

# Household Survey 2013



## Livelihoods and Food Security Trust Fund



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## **Livelihoods and Food Security Trust Fund**

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## Townships covered by the LIFT Household Survey 2013





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## Abbreviations and Acronyms

DiD	Difference in differences
FANTA	Food and Nutrition Technical Assistance
FGD	Focus group discussion
HDDS	Household dietary diversity score
HHS	Household Hunger Scale
IDDS	Individual Dietary Diversity Score
LIFT	Livelihoods and Food Security Trust Fund
MAHFP	Months of Adequate Household Food Provisioning
MSR	Myanmar Survey Research
NGO	Nongovernmental organisation
PG	Poverty Gap
PGI	Poverty gap index
PPP	Purchasing power parity
SD	Standard deviation
UN	United Nations
UNOPS	United Nations Office for Project Services
WHO	World Health Organisation

## Executive Summary

The multi-donor Livelihoods and Food Security Trust Fund (LIFT) commenced operations in Myanmar in 2010, supporting implementing partners (IPs) to assist poor families to increase their food availability and incomes in three of the country's main agro-ecological zones: the Hilly zone, Dry zone, and Delta zone. LIFT programming was later initiated in Rakhine State in the Coastal zone.

As part of its evaluation strategy, in late 2011 LIFT conducted a Baseline Household Survey covering 252 villages spread across the zones to provide information that could be used to assess the outcomes and impacts of LIFT support.

In 2013, LIFT contracted ICF International, Inc., which worked with Myanmar Survey Research to carry out a second household survey that included 2,400 LIFT households and 800 Control households in 200 villages. This document presents the findings of the 2013 survey, and comparisons with the first survey.

The findings show that rapid changes are happening in both LIFT and Control villages, but some of the changes seem to be greater in LIFT households, suggesting that interventions undertaken by LIFT IPs are having a positive impact on the lives of targeted poor rural communities.

These rural communities have poor road access, are not connected to the electric grid, and suffer periods of shortages of drinking water. Income levels increased in both LIFT and Control households, but a significantly greater proportion of LIFT households perceived that their income had increased.

Increase in food availability is one of the most significant changes, for both LIFT and Control communities. The proportion of households that experienced months with insufficient food fell from 75 percent in LIFT households and from 72 percent in Control households in 2011, to 10 and 12 percent respectively in the second survey. LIFT households were notably more likely than Control households to indicate that food availability had increased.

There were no significant differences between LIFT and Control households in terms of whether or not they took out loans, comparing the 2011 and 2013 surveys. However, there were important changes in the respective sources of their loans. There was a significant increase in LIFT households receiving a loan at an interest rate of 2.5 percent or less. There was no significant change for Control households. There was a marked decrease in LIFT households using money lenders and shopkeepers, while no such change took place in the Control households.

Another important change is in energy for lighting their homes. There was a marked increase in use of solar power, and a significant decrease in kerosene/oil lamps. By 2013, solar energy

replaced kerosene/oil lamps as the most common source of lighting in surveyed households.<sup>1</sup> The mean number of assets in both LIFT and Control households increased notably from 2011 to 2013. Some of the most important changes in asset ownership were for fuel-efficient wood stoves, gold/jewellery, TVs, mobile phones, and solar panels.

Information from all households interviewed in 2013 illustrated major variation between each of the agro-ecological zones in the number of male- and female-headed households, households of different income levels, and whether the households owned land or not. Many of the variations are based on geo-climatic factors such as different crops, farming practices, and labour market conditions which occur in each of the zones.

Female-headed households had lower average incomes than male-headed households, and were less likely to be involved in paddy growing and fishing. However, they were just as likely to own land and to benefit from most of the changes that took place, and had better housing than male-headed households.

Households with the highest income levels and those that owned land outperformed households with lower income levels and households without land. Overall, this was the case for food consumption, involvement in crop production, areas being planted and harvested, access to credit, and household assets.

The study has created a baseline for anthropometric indicators. A total of 22 percent of children under 5 years of age in the survey population showed signs of being moderately or severely underweight. The proportion of underweight children was the same for both LIFT and Control households. One third of the children under 5 years of age showed signs of moderate and severe stunting. Further, 8 percent showed signs of moderate and severe wasting. There was a slight difference of prevalence of wasting in LIFT and Control households, with the rates being 7 and 9 percent respectively.

Finally, the study has established an expenditure baseline, which indicates that the poverty line in the country was 862.97 Myanmar kyat per person per day, and that the majority of households in the survey (71 percent) were living above the poverty line. There was no significant difference between the LIFT and Control households. However, there was such a difference for the three main agro-ecological zones, with fewer than two-thirds of the Dry zone households living above the poverty line, compared to around three-quarters of households in the Hilly and Dry/Coastal zones ( $p < .05$ ). The mean depth of poverty among the study participants was 6 percent, representing shallow poverty.

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1 These changes took place in both LIFT and Control households.



## ကျမ်းဦးစကား

အလှူရှင်အများစုပေါင်း မတည်ထားသော အသက်မွေးဝမ်းကျောင်းနှင့် စားနပ်ရိက္ခာဖူလုံရေး ရန်ပုံငွေ (LIFT) သည် မြန်မာနိုင်ငံအတွင်း လုပ်ငန်းစဉ်များကို ၂၀၁၀ ပြည့်နှစ်တွင် စတင် ဆောင်ရွက်ခဲ့ပြီး မြန်မာနိုင်ငံ၏ အဓိက စိုက်ပျိုး စီးပွားဇုံကြီးသုံးခုဖြစ်သော တောင်တန်းဒေသ၊ အပူပိုင်းဒေသနှင့် မြစ်ဝကျွန်းပေါ်ဒေသများရှိ ဆင်းရဲသော မိသားစုများ၏ အစားအစာ ရရှိနိုင်မှုနှင့် ဝင်ငွေ မြှင့်တင်ပေးရာတွင် ထောက်ပံ့ပေးနိုင်ရန် အကောင်အထည်ဖော်ရေး မိတ်ဖက်အဖွဲ့များ (IPs) အား ရန်ပုံငွေ ထောက်ပံ့ပေးနေပါသည်။ ယင်းနောက်တွင် LIFT ၏ အစီအစဉ်များအား ကမ်းရိုးတန်းဒေသရှိ ရခိုင်ပြည်နယ်တွင်ပါ စတင် ဆောင်ရွက်လာခဲ့သည်။

အကဲဖြတ် လေ့လာမှု မဟာဗျူဟာ တစ်စိတ်တစ်ပိုင်းအနေဖြင့် LIFT ၏ အစီအစဉ်များမှ ထွက်ပေါ်လာမည့် ရလဒ်များနှင့် အကျိုးသက်ရောက်မှုများကို တိုင်းတာရာတွင် အသုံးပြုနိုင်မည့် အချက်အလက်များရရှိရန်အလို့ငှာ ၂၀၁၁ ခုနှစ် နှောင်းပိုင်းတွင် LIFT သည် အခြေခံ အိမ်ထောင်စု အချက်အလက်ကောက်ယူခြင်း (Baseline Household Survey) ကို ကျေးရွာပေါင်း ၂၅၂ ရွာတွင် ဆောင်ရွက်ခဲ့သည်။

LIFT သည် ကျေးရွာပေါင်း ၂၀၀ ရှိ LIFT စီမံကိန်းဝင် အိမ်ထောင်စုပေါင်း ၂၄၀၀ နှင့် စီမံကိန်းတွင် အကျုံးမဝင်သော အိမ်ထောင်စုပေါင်း ၈၀၀ တို့ ပါဝင်သည့် ဒုတိယအကြိမ် အိမ်ထောင်စု အချက်အလက်ကောက်ယူခြင်း လုပ်ငန်းအား Myanmar Survey Research အဖွဲ့နှင့် တွဲဖက်၍ လုပ်ကိုင်ရန် ICF International Inc. အား ၂၀၁၃ ခုနှစ်တွင် စာချုပ် ချုပ်ဆိုခန့်အပ်ခဲ့သည်။ ဤစာတမ်းတွင် ၂၀၁၃ ခုနှစ်အတွင်း အချက်အလက် ကောက်ယူမှုမှ ရရှိလာသည့် တွေ့ရှိချက်များနှင့် ပထမ ကောက်ယူမှုမှ အချက်အလက်များနှင့် နှိုင်းယှဉ်ချက်တို့ကို ဖော်ပြထားခြင်း ဖြစ်ပါသည်။

