(INTERVIEWER: Let the HH member read a simple phrase in Myanmar.)**	Yes 1 No 0	|____|

SECTION 4: SOURCES OF HH INCOME

			Yes—1 No—0
4.1	What were the sources of income for your household during the previous 12 months?		
4.1.1	Sale of rice	1	|____|
4.1.2	Sale of paddy	2	|____|
4.1.3	Sale of other cereals (maize, wheat, barley, oats, sorghum etc)	3	|____|
4.1.4	Sale of beans, pulses and peanuts	4	|____|
4.1.5	Sale of tubers and root crops (cassava, potatoes, taro, yam etc)	5	|____|
4.1.6	Sale of vegetables (fresh and dried)	6	|____|
4.1.7	Sale of fruits (fresh and dried)	7	|____|
4.1.8	Sale of beverage crops (tea or coffee)	8	|____|
4.1.9	Sale of toddy products (including sap, alcoholic beverage and jaggery)	9	|____|
4.1.10	Sale of other crops/agricultural products (rubber, reed broom, flowers, perennial trees, etc…)INDICATE NATURE OF THIS BUSINESS…	10	|____|
4.1.11	Sale of fresh wild catch of fish, prawns, crabs, shellfish	11	|____|
4.1.12	Sale of fresh farmed fish, prawns, crabs, shellfish	12	|____|
4.1.13	Sale of processed fish, prawns, crabs, shellfish (dried, salted, paste)	13	|____|
4.1.14	Sale of other wild food products (fruits and animals) – fresh or processed	14	|____|
4.1.15	Sale of firewood, timber/poles, bamboo, charcoal, rattan, palm leaves, thatch etc	15	|____|
4.1.16	Sale of livestock or livestock products (whole animals, meat, milk, eggs etc)	16	|____|
4.1.17	Small business - small scale production (not agricultural products) INDICATE NATURE OF THIS BUSINESS……..	17	|____|
4.1.18	Small business – trading, buying and selling INDICATE NATURE OF THIS BUSINESS……..	18	|____|
4.1.19	Small business – services (including transport services, repair, mechanical, post-harvestprocessing, etc) INDICATE NATURE OF THIS BUSINESS	19	|____|
4.1.20	Casual labour – agriculture	20	|____|
4.1.21	Casual labour – fishery	21	|____|
4.1.22	Casual labour – forestry or forest products	22	|____|
4.1.23	Casual labour – Other SPECIFY NATURE OF THE CASUAL LABOUR	23	|____|
4.1.24	Cash for work	24	|____|
4.1.25	Regular full-time employment	25	|____|
4.1.26	Regular part-time employment	26	|____|
4.1.27	Interest from lending	27	|____|
4.1.28	Remittances	28	|____|
4.1.29	Pensions	29	|____|
4.1.30	Government/NGO assistance (cash vouchers)	30	|____|
4.1.31	Re-sale of food aid	31	|____|
4.1.32	Gifts of money	32	|____|
4.1.33	Other 1 (specify)_____	33	|____|
4.1.34	Other 2 (specify)_____	34	|____|
4.1.35	Other 3 (specify)_____	35	|____|
4.1.36	Did not have income	99	|____|

4.2	What was the **most** important source of income for your household during the previous 12 months?	|____|
4.3	What was the **second** most important source of income for your household during the previous 12 months?	|____|
4.4	What was the **third** most important source of income for your household during the previous 12 months?	|____|
4.5	What was the **fourth** most important source of income for your household during the previous 12 months?	|____|
4.6	What was the **fifth** most important source of income for your household during the previous 12 months?	|____|

For questions No 4.2 to 4.6, use the following codes.

Sale of rice 1	Small business – services (including transport services, repair, mechanical, post-harvestprocessing,etc) INDICATE NATURE OF THIS BUSINESS.....
Sale of paddy 2	Casual labour – agriculture .....
Sale of other cereals (maize, wheat, barley, oats, sorghum etc) 3	Casual labour – fishery .....
Sale of beans, pulses and peanuts 4	Casual labour – forestry or forest products .....
Sale of tubers and root crops (cassava, potatoes, taro, yam etc) 5	Casual labour – Other SPECIFY NATURE OF THE CASUAL LABOUR .....
Sale of vegetables (fresh and dried) 6	Cash for work .....
Sale of fruits (fresh and dried) 7	Regular full-time employment .....
Sale of beverage crops (tea or coffee) 8	Regular part-time employment.....
Sale of toddy products (including sap, alcoholic beverage and jaggery) 9	Interest from lending (cash or kind).....
Sale of other crops/agricultural products (rubber, reed broom, flowers, perennial trees, etc)..... 10	Remittances.....
Sale of fresh wild catch of fish, prawns, crabs, shellfish 11	Pensions.....
Sale of fresh farmed fish, prawns, crabs, shellfish 12	Government/NGO assistance (cash vouchers) .....
Sale of processed fish, prawns, crabs, shellfish (dried, salted, paste) 13	Re-sale of food aid .....
Sale of other wild food products (fruits and animals) – fresh or processed..... 14	Gifts of money .....
Sale of firewood, timber/poles, bamboo, charcoal, rattan, palm leaves, thatch etc..... 15	Other—1 .....
Sale of livestock or livestock products (whole animals, meat, milk, eggs etc) 16	Other—2 .....
Small business - small scale production (not agricultural products) INDICATE NATURE OF THIS BUSINESS..... 17	Other—3 .....
Small business – trading, buying and selling INDICATE NATURE OF THIS BUSINESS..... 18	Did not have income .....