တွေ့ရှိချက်များက LIFT စီမံကိန်းဝင်နှင့် စီမံကိန်းတွင် အကျုံးမဝင်သော ကျေးရွာများ အားလုံးတွင် သိသိသာသာ အပြောင်းအလဲများ ဖြစ်ပေါ်နေသည်ကို ပြသနေပြီး အချို့အပြောင်းအလဲများသည် LIFT စီမံကိန်းဝင် အိမ်ထောင်စုများတွင် ပိုမို အားကောင်းကြောင်း တွေ့ရသဖြင့် LIFT မိတ်ဖက်အဖွဲ့များ၏ ဝင်ရောက် ဆောင်ရွက်မှုများသည် ရည်ရွယ်သော ဆင်းရဲသည့် ကျေးလက်နေ လူထုအပေါ် အပြုသဘော သက်ရောက်မှုများ ရှိနေသည်ဟု ဖော်ပြနေသည်။

ဆင်းရဲသော လူထုသည် လမ်းပန်းဆက်သွယ်ရေး ခက်ခဲမှု၊ လျှပ်စစ်ဓာတ်အားလိုင်းနှင့် ချိတ်ဆက်မထားမှုနှင့် သောက်သုံးရေပြတ်လပ်မှု ကာလများတို့ကို တွေ့ကြုံခံစားနေကြရသည်။ LIFT စီမံကိန်းဝင်နှင့် စီမံကိန်းတွင် အကျုံးမဝင်သော အိမ်ထောင်စု နှစ်မျိုးနှစ်စားလုံးတွင် ဝင်ငွေအနေအထား မြင့်တက်လာခဲ့သည်ကို တွေ့ရပြီး LIFT စီမံကိန်းဝင် အိမ်ထောင်စုများ၏ သိသာများပြားသော အရေအတွက်သည် ၎င်းတို့၏ ဝင်ငွေတိုးတက်လာကြောင်း ပိုမိုပြသနိုင်ခဲ့သည်။

အစားအစာ ရရှိနိုင်မှု မြင့်တက်လာခြင်းသည်လည်း LIFT စီမံကိန်းဝင်နှင့် စီမံကိန်းတွင် အကျုံးမဝင်သော အသိုက်အဝန်း နှစ်မျိုးစလုံးတွင် သိသာထူးခြားမှု အရှိဆုံး အပြောင်းအလဲများထဲမှ တစ်ခုပင်ဖြစ်သည်။ အစားအစာ မလုံလောက်သည့် လူများကို ရင်ဆိုင်ခံစားရသည်ဆိုသော အိမ်ထောင်စု အရေအတွက်သည် ၂၀၁၁ ခုနှစ်တွင် LIFT စီမံကိန်းဝင် အိမ်ထောင်စုများ၏ ၇၅% နှင့် စီမံကိန်းတွင် အကျုံးမဝင်သော အိမ်ထောင်စုများ၏ ၇၂% ရှိခဲ့ရာမှ ဒုတိယစစ်တမ်း

ကောက်ယူချိန်တွင် ၁၀% နှင့် ၁၂% သို့ အသီးသီး လျော့ကျသွားခဲ့သည်။ LIFT စီမံကိန်းဝင် အိမ်ထောင်စုများသည် စီမံကိန်းတွင် အကျိုးမဝင်သော အိမ်ထောင်စုများထက် အစားအစာရရှိနိုင်မှု ပိုမိုမြင့်တက်လာခဲ့ကြောင်း သိသိသာသာ တွေ့ရှိရသည်။

၂၀၁၁ နှင့် ၂၀၁၃ စစ်တမ်းများ နှိုင်းယှဉ်ကြည့်မှုအရ ချေးငွေများ ရရှိနိုင်မှု အခြေအနေတွင် LIFT စီမံကိန်းဝင်နှင့် စီမံကိန်းတွင် အကျိုးမဝင်သော အိမ်ထောင်စုများအကြား သိသာထူးခြားသော ကွဲပြားမှုမျိုး မတွေ့ရပေ။ သို့သော်လည်း ၎င်းတို့၏ ချေးငွေရရှိရာ အရင်းအမြစ်ပိုင်းတွင် အရေးပါသော အပြောင်းအလဲများ ဖြစ်ပေါ်ခဲ့သည်။ LIFT စီမံကိန်းဝင် အိမ်ထောင်စုများတွင် အတိုးနှုန်း ၂.၅ ရာခိုင်နှုန်းနှင့်အောက်သာ ပေးရသော ချေးငွေအမျိုးအစား ရရှိသည့် အိမ်ထောင်စု အရေအတွက် သိသိသာသာ တိုးတက်လာခဲ့သည်။ စီမံကိန်းတွင် အကျိုးမဝင်သည့် အိမ်ထောင်စုများတွင်မူ ထူးထူးခြားခြား ပြောင်းလဲမှု မရှိပေ။ ငွေတိုးချေးစားသူများနှင့် ဈေးဆိုင်ရှင်များထံမှ ချေးငွေရယူသည့် အရေအတွက်သည် LIFT စီမံကိန်းဝင် အိမ်ထောင်စုများတွင် လျော့ကျသွားသည်ကို တွေ့ရသော်လည်း စီမံကိန်းတွင် အကျိုးမဝင်သည့် အိမ်ထောင်စုများတွင် ယင်းသို့သော အပြောင်းအလဲမျိုး မတွေ့ရပေ။

အခြား အရေးပါသည့် အပြောင်းအလဲတစ်ခုမှာ မိသားစု အလင်းရောင် ရရှိရေးအတွက် သုံးစွဲရသည့် စွမ်းအင်ကဏ္ဍပင် ဖြစ်သည်။ နေရောင်ခြည်စွမ်းအင်ကို အသုံးပြုမှု သိသိသာသာ တိုးလာခဲ့ပြီး ရေနံဆီ သို့မဟုတ် ဆီမီးအိမ်များ အသုံးပြုမှု သိသာစွာ လျော့ကျသွားခဲ့သည်။ ၂၀၁၃ ခုနှစ် စစ်တမ်းကောက်ယူခဲ့သည့် အိမ်ထောင်စုများတွင် ရေနံဆီ သို့မဟုတ် ဆီမီးအိမ်များ၏ အသုံးအများ ဆုံး အလင်းရောင်ရင်းမြစ်နေရာကို နေရောင်ခြည်စွမ်းအင်က လွှဲပြောင်းရယူသွားခဲ့ပြီဖြစ်ကြောင်း တွေ့ရှိရသည်။

LIFT စီမံကိန်းဝင်နှင့် စီမံကိန်းတွင် အကျိုးမဝင်သည့် အိမ်ထောင်စု နှစ်မျိုးစလုံးတွင် ဥစ္စာပစ္စည်း ပိုင်ဆိုင်မှု ပျမ်းမျှအရေအတွက်သည်လည်း ၂၀၁၁ ခုနှစ်ထက် ၂၀၁၃ ခုနှစ်တွင် သိသိသာသာ တိုးလာကြောင်း တွေ့ရသည်။ ဥစ္စာပစ္စည်း ပိုင်ဆိုင်မှုတွင် အရေးအပါဆုံး အပြောင်းအလဲများအနက် အချို့မှာ ထင်း မီးသွေး လောင်စာ ခြွေတာရေး မီးဖိုများ၊ ရွှေ၊ လက်ဝတ်ရတနာ၊ တီဗွီ၊ လက်ကိုင်ဖုန်း နှင့် နေရောင်ခြည်စွမ်းအင်သုံး ဆိုလာပြားများ ပိုင်ဆိုင်လာကြခြင်းပင်ဖြစ်သည်။

၂၀၁၃ ခုနှစ် စစ်တမ်းကာလအတွင်း တွေ့ဆုံမေးမြန်းခဲ့သည့် အိမ်ထောင်စု အားလုံးထံမှ ရရှိခဲ့သည့် အချက်အလက်များက စိုက်ပျိုးစီးပွားဖွံ့ဖြိုးတစ်ခုနှင့် တစ်ခုအကြား အမျိုးသား သို့မဟုတ် အမျိုးသမီး ဦးဆောင်သော အိမ်ထောင်စု အရေအတွက်၊ ဝင်ငွေအခြေအနေ အမျိုးမျိုး ရရှိကြသည့် အိမ်ထောင်စုများနှင့် မြေပိုင်ဆိုင်မှု အခြေအနေတို့တွင် အဓိက ကွဲပြားခြားနားမှုများကို ဖော်ပြနေသည်။ ကွဲပြားခြားနားမှု အများအပြားသည် ဖွံ့ဖြိုးတစ်ခုနှင့် တစ်ခုအကြား ဖြစ်ပေါ်နေသည့် စိုက်ပျိုးသီးနှံ၊ စိုက်ပျိုးရေး အလေ့အထများနှင့် လုပ်သားဈေးကွက် အခြေအနေတို့ မတူညီမှုများကဲ့သို့သော ပထဝီနှင့် ရာသီဥတု အနေအထားတို့ကို အခြေခံသည်။