4.7 What is the average total income for your household from all sources in a normal month?

Less than Ks 25,000	1	
Ks 25,000 – Ks 50,000	2	
> Ks 50,000 – Ks 75,000	3	
> Ks 75,000 – Ks 100,000	4	
> Ks 100,000 – Ks 150,000	5	|____|
> Ks 150,000 – Ks 200,000	6	
> Ks 200,000 – Ks 250,000	7	
> Ks 250,000 – Ks 300,000	8	
Over Ks 300,000	9	
Don't know/no response	99	

4.8 How do you compare your household's income during these past 12 months with the previous year?

Increased	1	
Same as previous year	2	|____|
Decreased	3	
Don't know/no response	99	

SECTION 5: CASUAL EMPLOYMENT (Not full-time employment)

Number of days of paid casual employment in the past 12 months – total for all household members

5.1	Did any members of your household work casually for wages in the past 12 months?		
	Yes	1	|____|
	No	2 ▶6.1	

		Male HH member	Female HH member
5.2	Total number of days household members were paid for agricultural work – **main monsoon season**:		
5.2.1	● Soil preparation/ploughing and/or planting	|____| days	|____| days
5.2.2	● Weeding, pest control, or other labour activities while crop is growing	|____| days	|____| days
5.2.3	● Harvesting	|____| days	|____| days
5.2.4	● Other activities (including post-harvest)	|____| days	|____| days

		Male HH member	Female HH member
	Total number of days household members were paid for agricultural work – **winter/summer season**:		
5.2.5	● Soil preparation/ploughing and/or planting	|____| days	|____| days
5.2.6	● Weeding, pest control, or other labour activities while crop is growing	|____| days	|____| days
5.2.7	● Harvesting	|____| days	|____| days
5.2.8	● Other activities (including post-harvest)	|____| days	|____| days

To ask for all throughout the year

5.3	Total number of days household members were paid for fishery related work	|____| days	|____| days
5.4	Total number of days household members were paid for forestry related work	|____| days	|____| days
5.5	Total number of days household members were paid for other work 1 (not agricultural, not fishery and not forestry) SPECIFY TYPE - Other casual work 1……	|____| days	|____| days
5.6	Total number of days household members were paid for other work 2 (not agricultural, not fishery and not forestry) SPECIFY TYPE - Other casual work 2……	|____| days	|____| days
5.7	Total number of days household members were paid for other work 3 (not agricultural, not fishery and not forestry) SPECIFY TYPE - Other casual work 3……	|____| days	|____| days

5.8	How do you compare the availability of casual work in this area this year with the previous year?		
	Increased	1	|____|
	Same as previous year	2	
	Decreased	3	
	Don't know/no response	99	
5.9	In the last 12 months, did anyone from your household work for in-kind payment (eg payment in food, goods, services but not in money)?		
	Yes	1	|____|
	No	2	
5.10	Which was the more important for your household in the past 12 months, work where your household's members were paid in cash, or work paid in kind?		
	Paid in cash	1	|____|
	Paid in kind	2	

SECTION 6: EMPLOYMENT OF FARM LABOUR

To ask farming households

Number of days of farm labour employed by your HH in the past 12 months

6.1a Did your household undertake any farming activities in the past 12 months?

Yes	1	
No	2 ▶7.1	|____|

6.1b Did your household employ workers to assist in your agricultural production in the past 12 months?

Yes	1	
No	2 ▶7.1	|____|

6.2	Total number of person-days workers were engaged – **main monsoon season**:	Yes ....1 No 0	**Male workers** **Days**	**Female workers** **Days**
6.2.1	● Soil preparation/ploughing and/or planting	|____|	|_____|	|_____|
6.2.2	● Weeding, pest control, or other labour activities while crop is growing	|____|	|_____|	|_____|
6.2.3	● Harvesting	|____|	|_____|	|_____|
6.2.4	● Other activities (including post-harvest)	|____|	|_____|	|_____|

6.3	Total number of person-days workers were engaged – **winter/summer season**:	Yes ....1 No 1	**Male workers** **Days**	**Female workers** **Days**
6.3.1	● Soil preparation/ploughing and/or planting	|____|	|_____|	|_____|
6.3.2	● Weeding, pest control, or other labour activities while crop is growing	|____|	|_____|	|_____|
6.3.3	● Harvesting	|____|	|_____|	|_____|
6.3.4	● Other activities (including post-harvest)	|____|	|_____|	|_____|

6.4 Did your household employ more, less or about the same amount of farm labour in the past year compared with the previous year?

More farm labour	1	
Same as previous year	2	|____|
Less labour	3	

SECTION 7: HOUSEHOLD DIETARY DIVERSITY SCORE

Now I would like to ask you about the types of foods that you or anyone else in your household ate yesterday during the day and night. Did you or anyone else in your HH eat:**(Multiple responses)**

Read out the list			**Yes—1 No—0**
7.1	Any rice, sticky rice, or any other food made from rice, sticky rice, maize, wheat, barley, oats, millet, sorghum?	1	|____|
7.2	Any noodles, bread, biscuits or any other foods made from flour?	2	|____|
7.3	Any potatoes, cassava, yams, taro, or any food made from roots or tubers?	3	|____|
7.4	Any vegetables?	4	|____|
7.5	Any fruits?	5	|____|
7.6	Any beef, pork, lamb, goat, rabbit, chicken, duck, other birds, other meats or organs such as liver, heart, kidney etc?	6	|____|
7.7	Any other meats from frogs, rats, snakes, dogs, cats etc?	7	|____|
7.8	Any eggs from chickens, quails, ducks or other birds?	8	|____|
7.9	Any fish, crabs, prawns, or shellfish, either fresh or dried?	9	|____|
7.10	Any food made from gram, peas, cowpeas, pigeon peas, lentils, beans, peanuts or other nuts?	10	|____|
7.11	Any milk, milk solids, yogurt, cheese, or other milk products?	11	|____|
7.12	Any food made with peanut oil, coconut oil, palm oil, sesame oil, sunflower oil or other oils, animal fat, butter or margarine?	12	|____|
7.13	Any sugar, jaggery, honey?	13	|____|
7.14	Any coffee or tea?	14	|____|
7.15	Any condiments such as salt, pepper, curry, or chillies etc?	15	|____|

SECTION 8: MONTHS OF ADEQUATE HOUSEHOLD FOOD PROVISIONING

Now I would like to ask you about your household's food supply during different months of the year. Please think back over the last 12 months from now to the same time last year.

8.1 Were 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.

Yes	1		|____|
No	2	▶9.1	

8.2 If yes, which were the months in the past 12 months during which your household did not have enough food? (Do not read out the list of months.)**(Multiple responses)**

Fill in Code "1" if the respondent identifies that month as one in which the household DID NOT HAVE enough food. If the respondent does not identify that month fill in Code "0".

Inadequate—1
Adequate—0

September	Tawthalin	Year……..	|____|
August	Wagaung	Year……..	|____|
July	Waso	Year……..	|____|
June	Nayone	Year……..	|____|
May	Kasone	Year……..	|____|
April	Tagu	Year……..	|____|
March	Tabaung	Year……..	|____|
February	Tabodwe	Year……..	|____|
January	Pyatho	Year……..	|____|
December	Nadaw	Year……..	|____|
November	Tazaungmon	Year……..	|____|
October	Thadingyut	Year……..	|____|

SECTION 9: COPING STRATEGIES (AND HOUSEHOLD HUNGER SCALE)

	In the past four weeks, did your household have to engage in strategies because there was not enough food?	Never .....0 Rarely or sometimes.....1 Often.....2
9.1	In the past four weeks, did your family reduce the size and/ or the number of meals eaten in a day because there was not enough food to eat?	|____|
9.2	In the past four weeks, did your family change the family diet to cheaper or less-preferred foods, in order to have enough food to eat?	|____|
9.3	In the past four weeks, 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?	|____|
Household hunger scale		
9.4	In the past four weeks, was there any time when there was no food to eat of any kind in your household?	|____|
9.5	In the past four weeks, did you or any member of your household go to sleep at night hungry?	|____|
9.6	In the past four weeks, did you or any member of your household go a whole day and night without eating?	|____|
In the past 12 months, did you or any member of your HH have to do any of the following activities, so that you had enough food to eat?		Yes .....1 No 0
9.7	In 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?	|____|
9.8	In the past 12 months, did your HH use savings in order to have enough food to eat?	|____|
9.9	In 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?	|____|
9.10	In 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?	|____|
9.11	In 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?	|____|
9.12	In 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?	|____|
9.13	In the past 12 months, did your HH sell,pawnor exchange any of the household's assets, including tools, equipment or any other possessions, in order to buy enough food to eat?	|____|
9.14	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?	|____|
9.15	In the past 12 months, did your HH sell, mortgage or rent any of your land, in order to have enough food to eat?	|____|
9.16	Overall, how would you compare your household's food availability from all sources in the past 12 months with the previous year?	

Increased	1
Same as previous year	2
Decreased	3
Don't know/no response	99

\|____\|

SECTION 10: ACCESS TO LAND FOR AGRICULTURE

10.1	Does your household or any of its members own land?			
	Yes	1		
	No	2	▶10.8	

|_____|

Note: Ownership should be considered very broadly to include cases where land is formally titled and registered in one or more household member's name; land that has been purchased, transferred or inherited but not formally titled (or if titled not registered in the household's name); land leased from government; and, land where the household believes it has an established right (formal or informal) to use the land, a right that is generally recognized by the community.

10.2	If yes, What is the total area of land that your household owns?	Unit _____		|____|
10.3	Are you growing any crop on that land at present?	Yes .....1 No 0	▶10.5	|____|
10.4	What area of your household's own land is your HH cultivating at present?	Unit _____		|____|
10.5	What area of your household's own land can be irrigated?	Unit _____		|____|
10.6	Is your household leasing out any of its own land at present?	Yes .....1 No 0		|____|
10.7	If yes, What is the area of land that your household is leasing out at present?	Unit _____		|____|
10.8	Did your household rent any land in the past 12 months for agriculture? (paying in cash)	Yes .....1 No 0		|____|
10.9	Did your household rent any land in the past 12 months for agriculture? (paying in kind)	Yes .....1 No 0		|____|
10.10	Did your household share farm another's land in the past 12 months (where you share the crop with the landowner)?	Yes .....1 No 0		|____|
10.11	Did your household cultivate any other land that was provided free of charge?	Yes .....1 No 0		|____|

SECTION 11: HOUSEHOLD CROP PRODUCTION

◗ To ask all households that have access to land

I would now like to ask some questions about the **annual** crops your household grew in the previous 12 months: **(NOTE: Perennial and tree crops are to be excluded)**

				Yes—1 No—0
11.1	Did your household grow any annual crops (for own consumption or for sale) in the past 12 months?			|____|
11.2	Did your household grow crops in the previous monsoon season (in 20.., not this current season)?			|____|
11.3	What was the major crop your household grew in the 20.. monsoon season? (USE BELOW CODES or specify other……)		_____	|____|
11.4	Did your household grow any other crops after the last monsoon season (in the winter or summer season)?			|____|
11.5	What was the major crop your household produced after the last monsoon season? (USE BELOW CODES or specify other……)		_____	|____|

Crop codes

Paddy/rice/sticky rice ... 1	Cowpea 12	Tomato..... 23	Cotton 34
Corn/maize 2	Pigeon pea 13	Pumpkin 24	Tobacco.....35
Wheat 3	Chick pea.....14	Green beans..... 25	Betel leaf 36
Millet..... 4	Lentil 15	Aubergine..... 26	Other (specify) 37
Sorghum 5	Lima/butter bean.....16	Okra..... 27	Other (specify) 38
Groundnut 6	Navy/kidney bean.....17	Onion 28	Other (specify) 39
Sesame seed 7	Soy bean 18	Chilli 29	
Mustard/rape seed..... 8	Cassava 19	Garlic 30	
Sunflower..... 9	Potato 20	Ginger..... 31	
Niger Seed 10	Sweet potato 21	Turmeric.....32	
Green/black gram..... 11	Yam 22	Sugarcane.....33	

Crop	Crop code	11.6 What was the area planted?		11.7 Did you intercrop?		11.8 How much did you harvest?		11.9 How was the crop yield compared with your average season?	11.10 Where was the seed from?			11.11 How was the soil tilled prior to planting?	11.12 How was the seed sown?	11.13 Did you use inorganic fertilizer?	11.14 Did you use organic fertilizer?	11.15 Did your HH use insecticides?	11.16 Did your HH usefungicides?	11.17 Did your HH useherbicides?
										Purchase/ provided								
		Unit	Qty	Yes..1 No ..0	Unit	Form of harvested product	Qty (Total harvested for all acres planted)	Better .. 1 Same ... 2 Worse.. 3	Own seed	Improved	Un-improved	Manpower ..1 Draft animal 2 Power tiller..3 Tractor 4	Broadcast ..... 1 Seeder ..... 2 Transplanted ... 3	Yes ...1 No 0	Yes... 1 No ... 0	Yes... 1 No.... 0	Yes ... 1 No 0	Yes ...1 No 0
									Yes . 1 No .. 0	Yes..1 No ..0	Yes..1 No...0							
Major crop grown in the previous monsoon	|____|	Acre	|____|	|____|	___		|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|
Major post-monsoon crop in 20..	|____|	Acre	|____|	|____|	___		|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|