အမျိုးသမီး ဦးဆောင်သော အိမ်ထောင်စုများသည် အမျိုးသား ဦးဆောင်သော အိမ်ထောင်စုများနှင့် နှိုင်းယှဉ်လျှင် ပျမ်းမျှဝင်ငွေ ပိုမို နည်းပါးကြပြီး စပါး စိုက်ပျိုးမှုနှင့် တံငါလုပ်ငန်းများတွင် ပါဝင် ဆောင်ရွက်နိုင်မှု ပိုနည်းကြသည်။ သို့သော်လည်း ယင်းတို့သည် မြေယာ ပိုင်ဆိုင်မှု၊ ဖြစ်ပေါ်ခဲ့သော အပြောင်းအလဲ အများစုမှ အကျိုးဖြစ်ထွန်း ခံစားနိုင်မှုနှင့် ပိုကောင်းသော အိမ်ခြံ ပိုင်ဆိုင်မှုတို့တွင်

အမျိုးသားဦးဆောင်သော အိမ်ထောင်စုများထက် ပိုမို အခွင့်သာကြောင်း တွေ့ရှိရသည်။

သို့သော်လည်း ဝင်ငွေ အမြင့်ဆုံးအဆင့်ရှိသည့် အိမ်ထောင်စုများနှင့် မြေယာပိုင်ဆိုင်သည့် အိမ်ထောင်စုများသည် ဝင်ငွေ ပိုနိမ့်ပြီး မြေယာပိုင်ဆိုင်ခြင်း မရှိသော အိမ်ထောင်စုများထက် တိုးတက်မှု ပိုမို ကောင်းမွန်ကြောင်းလည်း တွေ့ရှိရသည်။ ခြုံငုံပြောရလျှင် အစားအစာ စားသုံးနိုင်မှု၊ သီးနှံစိုက်ပျိုးရေးလုပ်ငန်းတွင် ပါဝင်နိုင်မှု၊ စိုက်ပျိုး ရိတ်သိမ်းမှု ပြုလုပ်သည့် ဧရိယာ၊ ချေးငွေ လက်လှမ်းမီမှုနှင့် အိမ်ထောင်စု ဥစ္စာပိုင်ဆိုင်မှုတို့တွင် ပိုမိုကောင်းမွန်ကြသည်။

ဤလေ့လာမှုက မနုဿဗေဒဆိုင်ရာ အခြေပြု ညွှန်းကိန်းများကို ဖန်တီး ဖော်ထုတ်ခဲ့သည်။ စစ်တမ်း ကောက်ယူခဲ့သော အိမ်ထောင်စုများရှိ အသက် ၅ နှစ်အောက် ကလေးများ၏ ၂၂ ရာခိုင်နှုန်းသည် ရှိသင့်သည့် ကိုယ်အလေးချိန်အောက် အတန်အသင့် သို့မဟုတ် အလွန်အကျွံ လျော့နည်းနေကြောင်း ပြသနေသည်။ ကိုယ်အလေးချိန် ရှိသင့်သည်ထက် လျော့နည်းနေသည့် ကလေး အချိုးအဆသည် LIFT စီမံကိန်းဝင်နှင့် စီမံကိန်းတွင် အကျုံးမဝင်သော အိမ်ထောင်စုများတွင် အတူတူပင် ဖြစ်သည်။ အသက် ၅ နှစ်အောက်အရွယ် ကလေးများ၏ သုံးပုံတစ်ပုံသည် ကြီးထွားဖွံ့ဖြိုးမှု အထိက်အလျှောက် သို့မဟုတ် သိသိသာသာ နှေးကွေးနေကြောင်း တွေ့ရသည်။ ထို့ပြင် ၈ ရာခိုင်နှုန်းသည် ကြီးထွား ဖွံ့ဖြိုးမှု အသင့်အတင့် သို့မဟုတ် အလွန်အမင်း နိမ့်ကျ သေးညက်နေသည့် လက္ခဏာကို တွေ့ရသည်။ ကြီးထွားမှုနှုန်း နိမ့်ကျ သေးညက်သည့် အရေအတွက်တွင် LIFT စီမံကိန်းဝင်နှင့် စီမံကိန်းတွင် အကျုံးမဝင်သော အိမ်ထောင်စုများအကြား အနည်းငယ် ကွဲပြားမှုရှိပြီး နှုန်းထားမှာ ၇ နှင့် ၉ ရာခိုင်နှုန်း အသီးသီးရှိကြသည်။

နိဂုံးချုပ်အားဖြင့် ဤလေ့လာမှုသည် အသုံးစရိတ်များနှင့် ပတ်သက်သည့် အခြေပြုစံနှုန်းကို သတ်မှတ်နိုင်ခဲ့ပြီး မြန်မာနိုင်ငံ၏ ဆင်းရဲမွဲတေမှု ညွှန်မှတ်မျဉ်းသည် လူတစ်ဦး တစ်ရက်ဝင်ငွေ ၈၆၂.၉၇ ကျပ် ဖြစ်ပြီး စစ်တမ်း ကောက်ယူခဲ့သည့် အိမ်ထောင်စုများ၏ အများစု (၇၁ ရာခိုင်နှုန်း) သည် ယင်း ဆင်းရဲမွဲတေမှု ညွှန်မှတ်မျဉ်း၏ အထက်တွင် ရှင်သန်အသက်မွေးနေကြသည်။ ဤကိစ္စရပ်နှင့် ပတ်သက်၍ LIFT စီမံကိန်းဝင်နှင့် စီမံကိန်းတွင် အကျုံးမဝင်သော အိမ်ထောင်စုများ အကြား သိသာထင်ရှားသည့် ကွဲပြားခြားနားချက် မရှိပေ။ သို့သော်လည်း အဓိက စိုက်ပျိုး စီးပွားဖွံ့ဖြိုး ၃ ခုအကြားတွင်တော့ ယင်းသို့သော ခြားနားမှုများ တွေ့ရသည်။ အပူပိုင်းဇုန်ရှိ မိသားစုများ၏ သုံးပုံ နှစ်ပုံအောက်နည်းသော အိမ်ထောင်စုများသည် ဆင်းရဲမွဲတေမှုမျဉ်း၏ အထက်တွင်ရှိပြီး ကုန်းမြင့်နှင့် ကမ်းရိုးတန်း ဇုန်များရှိ အိမ်ထောင်စုများ၏ လေးပုံသုံးပုံသည် ဆင်းရဲမွဲတေမှုမျဉ်း၏ အထက်တွင် ရှိကြသည်။ စစ်တမ်းဝင် အိမ်ထောင်စုများအကြား ဆင်းရဲမှု အတိမ်အနက် ကွာခြားမှု ပမာဏသည် ၆ ရာခိုင်နှုန်း ဖြစ်ပြီး ဆင်းရဲမှု အသင့်အတင့်သာ ရှိကြောင်း ဖော်ပြသည်။

## 1. Introduction

As part of its evaluation strategy, LIFT conducted a baseline survey covering 252 villages that spread across these zones in late 2011 to provide information that could be used to assess the outcomes and impacts of this support. A second survey in 200 villages was carried out late in 2013; this document presents the findings of this survey, with comparisons to the first one.

### 1.1. Background

LIFT is a multi-donor fund designed to increase food availability and income for 2 million poor and vulnerable people in Myanmar. It was established in Myanmar in 2009. At the time of the survey, the LIFT donors were Australia, Denmark, the European Union, France, Ireland, Italy, the Netherlands, New Zealand, Sweden, Switzerland, the United Kingdom, and the United States of America. The donors contracted the United Nations Office for Project Services (UNOPS) as the Fund Manager to administer the funds and provide monitoring and oversight. Recent additional contributions by donors have increased the funds available, and the term of the LIFT programme has been extended until the end of 2018.

LIFT contributes resources to a livelihoods and food security programme to support the achievement of Millennium Development Goal 1<sup>2</sup>—the eradication of extreme poverty and hunger in Myanmar. LIFT works through a trust fund modality providing funding to a broad array of implementing partners including international nongovernmental organisations (NGOs), national NGOs and private sector agencies, and United Nations (UN) organisations, which contribute to the following common programmatic outputs:

- **Output 1: Increased agricultural production and incomes supported through improved production and post-harvest 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, but also contribute to food security (e.g., support to wild capture fishery production).

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2 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.

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 of inputs, 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, 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 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 provide a safety net for the most food insecure (who may not benefit from either output 1 or 2) more directly. 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 other communities with options to pilot.
- **Output 5: Capacity of civil society to be strengthened to support and promote food and livelihoods security for the poor.** Social actors and social action are crucial 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 who were successful in submitting proposals that supported the LIFT purpose in the targeted areas. An initial 1 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 3-year sub-programmes commenced in 2011, providing funding support to implementing partners working in the delta (the Delta II sub-programme) and more widely across the country (the Countrywide sub-programme). A fourth programme is taking place in Rakhine State to provide support to the four townships most affected by Cyclone Giri, which hit in October 2010 (the Tat Lan sub-programme). Although households in the four Giri-affected townships were interviewed in the first survey, they were not included in the second one. This was due to a slow start up for the new programme. When the second survey started, the Tat Lan sub-programme had not chosen its treatment villages, neither had it finalised its log frame. The exclusion of the Giri-affected



townships from the second survey is why data was collected from only 200 villages, compared to 252 villages in the first survey.

## **1.2. Objectives of the 2011 baseline and 2013 household data collection rounds**

The first and second LIFT data collection rounds 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. Information was required to represent the three broad agro-ecological zones covered in the Delta II and Countrywide sub-programmes.

In the second round, in addition to livelihoods, extra information was collected in order to gain a better understanding of the living conditions of rural inhabitants through Myanmar. First, information was gained on the nutrition and anthropometry measurements of children aged less than 5. Also, details were gained on the expenditure patterns of the people in order to understand poverty throughout the programme area better.

Both the 2011 baseline and 2013 household survey results will be a fundamental part of LIFT's evaluation strategy, which includes a before-after assessment of LIFT interventions and a with-without analysis using results from control villages.

The two surveys aim 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 two surveys in this document depict the success of the LIFT programme to date. These findings will be compared with a third and final survey, which will take place at the end of the LIFT programme.

## **2. Methodology**

### **2.1. Research tools**

The data tools used in the first data round were as follows:

- A village profile
- A household survey
- Focus group discussions (FGDs)

In addition to these three tools, the second data round also used the following:

- A nutrition and anthropometry survey
- An expenditure survey

The number of cases collected in LIFT and Control villages and households for each tool are shown in Table 1.

**Table 1: Data tools and number of cases**

Tool	LIFT Villages	LIFT Households per village	Control Villages	Control Households per village	Total
<b>Round 1</b>					
Village Profile	150	NA	50	NA	200*
Household questionnaire	150	16	50	16	3,200
FGD	12	4	NA	NA	48
<b>Round 2</b>					
Village Profile	150	NA	50	NA	200
Household questionnaire	150	16	50	16	3,200
FGD	9	4	NA	NA	36
Nutrition and anthropometry survey	150	32	50	32	6,400
Expenditure survey	150	5	50	5	1,000

\* In round 1, additional 52 village profiles were collected in the Giri-affected areas, but are not included in the analysis of this report.

### 2.1.1. The village profile

The characteristics of each village selected for the data collection process were documented through a process of key informant interviews with representatives from the village authorities and leaders. A format for this information was developed and pre-tested in the national language—Myanmar language—and enumerators were trained in collecting and recording the required information. The English language version of the village profile format is provided in Annex 1. The following summarises the key topics covered in the village profile:

- The number of households, males and females in the village
- Average wages offered per day paid, locally
- Village access and proximity to services
- Standard of road access to the village
- Availability of electricity
- Infrastructure/facilities within the village
- The number of self-help groups and how active they are
- The number of NGOs and their activities in the village
- The extent of trainings in the village
- Sources of credit in the village
- Water sources in the village and periods of water shortage

### 2.1.2. The household questionnaires

The Round 1 household questionnaire from the baseline survey was designed and developed by UNOPS, and research firm Myanmar Survey Research (MSR) with support from the [Food](#)

[and Agriculture Organisation of the United Nations](#). They incorporated standard Food and Nutrition Technical Assistance (FANTA) food security questions used globally by international aid agencies. Other questions were designed around key expected outcomes and associated indicators of the LIFT programme. The questionnaire was developed in English and then translated into Myanmar language. The questionnaire was piloted in rural communities, ensuring it was culturally appropriate.

Before the second round of data collection, the first household questionnaire was reviewed by UNOPS, MSR, and ICF International. Apart from refining some questions because of confusion by respondents and data collectors during data collection of the baseline survey in late 2011, two new sections were added to the questionnaire: one on households' involvement with LIFT partners, and the other on access to drinking water during the year.

The questionnaires of the baseline and 2013 household surveys were developed to be simple to answer and to record responses, and not to take more than 45 minutes on average to complete. There were no open questions in the questionnaires, making recording of answers simple and quick.

The new version of the questionnaire was tested as part of the 2013 household survey training process for data collectors. Further revisions to the wording of the questionnaire were made after feedback from the data collectors. The English version of the second round household questionnaire is provided in Annex 2. The following summarises the key questionnaire topics:

### ***Demographic information***

- 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.)

### ***Involvement with LIFT partners***

This section of the questionnaire was not asked in the first round of data collection as part of the baseline survey, as at that time no households had experienced any interaction with LIFT partners. In the second round of data collection as part of the 2013 household survey, these questions were asked only to households in the villages in which LIFT partners were present, so there is no information for these questions from Control households. This section in the questionnaire asked the following:

- Awareness among households about the LIFT programme
- Whether household members had participated in a range of trainings

### ***Household income***

- Major sources of income for each agro-ecological zone and social group
- Significance of new sources of income introduced by LIFT partners (frequency and percentage of households reporting each specific income source)
- Changes in the main sources of household income overtime
- Average household monthly income from all sources (using a simple scale)
- 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 percentage 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 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)
- 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)
- 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 [HDDS] is one measure of improved household food consumption, which in turn is an outcome of improved household food access)
- Number and percentage of households with Months of Adequate Household Food Provisioning (MAHFP) below certain threshold (another measure of household food access)
- Number and percentage of households with Household Hunger Scale (HHS) score above a certain threshold, median HHS score
- Number and percentage 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 percentage 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)
- 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
- 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 percentage 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 implementing partner interventions

### ***Marketing of crops***

- Frequency and percentage of households accessing market price information from different sources
- Frequency and percentage of households selling at different market locations
- Frequency and percentage 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 percentage of households accessing credit from low-interest micro-finance groups, village savings and loans associations, and all other formal and informal sources
- Frequency and percentage 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 socioeconomic 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***

- Frequency and percentage of households with different livestock assets (these assets are a factor in household income and wealth, but also important to assess impact of implementing partner interventions that provide livestock to landless, poor, and vulnerable households)



- Frequency and percentage of households with different agricultural equipment and machinery (to assess wealth, impact of implementing partner interventions related to agricultural equipment provision, and general changes in agricultural investment and technologies)
- Frequency and percentage of households with other household assets as a proxy indicator of wealth
- Frequency and percentage of households with boats, nets, aquaculture ponds (to assess impact of implementing partner interventions related to fishery support, also a factor in food security/income)

### **Training**

- Number and percentage 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

### **Access to water**

This section did not exist in the baseline survey questionnaire; however, it was believed that to better understand the lives of rural households, it was important to gain information about their drinking water supply and usage. The questions in this section focused on the following:

- The main source of drinking water during the past rainy, winter, and summer seasons
- Whether the households treated their drinking water before drinking it, and if so, how

#### **2.1.3. The nutrition and anthropometry survey**

This questionnaire was given to every selected household with children aged less than 5 years. To ensure that the sample of children of this age was sufficient for analysis, additional households were randomly selected in each selected village in addition to those selected for the household survey. The questionnaire was a shortened version of the household questionnaire, but with two additional sections: (1) anthropometric measurements, and (2) an individual dietary diversity score for children aged less than 5 years. Questions from these two sections were asked to the main caregiver for every child in the household of this age. The English language version of the survey is provided in Annex 3. The questions of the two additional sections are as follows:

#### **Anthropometric measurements**

- Age and sex of the child
- The weight of the child
- The height of the child

### ***Child health and nutrition***

- Whether the child was being breastfed
- Whether the child in the last 24 hours ate a range of foods
- Whether the child had diarrhoea in the last 2 weeks

For anthropometry indicators, the World Health Organization (WHO) software flagged biologically implausible cases according to WHO criteria,<sup>3</sup> and only those children with valid weight and height scores were included in the analysis for the stunting and underweight indicators. Implausible cases were excluded from the analysis, but were left in the dataset.