* **Form of harvested product**: e.g. beans in pod or beans without pod, corn on the cob or loose grains, etc

SECTION 12: CONSTRAINTS TO CROP PRODUCTION

12.1 What are the major constraints or problems limiting your HH's crop production? (Why didn't your household produce more baskets of crop?) **Do not read out the answers (Multiple responses)**

			Yes.....1 No 0
lack of money to buy the necessary inputs (or lack of credit)	1		|____|
lack of land	2		|____|
lack of draught power/mechanical power (or too expensive)	3		|____|
lack of other tools and equipment (or too expensive)	4		|____|
lack of fertilizer (or too expensive)	5		|____|
lack of seeds (or too expensive)	6		|____|
lack of household labour	7		|____|
lack of casual labour available locally (or too expensive)	8		|____|
lack of pesticides (or too expensive)	9		|____|
lack of knowledge, skills or experience	10		|____|
not interested/grows enough/too risky to grow more	11		|____|
low prices for the agricultural crops grown	12		|____|
bad/unreliable weather (including too little or too much rain)	13		|____|
lack of water resources or irrigation infrastructure	14		|____|
crop pests and disease	15		|____|
low soil fertility/poor soil structure etc	16		|____|
Salinity	17		|____|
soil acidity	18		|____|
Other 1 (specify)_____	19		|____|
Other 2.(specify)_____	20		|____|

SECTION 13: MARKETING

13.1 Did your household sell any crops during the last 12 months?

Yes	1		|____|
No	2	▶14.1	

13.2 Now I want to ask you about the main crop you sold. What was the main crop your household sold during the past 12 months

Name _____ **(Use the crop codes provided above.)**			|____|

13.3 Did your household sell your main crop alone or did you sell with other farmers?

Sold alone only	1		
Sold in group only	2		|____|
Sold alone and in group	3		

13.4 Were you able to access information on prices for the main crop before you sold it?

Yes	1		|____|
No	2		

13.5 If you were able to access information on prices, where did you get this information from?
NOTE: Do not read the options. (Multiple answers)

Radio/TV	1		|____|
Newspaper/weekly journal	2		|____|
Friends/Family	3		|____|
Cellphone	4		|____|
Farmer association/cooperative	5		|____|
NGO/other organization	6		|____|
Dealer/broker	7		|____|
Other (specify) _____	88		|____|

13.6 Did you know the price for your main crop at the nearest market town at the time of sale?

Yes	1		|____|
No	2	▶13.8	

13.7 If you knew the price at the market town, was the price higher, same or lower than the price that you would get selling at your village?

Higher	1		
Same	2		|____|
Lower	3		

13.8 Where did you sell your main crop?

Own village	1		
Village-tract	2		|____|
Market town	3		
Other (specify) _____	88		

13.9 When did you sell your main crop?

Immediately after harvest	1		
1 month later	2		
2 months later	3		|____|
3 months later	4		
4 or more months later	5		

13.10 How would you rate the quality of the main crop you sold over the previous 12 months?

Above average for the area	1		
Average	2		|____|
Below average	3		

SECTION 14: CREDIT

14.1 Have you or any household member taken a loan in the **last 12 months**?

Yes	1		|____|
No	2	▶14.5	

14.2 From whom did you borrow money? (**Multiple answers possible**)

Private bank	1		|____|
Micro-credit provider (low interest, 3% 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		|____|
Other (specify) _____	88		|____|

14.3 What was the most important use of the ***loans*** taken in the last year?

		14.3
		most important use
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	|____|
Bride price / Wedding	10	
Health emergency	11	
Funeral	12	
Business investment	13	
Repayment of loans	14	
School/education fees/costs	15	
Other (specify) _____	88	

14.4 What is the value of your household's current debt from all sources of credit?

Less than Ks 25,000	1		
Ks 25,001 – Ks 50,000	2		
Ks 50,001 – Ks 75,000	3		
Ks 75,001 – Ks 100,000	4		
Ks 100,001 – Ks 150,000	5		
Ks 150,001 – Ks 200,000	6		
Ks 200,001 – Ks 300,000	7		|____|
Ks 300,001 – Ks 400,000	8		
Ks 400,001 – Ks 500,000	9		
Over Ks 500,000	10		
No debt	11		
Do not know/No answer	99		

14.5 How do you compare your household's current level of indebtedness with previous years?

Increasing	1		
Staying much the same	2		
Decreasing	3		
Do not know/No response	99		

|____|

SECTION 15: HOUSEHOLD LIVESTOCK OWNERSHIP

15.1 How many animals does your household currently own? Does your household share the ownership of any livestock with others? **(Multiple responses)**
Record the number in the spaces provided (include both mature and young).

		Do you own animals?	**Own**	**Shared**
		Yes .....1 No 0	Number	Number
Cattle	1	|____|	|____|	|____|
Horses	2	|____|	|____|	|____|
Goats and/or sheep	3	|____|	|____|	|____|
Buffalo	4	|____|	|____|	|____|
Pigs	5	|____|	|____|	|____|
Chickens	6	|____|	|____|	|____|
Ducks	7	|____|	|____|	|____|
Other 1 (specify) _____	8	|____|	|____|	|____|
Other 2 (specify) _____	9	|____|	|____|	|____|
Other 3 (specify) _____	10	|____|	|____|	|____|

SECTION 16: HOUSEHOLD OWNERSHIP OF AGRICULTURAL EQUIPMENT AND MACHINERY

16.1 Does your household currently own any of the following agricultural equipment and machinery? **Record the answer in the space provided – ownership can be full or shared ownership with other households. (Multiple responses)**

				Not own ....0 **Own.....1** **Shared 2**
Ploughs/tillage equipment for use with draught animals	1			|____|
Power tiller	2			|____|
Tractor	3			|____|
Power thresher	4			|____|
Backpack sprayer	5			|____|
Improved crop storage bin or silo	6			|____|
Tarpaulin or seed drying net	7			|____|
Irrigation pump	8			|____|
Animal drawn cart	9			|____|
Trailer (drawn by vehicle)	10			|____|
Seeder	11			|____|
Other 1 (specify)_____	12			|____|
Other 2 (specify)_____	13			|____|
Other 3 (specify)_____	14			|____|

SECTION 17: OTHER HOUSEHOLD ASSETS

17.1 What is the major source of **lighting** in your household?

Electricity from the grid	1		
Village generator	2		
Own generator	3		
Shared generator with other household(s)	4		
Lamp (kerosene/oil)	5		
Candle	6		
Other (specify) _____	88		

|____|

17.2 What is the major source of **cooking fuel** in your household?

Electricity	1		
Gas	2		
Charcoal	3		
Kerosene	4		
Wood	5		
Dung	6		
Other (specify) _____	88		

|____|

17.3 Does your household, including the head, spouse and all members, own any of the following items?
Read the following list to respondents.