#### **2.1.4. The expenditure survey**

In the second round of data collection, every eighth household receiving the household survey was asked to complete an extra module—the household expenditure survey. This module was based on the Integrated Household Living Conditions Assessment survey undertaken in Myanmar in 2009–2010, which in turn was based on the World Bank’s The Living Standards Measurement Study survey,<sup>4</sup> which has been used internationally. It was adapted to the Myanmar context by including local foods and other goods consumed in the country. The English language version of the module is provided in Annex 4. The module was divided into six sections and is detailed below:

##### ***Food consumption expenditures in the last 7 days consumed at home***

Respondents were asked to indicate the following: if any family member ate any food item, as listed below, and if so, how much household members consumed; how much of the consumption was purchased; the cost of this purchase; how much of what was consumed came from gifts, payments in-kind; and how much consumed came from home production. Local foods were categorised into the following groups:

- Pulses, beans, nuts, and seeds
- Meat, dairy, eggs
- Fish and other seafood
- Roots and tubers
- Vegetables
- Fruits
- Spices and condiments
- Other food products

##### ***Other food consumption expenditures in the last 7 days***

- Alcoholic beverages consumed at home or outside of home
- Food and beverages taken outside home

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3 WHO Multicentre Growth Reference Study Group. WHO Child Growth Standards: Length/height-for-age, weight-for-age, weight-for-length, weight-for-height, and body mass index-for-age: Methods and development. Geneva: World Health Organization, 2006 (312 pages).

4 <http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/EXTLSMS/0,,contentMDK:21478196~menuPK:3359066~pagePK:64168445~piPK:64168309~theSitePK:3358997,00.html>

### ***Food consumption expenditures in the last 30 days***

- Rice and cereals
- Oil and fats
- Milk products
- Other food items

### ***Non-food consumption expenditures in the last 30 days***

- Energy for household use
- Water
- Personal apparel
- Medicines/drugs (including traditional medicine)
- Local transport (daily travel excluding that for health and education)
- Other non-food items

### ***Non-food consumption expenditures in 6 months***

- Clothing and other apparel
- Home equipment
- House rent and repair
- Health (including traditional medicine)
- Education (including pre-school and adult education)
- Travel/trips (overnight travel excluding health and education)
- Other

### ***Value of assets***

- Household items
- Agricultural items

#### **2.1.5. Focus group discussions**

Qualitative information was collected in both Round 1 and Round 2 by means of FGDs with various community subgroups. These used open-ended questions focussing on specific themes (Annex 5). In Round 1, 48 FGDs were undertaken in 12 villages: three randomly selected from the villages selected for the household survey in each of the four “strata” (Coastal/Delta zone, Dry zone, Hilly zone, and Rakhine Giri-affected areas). In the second survey, 36 FGDs took place in nine villages—no FGDs took place in the Rakhine Giri-affected area in this data collection round, as the LIFT programme had not started in this area. The zones, villages, and implementing partners in those villages where the FGDs took place in the two rounds are provided in Annex 6.

The FGDs in both surveys were conducted with three groups:

- Agricultural producers (mixed men and women)
- People involved in non-agricultural livelihoods/activities (mixed men and women) to cover the main types of non-agricultural activities

- Representatives from the poorest and most vulnerable households (separate groups of women and men).

The FGD questions focused on the following areas of inquiry:

- 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 socioeconomic and livelihood groups, social capital in the community as related to food security, access to and use of credit).

## 2.2. Sampling

There are 2,102 villages in 76 townships covered by the LIFT programme (Table 2). The total number of households covered is 308,095, with an estimated population of 1.4 million. The 76 townships fall into three agro-ecological zones:

- Hilly zone (Shan, Kachin, and Chin states)
- Dry zone (Magway, Sagaing, and Mandalay states)
- Coastal/Delta zone (Ayeyarwady and Rakhine states)

**Table 2: Population details of communities in the LIFT programme area**

Zone	Number of townships	Number of villages	Number of Households
Hilly	24	529	56,842
Dry	45	870	149,059
Coastal/Delta	7	703	102,194
<b>Total</b>	76	2,102	308,095

For this study, LIFT villages are defined as those villages that had received an intervention from one of the programme's implementing partners, while the Control villages had not received such an intervention.

In 2011, 200 villages—divided into 150 LIFT and 50 Control villages—were randomly selected with probability proportional to size from the total number of villages located in the geographic area covered by the LIFT programme.

The LIFT and Control villages were divided between the three agro-ecological zones: 50 LIFT villages in each zone, and 17 Control villages in both the Hilly and Dry zones and 16 in the Coastal/Delta zone. Each selected village received the village profile questionnaire, as detailed above.

In each of the 200 villages, 16 households were randomly selected and were interviewed with the household questionnaire. That gave a total of 2,400 LIFT households and 800 Control households, giving a total of 3,200 households that received the questionnaire.

The sampling methodology was designed to allow statistical comparisons among the Hilly, Dry, and Coastal/Delta zones. The sample size was based on the following formula:

$$n = \frac{z^2 p (1-p)}{e^2}$$

Where:

- n = the required sample size
- z = the critical z score of the normal distribution. By default this is the 95 percent confidence interval, or z = 1.96
- p = estimated prevalence for a given indicator. By default, this is 0.5, the value yielding the largest possible margin of error
- e = margin of error, by default this is 0.05 (5 percent)

This gave a sample size of 385 households, which was doubled to allow for a design effect (due to clustering in the two-stage sampling design) and rounded up to 800 households per zone. The 2,400 households were perceived to be sufficient to represent the three zones.

For the nutrition and anthropometry survey, in addition to the 16 selected households for the household survey, a further 32 households were randomly selected, giving a total of 48 households in each village, and a total of 9,600 households in both LIFT and Control villages that were given this survey. However, it was only administered to those households that had a child aged less than 5 years. Of the 9,600 households, 3,296 households had at least one child of this age.

### 2.3. Training and piloting

For the second round of data collection, MSR—with support from UNOPS and ICF survey and anthropometry specialists—trained the interviewers and supervisors. The training originally consisted of 4 days of questionnaire review and practices for the interviewers and a separate 2-day session for the supervisors. At the end of the 4 days, it was decided that the interviewers needed an additional 2 days of training before they were ready to start the data collection process.

The interviewers were divided into two groups: one undertaking training of the housing and the expenditure surveys and the second group undertaking the nutrition and anthropometry training. The nutrition and anthropometry training provided first-hand experience measuring the weight and height of children aged less than 5 years. The SECA weighing scales were purchased and tested for consistency; they proved to be in good condition, with no errors found during the training. The height boards used were problematic, as the tape/ruler was too



small to read easily and not fixed to the board properly, and some boards were inconsistent. Consequently, Shorr Height Boards were ordered; they arrived in time for the interviewers to use in the field rather than the original boards used in the training.

The trainings for all interviewers had similar elements, and training manuals were developed for interviewers. Training began with a detailed explanation of the objectives of the survey, sampling design, and method of selecting households and respondents within households. Trainers emphasised proper interviewer deportment and respondent confidentiality. A focus of the training was a detailed explanation of the questionnaire, question by question, including routing and filtering, and a comprehensive discussion of directive and nondirective probing. Classroom discussion of the questionnaire was followed by practice interviews between interviewers and a discussion of any problems or respondent queries that arose.

All interviewers and supervisors participated in piloting of the questionnaires. The purpose of the pilots was to give interviewers practice in conducting the questionnaire as well as to identify potential problem areas, such as whether the questions were easily understood, whether the sequence of questions presented to respondents was logical, whether questionnaires were clear in terms of both coding and instructions to enumerators, and whether any of the questions was particularly difficult or sensitive.

After the training session, a pilot test was conducted in villages north of Yangon and in the Coastal/Delta zone. Feedback from interviewers was incorporated into the questionnaire. The additional training covered changes to all of the questionnaires since the pre-pilot version.

A separate 3-day training was provided to eight participants to learn how to undertake the FGDs. Although the two FGD teams consisted of six members, two extra people were trained in case any of the FGD team members needed to be replaced. The first day consisted of reviewing the FGD guideline and undertaking role plays where the participants either played the moderator, assistant and note taker, or as a participant in the hypothetical FGD. The second day of the training the participants visited a village and undertook a series of FGDs with various groups of villagers. The final day of the training was a review of the field work, determining what further changes needed to be made to the FGD guideline.

## **2.4. Fieldwork resources and logistics**

The household interview fieldwork for Round 1/the baseline survey started in late September 2011, and was completed by the beginning of November 2011, taking 42 days to complete. The second survey started in October and was completed by November 2013, taking 30 days to complete. Both surveys were undertaken just before the main monsoon harvest started. In the baseline survey, 14 teams comprising 51 interviewers (22 males and 29 females) were employed for the household survey. In the 2013 household survey, a total of 12 teams, made up of 96 members (44 males and 52 females), including supervisors and assistant supervisors, were assigned to conduct fieldwork for the household, expenditure and the nutrition

and anthropometry surveys. All interviewers were carefully trained in administering the questionnaire and were involved in the pre-test and associated debriefs.

To ensure accuracy and enhance quality, three members of the MSR management team went on field visits for quality control checks during the 2013 household survey. They visited eight townships in the first wave and one in the second wave, observing the interviews and helping solve any problems the interviewers encountered. Additionally, two staff members from ICF International and three from UNOPS visited a range of townships and observed the process. They also were able to make suggestions to improve the data collection process.

In both Round 1 in 2011 and Round 2 in 2012, two separate teams each of three people were employed for the FGD sessions. These six people received separate training from those trained for the household survey. The two FGD teams worked separately and spent 3 or 4 days in each village. Transcripts of each FGD were originally recorded in the national language and then translated into English.

## **2.5. Data entry**

For both data rounds, all questionnaires were checked by supervisors in the field prior to leaving each village to ensure they were completed and correct. In Yangon, questionnaire data was then double entered into the Census and Survey Processing System, a joint software product of the U.S. Census Bureau, ICF International, and Serpro S.A., ensuring data entry errors were identified and corrected, systematically eliminating transcription and data entry errors. The final data were then converted into SPSS.

## **2.6. Data packages used**

For the village profile, the household questionnaire and the expenditure survey data were analysed using the statistical package SPSS. The WHO software 'Anthro'<sup>5</sup> was used to analyse data from the nutrition and anthropometry survey. For the FGD findings, no data package was used. Instead, the FGDs were transcribed into Myanmar language then translated into English. The English version was reviewed and then organised into key themes covered by the household questionnaires. Both direct quotations and summaries from the FGD transcript were then used to enhance the quantitative findings. In this report, whenever information from an FGD is cited, the agro-ecological zone is referenced.

## **2.7. Limitations of the research**

It was not possible to visit all the same villages from Round 1 in Round 2. Nearly half of the villages where implementing partners had intended to work and were selected as LIFT baseline villages were not selected by the implementing partners and as such no longer

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5 <http://www.who.int/childgrowth/software/en/>

represented intervention villages. Also, nine selected Control villages in Round 1 ended up being supported by a LIFT implementing partner and thereby became treatment villages. These villages were removed from the sample. Further, in a small number of villages the security situation made it impossible for data collectors to visit. Annex 7 details the villages visited in Rounds 1 and 2 and highlights those villages that participated in the study in both surveys. The result was that, although 150 LIFT and 50 Control villages were randomly selected in 2013, only households in 68 LIFT and 36 Control villages were interviewed in both data collection rounds, rather than the original 150 and 50 planned villages.

Another problem with the data is the distribution of the villages in the three agro-ecological zones. Although the 36 Control villages were evenly divided between the three zones, the 68 LIFT villages were not (Table 3). In the Hilly zone there were 17 LIFT villages, for a total of 272 households in both data collection rounds. The number in the Dry zone was 16 villages and 256 households. In the Coastal/Delta zone the number was 35 villages and 560 households, which was twice as large as in the other two zones. Thus, only in the Coastal/Delta zone were there more than the basic sample size of 385 households perceived to be necessary to demonstrate significant statistical differences between the three zones.

**Table 3: Number and percentage of villages and households selected in both rounds**

	Hilly			Dry			Coastal/Delta		
	Villages	Households	%	Villages	Households	%	Villages	Households	%
<b>LIFT</b>	17	272	25***	16	256	23.5***	35	560	51.5***
<b>Control</b>	12	192	33.3	12	192	33.3	12	192	33.3
<b>Total</b>	29	464	27.9***	28	448	26.9***	47	752	45.2***

Not only is the sample smaller than planned, but also it raises issues of possible biases in the sample, as villages selected to be LIFT villages in the baseline but where no implementing partner undertook an intervention could have been inherently different from the LIFT villages where an intervention did take place.

Comparing LIFT villages that were selected in both Rounds 1 and 2 with those LIFT villages that were selected only in Round 1, it is clear that there were differences between the two. For example, the households had statistically significant differences in their sources of income, the types of food that they ate, the availability of food, land ownership, whether they grew crops, and in the constraints they faced to produce crops.

### 2.7.1. 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. However, in 2011 when the Control colleges were selected for Round 1, the only available information about the composition and even the location of villages was collected by LIFT implementing

partners. There was no population data or even locations for other villages in most townships of Myanmar. Global position system codes existed for villages in the Coastal/Delta zone, but not for the Dry or Hilly zones.

Thus, there was no sampling frame by which Control villages could be selected. At the time, it was not possible to determine if selected villages were urban or rural, or whether they had 1,500 or 15 households. The only feasible alternative to select Control villages was to use implementing partners' local knowledge to purposively select Control villages that they believed were comparable in terms of poverty, socioeconomic characteristics, and remoteness to those villages where they had selected to work.

### **2.7.2. 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). These problems existed for all the survey tools used in this study, but perhaps these problems were greatest for the expenditure survey, where respondents needed to give detailed responses about their and household members' consumption patterns.

### **2.7.3. Presentation of findings**

The study's findings are divided into four sections: village, household, nutrition and anthropometry, and consumption findings. The household findings include both a comparison between 2011 and 2013 findings, using only the interviewed households in the 68 LIFT and 36 Control villages that were visited in both of these years, and also comparisons between the three agro-ecological zones, households headed by males and females, between different income groups and between those owning land and those which were landless using the data from all the 150 LIFT and 50 Control villages visited in 2013.

Given that it was not possible to revisit in Round 2 all villages selected in Round 1, and that there are concerns about how random the remaining villages are in the sample, the data have been analysed using the difference-in-differences (DiD) estimator.

The basic logic behind the DiD estimator, ... or the "natural experiment approach", is to model the treatment effect by estimating the difference between outcome measures at two time points for both the treated observations and the controls ... and then comparing the difference between the groups—hence the difference-in-differences moniker. This strategy ensures that any variables that remain constant over time (but are unobserved) that are correlated with the selection decision and the outcome

variable will not bias the estimated effect.<sup>6</sup>

Using DiD, the report tests for statistical significance of differences between LIFT and Control households. It should be noted that the tests assume a simple random sample and do not adjust for the sampling design effect. There is also no adjustment for multiple comparisons.

Reviewing the 2013 data from households in the 150 LIFT and 50 Control villages, cross tabulations were used to make comparisons between households that were as follows: Hilly zone (1,072 cases), Dry zone (1,072 cases), and Coastal/Delta zone (1,056 cases); households with a male head (2,556 cases) and households with a female head (644 cases); households that had a monthly average total income in a normal month of 50,000 kyat or less (1,131 cases), those households with an average income of more than 50,000 to 100,000 kyat (1,269 cases), and those households earning on average more than 100,000 kyat per month (800 cases); and those households that owned land (1,850 cases) and those that did not (1,350 cases).

In some of the report's tables the comparison are made only between the three agro-ecological zones and LIFT (2,400 cases) and Control (800 cases) households. For example the village questionnaire findings are village based with no information from households; thus, it is not possible to make comparisons between male- and female-headed households, income groups, or for those with and without land.