Assets			No .....0 Yes.....1
Bicycle	1		|____|
Motorcycle	2		|____|
Trishaw	3		|____|
Trawlarjee	4		|____|
Car	5		|____|
Truck	6		|____|
Bed (wooden or steel)	7		|____|
Mattress	8		|____|
Stove (gas or electric)	9		|____|
Fuel efficient wood stove	10		|____|
Chair	11		|____|
Table	12		|____|
Gold/ Jewellery	13		|____|
Radio/cassette	14		|____|
TV / satellite dish	15		|____|
DVD player	16		|____|
Sewing machine	17		|____|
Cell phone	18		|____|
Watch	19		|____|
Solar panel	20		|____|
Boat without motor	21		|____|
Boat with motor	22		|____|
Fishing net	23		|____|
Fish/aquaculture pond	24		|____|
Household savings	25		|____|

17.4	Does your household own the house you are living in?			
	Yes	1		|____|
	No	2		

17.5	What is the **main** material of the house roof, walls and floors? If possible answer based on observation – if more than one house record for the best house.				
17.5A	**Roofing material**	Zinc sheets or corrugated iron	1		|____|
		Tarpaulin or plastic sheet	2		
		Palm frond or thatch	3		
		Other (specify) _____	88		
17.5B	**Wall material**	Zinc sheets or corrugated iron	1		|____|
		Tarpaulin or plastic sheet	2		
		Bamboo, palm frond or thatch	3		
		Timber	4		
		Bricks, cement, cement block, or cement and stone	5		
		Mud bricks/mud	6		
		Other (specify) _____	88		
17.5C	**Floor material**	Timber	1		|____|
		Bamboo	2		
		Earth	3		
		Cement	4		
		Other (specify) _____	88		

17.6	Looking back over the past 2 years, do you think that your HH's total assets and wealth are…….			
	Increasing	1		|____|
	Staying much the same	2		
	Decreasing	3		

SECTION 18: TRAINING

18.1	Over the past 3 years, has any member of your household received any training in crop production?			Complete below table
18.2	Over the past 3 years, has any member of your household received any training in livestock production?			Complete below table
18.3	Over the past 3 years, has any member of your household received any training in fisheries (either wild capture or aquaculture)?			Complete below table
18.4	Over the past 3 years, has any member of your household received any training in any other vocational skill?			Complete below table
18.5	Who in the household received this livelihood training, only male member(s) of the household, only female member(s), or both male and female members? (ASK FOR EACH TRAINING ATTENDED)			Complete below table
18.6	Did your household or any of its members use any skills acquired during this training to improve household livelihoods or food security? (ASK FOR EACH TRAINING ATTENDED)			Complete below table

	Received training? 1= yes; 2= no	18.5 Sex of HH training participants 1=male; 2=female; 3=both	18.65 Used skills 1= yes; 2= no	

18.1	Crop production	[_____]	[_____]	[_____]
18.2	Livestock	[_____]	[_____]	[_____]
18.3	Fisheries	[_____]	[_____]	[_____]
18.4	Other vocational/livelihood skill	[_____]	[_____]	[_____]

■ **END OF THE QUESTIONNAIRE**

ANNEX D –Instructions and checklists of questions for the focus group discussions

Focus Group Discussions as part of the LIFT baseline survey

Introduction

Focus group discussions (FGDs) will be conducted in a small sample of representative villages that have been selected for the baseline household survey. Salient features are as follows:

- To be undertaken in 12 villages: 3 selected from each of the four "strata" (coastal zone, dry zone, hill zone and Rakhine Giri-affected area)
- Villages selected to reflect the diversity of livelihood & food security contexts in each strata
- FGDs to be conducted with 4 major groups:
    - Agricultural producers (mixed men and women)
    - People involved in other non-agricultural livelihoods/activities (mixed men and women) to cover the main types of non-agricultural activity
    - Representatives from the poorest and most vulnerable households (separate groups of women and men)
- Questions will focus on a few main areas of inquiry:
    - Major livelihoods (costs/returns/viability, markets, input/credit availability, technologies, constraints, risks, changes/trends, patterns of multiple livelihoods)
    - Food security and coping strategies (risks to HH food security, factors in vulnerability, common coping strategies for different socio-economic and livelihood group, changes/trends)
    - Social capital in the community as related to livelihoods and food security (including credit, access to land and natural resources, payments in kind and barter, collective marketing, reciprocal obligations [e.g., related labour, inputs, outputs, food], changes/trends)
- A separate team of facilitators (with experience in qualitative assessments) will be trained to conduct and document these FGDs; and approaches and question checklists will be tested
- Questions will be translated in the languages most comfortable for the participants; facilitators and documenters will be selected who are fluent in these languages
- Answers should be recorded in the language used and as close to verbatim as possible (without reinterpreting their meaning)
- All FGDs to be fully documented in each village.

Approach to conducting the FGDs

- Seek support from the IP to find village leaders with whom to discuss FGD objectives and seek their assistance to locate suitable participants for the FGD sessions (note villagers should not be forced to participate)
- Plan FGD locations and schedule with the community to find times and locations to suit them
- Make sure that the community understand why FGDs are being conducted and try to get the community interested in participating in the FGDs
- Where possible choose homogeneous focus groups where participants can discuss similar experiences/problems.
- Don't be a slave to the checklist: modify/use questions according to their relevance to the participants involved; change the order of questions to keep the natural flow of discussion.