In each table in this report where these comparisons are presented, each category is boxed off to indicate that where statistically significant differences exist, it is for within that category. For example, a significant difference for the three zones indicates that the difference is between all three zones and not between just two of them.

### **3. Village findings**

All the findings in this section are based on the village questionnaire, except for the next two tables, which show the ethnicity and religion of respondents from the Children's Health and Nutrition questionnaire.

#### **3.1. Ethnicity**

The main ethnic group in the country and in the survey was the Bamar, representing 59 percent of the survey respondents (Table 4). There was no statistically significant difference between LIFT and Control respondents. Nevertheless, there was a marked difference between the three agro-ecological zones. In the Dry zone, 99 percent of the respondents were Bamar, while this ethnic group accounted for 84 percent of the respondents from the Coastal/Delta zone, and only 5 percent of those from the Hilly zone ( $p < .001$ ).

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6 Buckley, J. and Y. Shang. (2003). "Estimating Policy and Program Effects with Observational Data: The 'Differences-in-Differences' Estimator." Retrieved 20 March, 2014, from <http://pareon-line.net/getvn.asp?v=8&n=24>.

The next largest ethnic group were the Chin, accounting for 13 percent of the sample. There was a statistically significant difference between LIFT and Control respondents, with the Chin accounting for 14 percent of LIFT households and 11 percent of Control households ( $p < .05$ ). The Chin were predominately located in the Hilly zone, accounting for 35 percent of all the households in this zone, while accounting for only 1 and .2 percent of the Dry and Coastal/Delta zone households ( $p < .001$ ).

The third- and fourth-largest ethnic groups in the study were the Pa-O and the Shan. The Pa-O accounted for 9 percent of the sample. There was a statistically significant difference, with the Pa-O accounting for more Control than LIFT households ( $p < .05$ ), and all of them were located in the Hilly zone ( $p < .001$ ). The Shan accounted for 7 percent of the sample, and more of them were from LIFT than Control households ( $p < .001$ ). Also, like the Pa-O, all of them were located in the Hilly zone ( $p < .001$ ).

**Table 4: Ethnicity of the respondents**

Proportion of households with:	Hilly	Dry	Coastal/ Delta	LIFT	Control	Total
<b>Bamar</b>	4.8***	98.6***	83.8***	59.2	58.2	59
<b>Kachin</b>	6.2***	.1***	.2***	1.9**	3.8**	2.4
<b>Kayah</b>	.2	0	0	0	.2	.1
<b>Kayin</b>	.1***	.1***	5.7***	2.3*	1*	1.9
<b>Chin</b>	34.9***	1.2***	.2***	14.1*	11.1*	13.3
<b>Rakhine</b>	.1***	0***	9.9***	3.8*	1.8*	3.3
<b>Shan</b>	17.5***	0***	0***	7.4***	3.8***	6.5
<b>Indian</b>	.2	0	.1	.1	0	.1
<b>Mixed ethnicity</b>	.2	0	.2	.2	0	.1
<b>Pa-O</b>	24.9***	0***	0***	8.6*	11*	9.2
<b>Palaung</b>	1.6***	0***	0***	0***	2.4***	.6
<b>Danu</b>	4.8***	0***	0***	1.3**	3.1**	1.8

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

### 3.2. Religion

There was no statistically significant difference between the religion of the LIFT and Control households, but there was between the three agro-ecological zones (Table 5). The majority of the households were Buddhists, accounting for over 81 percent of the respondents. Christians accounted for 19 percent of the sample, and there was also a very small number of Muslim households.

In the Dry and the Coastal/Delta zones, nearly all the respondents were Buddhists. However, in the Hilly zone, 54 percent held this religious belief ( $p < .001$ ). Nearly all the Christians were



in the Hilly zone, with households holding this faith accounting for 45 percent of the total households in this zone. In the Dry zone, Christians accounted for less than a half of a percent, and in the Coastal/Delta zone they accounted for 5 percent.

**Table 5: Religion of the respondents**

Proportion of:	Hilly	Dry	Coastal/ Delta	LIFT	Control	Total
<b>Buddhist</b>	54.3	99.6	94.9	81.2	81.4	81.3
<b>Christian</b>	45.4	.4	5	18.7	18.4	18.6
<b>Muslim</b>	.2	0	.1	.1	.1	.1

\*p-value < 0.05, \*\*p-value <0.005, \*\*\*p-value <0.001

### 3.3. Socioeconomic background of the villages

Although the Control villages were selected to be as similar as possible with LIFT villages, there was a significant statistical difference between the villages ( $p < .05$ ) in terms of the number of households per village (Table 6). In the LIFT villages the mean number was 198, while in the Control villages the number was 136. There was no statistically significant difference for the mean number of households per village for the three agro-ecological zones: the Hilly, Dry, and Coastal/Delta zones.

There was also a statistically significant difference between the number of males and females per village in the LIFT and Control villages (Table 6) ( $p < .05$ ). In the LIFT villages there were over 450 males and just under 500 females per village. The corresponding numbers in the Control villages were 311 and 340, respectively, for males and females. In the Hilly, Dry, and Coastal/Delta zones there was no statistically significant difference between the mean numbers of males, but there was for females. Villages in the Dry zone had the largest mean number of females, with close to 550 females, while the villages in the Coastal/Delta zone had the fewest females (377).

There was no statistically significant difference between the average daily wage for males and females in the LIFT and Control villages (Table 6). The average daily wage for males in both of these villages was 2,434 kyat, and the corresponding wage for females was lower, at 1,931. However, there was a statistically significant difference between the three agro-ecological zones and the average daily wage for both males and females. The highest average daily for both the males and females was in the Hilly zone, with a daily wage of 2,940 kyat for males and 2,475 for females. The Dry zone had the lowest daily wages for both sexes, with a figure of 1,930 kyat for males and 1,424 for females.

**Table 6: Socioeconomic background of the selected villages**

	Hilly	Dry	Coastal/ Delta	LIFT	Control	Total
<b>Mean number of households per village</b>	171	209	166	198*	136*	182
<b>Mean number of males per village</b>	425	469	364	456*	311*	420
<b>Mean number of females per village</b>	456*	544*	377*	499*	340*	459
<b>Average daily wage (kyat) for males</b>	2,940***	1,930***	2,432***	2,414	2,494	2,434
<b>Average daily wage (kyat) for females</b>	2,475***	1,424***	1,894***	1,930	1,934	1,931

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

### 3.4. Proximity to services

In terms of access to and proximity to services, the LIFT and Control villages were similar. There was no statistically significant difference between these villages and their access based on distance to a township, a sub-rural health centre, a primary school, a middle school, a high school, and a bank (Table 7 below).

The selected villages in the three agro-ecological zones were also fairly similar. However, there was a statistically significant difference between these villages in these zones and whether they had access to sub-rural health centres, banks, and cyclone shelters (as expected, all the recorded cyclone shelters were located in the Coastal/Delta zone).

Of the selected villages in the Dry zone, 94 percent had a sub-rural health centre within 3 miles. This compares to 83 percent of the villages in the Coastal/Delta zone, and 73 percent for the villages in the Hilly zone ( $p < .05$ ). Looking at those villages with such a health centre located inside their boundary, 37 percent of Hilly villages had such a centre, compared to 34 percent of villages in the Dry zone and 18 percent in the Coastal/Delta zone ( $p < .05$ ).

There was also a statistically significant difference between the selected villages in the three agro-ecological zones in terms of how close they were to a bank. Of the villages in the Coastal/Delta zone, 52 percent had a bank within 5 miles. This compares to 43 percent of the Hilly villages and 30 percent of the villages in the dry zone. Being in a short distance to a bank does not necessarily mean villagers would have easy access to the banking services. For example, in the Coastal/Delta zone many of the villagers would have to travel by boat, making their journey more problematic compared to what villagers in other zones would experience (Table 8 below).