- Report minority responses and disagreements; collect the diversity of opinions and explore the rationale behind each (Why did they say that? Why do they disagree?).
- The facilitator should check through the notes taken by the documenter (add/clarify) before leaving the village
- The detailed information from *all* of the group discussions conducted in each of the 12villages should be fully documented, this should cover all the questions asked to each group.

<u>Notes to consider in FGD investigations:</u>

1. Major livelihood sources for sub-groups in the community
    - Current livelihoods, recent changes in livelihoods/new livelihoods emerging others waning
        - Agriculture (crops annual & perennial, livestock)
        - Fishery (wild capture and aquaculture)
        - NTFP and wild harvested products
        - Off-farm and non-farm income generation activities and opportunities
        - Casual labour (see below)
        - Seasonal livelihoods and short-term supplementary sources of income
    - Other sources of income: migration and remittances (and how these work), pensions and government assistance, gifts.
    - Main strengths / constraints and problems associated with each (include consideration of availability of inputs, technical assistance, market price information and linkages, costs of production, labour intensity, investment required, credit, profitability, risks)

Access to land for the land poor and landless:

- Opportunities to share farm, lease/use land
- How such systems work (sharing costs/benefits)
- Who can use?
- Prevalence of these systems (waxing/waning)

- Common property land for grazing, harvest of natural products

2. Food security and coping strategies (for land poor, landless and most poor and vulnerable)
    - Most difficult months for household food security for different groups
    - Factors in vulnerability, major risks affecting HH food security
    - Most common coping strategies for each group and related to different risks
    - Use of seasonal 'wild' foods collected year round or at different times of the year

Access to credit (for subgroups)

- Sources of credit used by different groups
- Typical terms of credit for each source (interest, repayments, term, collateral, penalties) – borrowing food and borrowing money, pre-selling of crops, pre-selling of labour
- Indebtedness (absolute levels, affordability, trends in household indebtedness)
- Risks associated with debt - loss of land or other assets

Question checklist (to be translated)

1. Agricultural producers (mixed men and women)

	Key questions:	**Notes/additional issues to explore:**
1.	**<u>Agricultural and non-agricultural livelihoods:</u>**	
1.1	***What are the major agricultural livelihoods in this village?***	Explore <u>all crops</u> grown in monsoon, summer and winter seasons Work out which mainly for own consumption and which for sale. ***Which agricultural crops are the most profitable?***
1.2	***What are the major non-agricultural livelihoods in this village?***	
1.3	***Do you employ casual labour for any of your agricultural activities? Which activities?***	***What time of year do you employ most labour?*** ***Is it easy to find enough labour locally?*** ***Who do you employ more of – men or women?*** ***How much do you normally pay men per day? And women?*** ***Do you think that farmers are changing how much casual labour they employ?*** (For example this could be because they are changing the way they grow their crops or because they are using more machinery)
1.4	***What is the most important problem you face in agricultural production?***	This is an open question allowing participants to discuss any problem or constraint they face. (Examples could be lack of land, lack of credit, low prices for products, high prices for inputs, lack of knowledge, pests and diseases, poor links to market etc)
1.5	***Do households cooperate or work together in agricultural production?***	This is an open question. (Examples could be sharing land, lending seed or other inputs, sharing the work of planting or harvesting, sharing equipment, marketing together, savings and loans groups etc) Explore how this works for each example

		they provide
1.6	***Are there ways households with little or no land can access land for agriculture? Is this common?***	Explore whether households lease land, share crop, lend land, pay workers in a share of the harvest etc. Explore how these systems work. How many among the participants have ever been involved in these?
1.7	***Are there any common or shared resources used by households in this village for their livelihoods?***	Examples: common fishing grounds, common grazing areas, forests etc ***How important are these for livelihoods or food security?*** Explore if the villagers try to manage these resources and how this works. ***Is access to these resources changing?*** ***Are these resources becoming less productive?***
1.8	***Are some livelihoods becoming more important in the village and some less important?***	***Are there any new livelihoods starting up? Why? New markets? Changes in level of profit?*** ***Are some livelihoods becoming less common? Why? Less profitable etc?***
1.9	***Do you think your own household is getting poorer or richer year by year?***	***How do households get richer? And poorer? What are the most important factors?***
2.	**Food security and coping strategies**	
2.1	***Do any of you ever have problems finding enough food for your households to eat?*** ***What are the most difficult times of year for you when food is short?***	Remember food can be available from any source including purchases or own production
2.2	***How severe are these shortages for your household?***	***For example: do you eat less, eat fewer times in a day, or go a whole day and night without eating?***
2.3	***What do you do in times when there is not enough food for your HH?***	Try to list all the different coping strategies used by your participants' households. ***Can you rank these different coping strategies in terms of which are the first you use and which you only use in the worst times of food shortage?***

		For example, some are the first to be used, while some are only a last resort and may be destructive for future livelihoods or have other serious impacts on the HH
2.4	***How important is credit for your household?*** ***What are all the different sources of credit available to you?***	Remember some credit can be in the form of cash, and some can be in rice/food or other products
2.5	***What are the advantages and disadvantages of each type of credit?*** ***Which ones do you use the most? Why?***	Explore the different sources of credit and interest rates, frequency of repayments, total duration of the loan etc
2.6	***Does your village have any systems to assist households that are facing serious shortages of food?*** ***What are they?***	***How do these systems work?*** Note if any of the participants have been involved.
2.7	***Do you think it's getting easier or harder year by yearto find enough food for your households?***	***Why is this changing? What are the factors?*** ***Are you also changing the way you cope when food is short? How?***

2. People involved in non-agricultural livelihoods (mixed men and women)

	Key questions:	Notes/additional issues to explore:
1	**Agricultural and non-agricultural livelihoods:**	
1.1	***What are the major agricultural livelihoods in this village?***	
1.2	***What are the major non-agricultural livelihoods in this village?***	Explore different types of non-agric livelihoods in the villages Work out which are mainly for own consumption and which for sale (eg fishing can be for either). ***Which non-agricultural livelihoods are the most profitable?***
1.3	***Do you employ casual labour for any of your non-agricultural activities? Which activities?***	***Is this demand for casual labour growing? Why/why not?*** ***Is it easy to find enough labour locally?*** ***Who do you employ more of – men or women?*** ***How much do you normally pay men per day? And women?***
1.4	***Are there any common or shared resources used by households in this village for their livelihoods?***	Examples: common fishing grounds, common grazing areas, forests etc ***How important are these for livelihoods or food security?*** Explore if the villagers try to manage these resources and how this works. ***Is access to these resources changing?*** ***Are these resources becoming less productive?***
1.5	***Are some livelihoods becoming more important in the village and some less important?***	***Are there any new livelihoods starting up? Why? New markets? Changes in level of profit?*** ***Are some livelihoods becoming less common? Why? Less profitable etc?***
1.6	***Do you think your own household is getting poorer or richer year by year?***	***How do households get richer? And poorer? What are the most important factors?***

2.	**Food security and coping strategies**	
2.1	***Do any of you ever have problems finding enough food for your households to eat?*** ***What are the most difficult times of year for you when food is short?***	Remember food can be available from any source including purchases or own production
2.2	***How severe are these shortages for your household?***	***For example: do you eat less, eat fewer times in a day, or go a whole day and night without eating?***
2.3	***What do you do in times when there is not enough food for your HH?***	Try to list all the different coping strategies used by your participants' households. ***Can you rank these different coping strategies in terms of which are the first you use and which you only use in the worst times of food shortage?*** For example, some are the first to be used, while some are only a last resort and may be destructive for future livelihoods or have other serious impacts on the HH
2.4	***How important is credit for your household?*** ***What are all the different sources of credit available to you?***	Remember some credit can be in the form of cash, and some can be in rice/food or other products
2.5	***What are the advantages and disadvantages of each type of credit?*** ***Which ones do you use the most? Why?***	Explore the different sources of credit and interest rates, frequency of repayments, total duration of the loan etc
2.6	***Does your village have any systems to assist households that are facing serious shortages of food?*** ***What are they?***	***How do these systems work?*** Note if any of the participants have been involved.
2.7	***Do you think it's getting easier or harder year by yearto find enough food for your households?***	***Why is this changing? What are the factors?*** ***Are you also changing the way you cope when food is short? How?***

3. Poor and vulnerable households - women

	Key questions:	Notes/additional issues to explore:
1	**Agricultural and non-agricultural livelihoods:**	
1.1	***What are the major agricultural livelihoods in this village?***	
1.2	***What are the major non-agricultural livelihoods in this village?***	
1.3	***Do you or any members of your household work as casual labourers? (ie daily paid work)*** ***What type of work? What activities?*** ***How much do you get paid per day? (women's pay)***	Try to rank the most important type of casual work available for women – from the most common to least common. Are the rates of pay the same for all types of casual work?
1.4	***Is it easy for women to find enough casual work locally (in this village)?*** ***What time of year do womenfind most work?***	***Do you think that farmers and others who employ workers are changing how much casual labour they employ?*** (For example this could be because they are changing the way they grow their crops or because they are using more machinery)
1.5	***Which months of year is it hardest for you to find work?*** ***What do you do during these months?***	Explore whether women ever move to other villages, regions or even internationally to find work (seasonal migration, or long-term migration)
1.6	***Are there ways households with little or no land can access land for agriculture? Is this common?***	Explore whether households lease land, share crop, lend land, pay workers in a share of the harvest etc. Explore how these systems work. How many among the participants have ever been involved in these?
1.7	***Are there any common or shared resources used by households in this village for their livelihoods?***	Examples: common fishing grounds, common grazing areas, forests etc ***How important are these for livelihoods or food security?*** Explore if the villagers try to manage these resources and how this works. ***Is access to these resources changing?*** ***Are these resources becoming less productive?***

1.8	***Are some livelihoods becoming more important in the village and some less important?***	***Are there any new livelihoods starting up? Why? New markets? Changes in level of profit?*** ***Are some livelihoods becoming less common? Why? Less profitable etc?***
1.9	***Do you think your own household is getting poorer or richer year by year?***	***How do households get richer? And poorer? What are the most important factors?***
2.	**<u>Food security and coping strategies</u>**	
2.1	***Do any of you ever have problems finding enough food for your households to eat?*** ***What are the most difficult times of year for you when food is short?***	Remember food can be <u>available from any source including purchases or own production</u>
2.2	***How severe are these shortages for your household?***	***For example: do you eat less, eat fewer times in a day, or go a whole day and night without eating?***
2.3	***What do you do in times when there is not enough food for your HH?***	Try to list all the different <u>coping strategies</u> used by your participants' households. ***Can you rank these different coping strategies in terms of which are the first you use and which you only use in the worst times of food shortage?*** For example, some are the first to be used, while some are only a last resort and may be destructive for future livelihoods or have other serious impacts on the HH
2.4	***How important is credit for your household?*** ***What are all the different sources of credit available to you?***	Remember some credit can be in the form of cash, and some can be in rice/food or other products
2.5	***What are the advantages and disadvantages of each type of credit?*** ***Which ones do you use the most? Why?***	Explore the different sources of credit and interest rates, frequency of repayments, total duration of the loan etc
2.6	***Does your village have any systems to assist households that are facing serious shortages of food?*** ***What are they?***	***How do these systems work?*** Note if any of the participants have been involved.
2.7	***Do you think it's getting easier or harder year by yearto find enough food for your households?***	***Why is this changing? What are the factors?*** ***Are you also changing the way you cope when food is short? How?***

4. Poor and vulnerable households - men

	Key questions:	Notes/additional issues to explore:
1	**<u>Agricultural and non-agricultural livelihoods:</u>**	
1.1	***What are the major agricultural livelihoods in this village?***	
1.2	***What are the major non-agricultural livelihoods in this village?***	
1.3	***Do you or any members of your household work as casual labourers? (ie <u>daily paid work</u>)*** ***What type of work? What activities?*** ***How much do you get paid per day? (men's pay)***	Try to rank the most important type of casual work available for men – from the most common to least common. Are the rates of pay the same for all types of casual work?
1.4	***Is it easy for men to find enough casual work locally (in this village)?*** ***What time of year do menfind most work?***	***Do you think that farmers and others who employ workers are changing how much casual labour they employ?*** (For example this could be because they are changing the way they grow their crops or because they are using more machinery)
1.5	***Which months of year is it hardest for you to find work?*** ***What do you do during these months?***	Explore whether men ever move to other villages, regions or even internationally to find work (seasonal migration, or long-term migration)
1.6	***Are there ways households with little or no land can access land for agriculture? Is this common?***	Explore whether households lease land, share crop, lend land, pay workers in a share of the harvest etc. Explore how these systems work. How many among the participants have ever been involved in these?
1.7	***Are there any common or shared resources used by households in this village for their livelihoods?***	Examples: common fishing grounds, common grazing areas, forests etc ***How important are these for livelihoods or food security?*** Explore if the villagers try to manage these resources and how this works. ***Is access to these resources changing?*** ***Are these resources becoming less productive?***

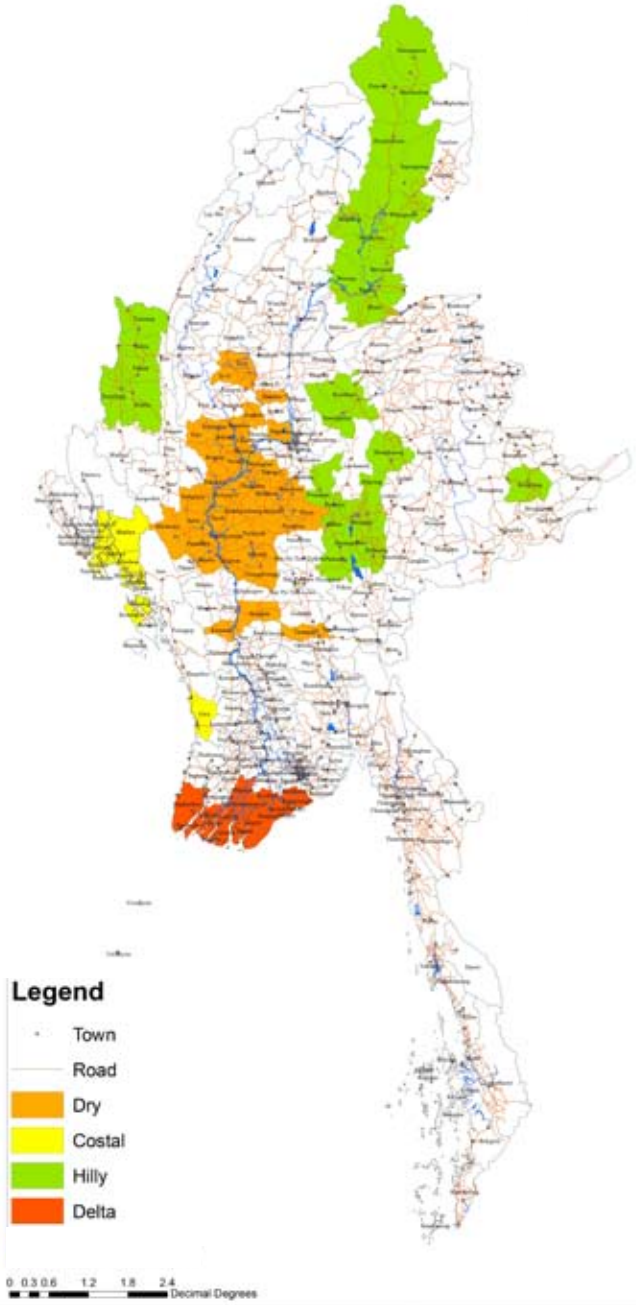
1.8	***Are some livelihoods becoming more important in the village and some less important?***	***Are there any new livelihoods starting up? Why? New markets? Changes in level of profit?*** ***Are some livelihoods becoming less common? Why? Less profitable etc?***
1.9	***Do you think your own household is getting poorer or richer year by year?***	***How do households get richer? And poorer? What are the most important factors?***
2.	**<u>Food security and coping strategies</u>**	
2.1	***Do any of you ever have problems finding enough food for your households to eat?*** ***What are the most difficult times of year for you when food is short?***	Remember food can be <u>available from any source including purchases or own production</u>
2.2	***How severe are these shortages for your household?***	***For example: do you eat less, eat fewer times in a day, or go a whole day and night without eating?***
2.3	***What do you do in times when there is not enough food for your HH?***	Try to list all the different <u>coping strategies</u> used by your participants' households. ***Can you rank these different coping strategies in terms of which are the first you use and which you only use in the worst times of food shortage?*** For example, some are the first to be used, while some are only a last resort and may be destructive for future livelihoods or have other serious impacts on the HH
2.4	***How important is credit for your household?*** ***What are all the different sources of credit available to you?***	Remember some credit can be in the form of cash, and some can be in rice/food or other products
2.5	***What are the advantages and disadvantages of each type of credit?*** ***Which ones do you use the most? Why?***	Explore the different sources of credit and interest rates, frequency of repayments, total duration of the loan etc
2.6	***Does your village have any systems to assist households that are facing serious shortages of food?*** ***What are they?***	***How do these systems work?*** Note if any of the participants have been involved.
2.7	***Do you think it's getting easier or harder year by yearto find enough food for your households?***	***Why is this changing? What are the factors?*** ***Are you also changing the way you cope when food is short? How?***

Annex E -Villages selected for the focus group discussions

Zone	Village	Township	State/Region	FGDs conducted			
				Agricultural producers	Persons involved in non-agricultural enterprises	Poor/Vulnerable (Women)	Poor/Vulnerable (Men)
Giri-affected	Chaung Shay	Minbya	Rakhine	1	1	1	1
	Ngwe Twin Tu	Myebon	Rakhine	1	1	1	1
	Ku Lar Bar	Kyaukpyu	Rakhine	1	1	1	1
Coastal and delta	Myoma	Gwa	Rakhine	1	1	1	1
	Thu Kha Ba La	Bogale	Ayeyarwady	1	1	1	1
	Kone Gyi	Labutta	Ayeyarwady	1	1	1	1
Hilly	Vangteh	Tedim	Chin	1	1	1	1
	Bant Bway	Nawnghkio	Shan	1	1	1	1
	Myay Nio Kone	Nyaungshwe	Shan	1	1	1	1
Dry	Ywar Pa Lae	Nyaung-U	Mandalay	1	1	1	1
	Kin Mon Chone	Chauk	Magwe	1	1	1	1
	Poe Sar Khin	Taungdwingyi	Magwe	1	1	1	1
	Total number of FGDs			**12**	**12**	**12**	**12**

Livelihoods and Food Security Trust Fund

LIFT's Geographic Zones



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