**Table 7: Village access and proximity to services**

	Hilly	Dry	Coastal/ Delta	LIFT	Control	Total
<b>Average distance (miles) to a township</b>	15.8	14.8	13.2	14.9	13.8	14.6
<b>Have a sub-rural health centre in the village or within 3 miles (%)</b>	73.1*	94*	83.3*	82.7	86	83.5
<b>Have a sub-rural health centre in the village</b>	37.3*	34.3*	18.2*	32.7	22	30
<b>Have a primary school in the village or within 1 mile (%)</b>	100	97	98.5	98	100	98.5
<b>Have a middle school in the village or within 3 miles (%)</b>	76.1	83.6	80.3	77.3	88	80
<b>Have a high school in the village or within 5 miles (%)</b>	67.2	71.6	68.2	66.7	76	69
<b>Have a bank in the village or within 5 miles (%)</b>	43.3*	29.9*	51.5*	40	46	41.5
<b>Grain bank/seed bank in the village</b>	10.4	3	15.2	10.7	6	9.5
<b>Cyclone shelter in the village</b>	0***	0***	25.8***	8	10	8.5

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

**Table 8: Standard of road access to the village**

<b>Proportion of villages with:</b>	Hilly	Dry	Coastal/ Delta	LIFT	Control	Total
<b>No road reaching all the way to the village (e.g., access by water sea/river)</b>	1.5***	1.5***	74.2***	25.3	26	25.5
<b>Rough track reaching all the way to the village (bullock cart or walking only)</b>	9***	6***	0***	4.7	6	5
<b>Rough track suitable for trawlargee but not for cars/trucks</b>	20.9***	19.4***	12.1***	20.7	8	17.5
<b>Accessible by car/truck in dry weather only</b>	26.9***	32.8***	4.5***	20.7	24	21.5
<b>Accessible by car/truck in all weather</b>	41.8***	40.3***	9.1***	28.7	36	30.5

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

### 3.5. Road access

There was no statistically significant difference between the LIFT and Control villages in terms of the roads standards each possessed (Table 8). However, reflecting the geographical variation in the three agro-ecological zones, there were differences ( $p < .001$ ) in road access in the villages in the different zones. The significant difference was because many of the selected Coastal/Delta zone villages had no roads, and travel to and from them was by boat only.

### 3.6. Availability of electricity

There was no statistically significant difference between the LIFT and Control villages in terms of their access to electricity (Table 9). Overall, the selected villages had limited access to electricity, with only 12 percent having electricity supplied by the government. A further 17 percent received electricity from a system organised by the village, and an additional 14 percent that received power from a private/commercial generator.

Reflecting geographical and past investment patterns, there were important differences between the availability of electricity in the villages in the Hilly, Dry, and Coastal/Delta zones. Of the villages in the Hilly zone, 21 percent had government-powered electricity. This compared to 13 percent of Dry zone villages, and only 2 percent of Coastal/Delta villages ( $p < .005$ ). Villages in the Hilly zone accounted for the majority of villages that had electricity organised by themselves. This was the case for nearly 30 percent of the villages in this zone, compared to nearly 20 percent of the villages in the Dry zone and 5 percent of villages in the Coastal/Delta zone. However, it was the Coastal/Delta zone villages that were most likely to use private/commercial generators, with 32 percent of them having this service. This compared to 6 percent of Hilly zone villages and 5 percent of Dry zone villages.

**Table 9: Availability of electricity**

Proportion of villages with:	Hilly	Dry	Coastal/ Delta	LIFT	Control	Total
Electricity (Govt.)	20.9**	13.4**	1.5**	12.7	10	12
Electricity organised by village	26.9**	19.4**	4.5**	16.7	18	17
Electricity (Private/commercial generator)	6***	4.5***	31.8***	15.3	10	14

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

### 3.7. Civil society groups and activities

There was no statistically significant difference between LIFT and Control villages and whether they had self-help groups (Table 10). However, there was a statistically significant difference in whether the villages had an active NGO operating in the village over the last 12 months. Of the LIFT villages, 100 percent had an active NGO working in their community, while 64 percent of the Control villages had an active NGO working amongst them ( $p < .001$ ). Also reflecting the LIFT programme, there was a significant statistical difference between the LIFT and Control villages on whether there were any government or NGO-conducted training for members of the village in the past 12 months. Nearly 60 percent of the LIFT villages received a training, while only 30 percent of Control villages did ( $p < .005$ ).

**Table 10: Civil society groups and activities**

Proportion of villages with:	Hilly	Dry	Coastal/ Delta	LIFT	Control	Total
<b>Self-help groups</b>	28.4***	68.7***	60.6***	50.7	58	52.5
<b>Active NGOs in the past 24 months</b>	88.1	91	93.9	100***	64***	91
<b>Received a training by any government or NGO in the past 12 months</b>	41.8***	34.3***	72.7***	56**	30**	49.5

\*p-value < 0.05, \*\*p-value <0.005, \*\*\*p-value <0.001

### 3.8. Availability of credit within the village

In terms of sources of credit, there was one statistically significant difference between LIFT and Control villages (Table 11). The difference was the proportion of villages accessing micro-credit with a monthly interest rate of 2.5 percent or less; 64 percent of LIFT villages had access to this credit source, compared to 40 percent of the Control villages ( $p < .005$ ).

There were more statistically significant differences between the villages in the three agro-ecological zones and their sources of credit than there were between the LIFT and Control villages. Micro-credit providers with an interest of 2.5 percent or less were most common in villages in the Coastal/Delta zone, with 82 percent of them in this zone having such a source of credit. In both the Hilly and Dry zone villages, under half of the villages had such schemes ( $p < .001$ ). Based on a related question in the Village profile questionnaire answered by key informants, the proportion of villages that had access to low-interest micro-credit was 88 percent in the Coastal/Delta zone villages and 66 percent and 60 percent, respectively, in the Hilly and Dry zone villages ( $p < .005$ ).

There was a significant difference between the villages in the different zones and whether they had access to money lenders. In the Coastal/Delta zone, nearly 60 percent of the villages had such people operating in their villages. In Dry zone villages, it was under 40 percent. In Hilly zone villages, 22 percent had money lenders ( $p < .001$ ).

**Table 11: Source of credit in this village**

Proportion of villages using:	Hilly	Dry	Coastal/ Delta	LIFT	Control	Total
<b>Micro-credit provider (low interest, of 2.5% per month or less)</b>	47.8***	44.8***	81.8***	64**	40**	58
<b>Village Savings and Loans Association</b>	7.5	11.9	7.6	8.7	10	9
<b>Family/friend</b>	28.4*	35.8*	54.5*	36	50	39.5

<b>Money lender</b>	22.4***	37.5***	56.1***	40	34	38.5
<b>Shopkeeper</b>	9*	0*	3*	4	4	4
<b>Private company</b>	0	1.5	6.1	2	4	2.5
<b>Farmers' Association/ Cooperative</b>	6	11.9	3	8	4	7
<b>Presale of product to trader</b>	34.3***	4.5***	24.2***	21.3	20	21
<b>Government</b>	38.8	55.2	54.5	50	48	49.5
<b>Saving and loan associations</b>	35.8	31.3	31.8	32.7	34	33

\*p-value < 0.05, \*\*p-value <0.005, \*\*\*p-value <0.001

### 3.9. Water sources in the village

There was no statistically significant difference between the LIFT and Control villages and their types of water sources (Table 12 below). The main source of water was ponds, which was the case for 45 percent of the villages. This was followed by creeks (31 percent), tube well with a motor pump (30 percent), brick wells (26 percent), and tube wells with a hand pump (21 percent).

However, reflecting geographic and climatic variation, there were differences in the villages' water sources in the three agro-ecological zones. For example, ponds, which were the most common source of water for all the villages in the study, did not exist in the Hilly zone, while this was a source of water for nearly 90 percent of villages in the Coastal/Delta zone ( $p < .001$ ). In the Hilly zone, the most common source of water for the villages was natural springs, providing water to 69 percent of the villages, compared to 5 percent of the Dry zone and 2 percent of the Coastal/Delta zone villages ( $p < .001$ ). In the Dry zone, the most common source of water was tube wells with motor pumps; 60 percent of the villages in this zone had this as a water source, compared to 9 percent in the Hilly zone and 21 percent in the Coastal/Delta zone ( $p < .001$ ).

**Table 12: Water sources in the village**

	Hilly	Dry	Coastal/ Delta	LIFT	Control	Total
<b>River</b>	4.5	10.4	9.1	7.3	10	8
<b>Creek</b>	20.9***	17.9***	53***	28.7	36	30.5
<b>Pond</b>	0***	47.8***	87.9***	46	42	45
<b>Brick well</b>	22.4***	41.8***	12.1***	25.3	26	25.5
<b>Hand-dug well</b>	3	7.5	4.5	5.3	4	5
<b>Tube well (motor pump)</b>	9***	59.7***	21.2***	32	24	30
<b>Tube well (hand pump)</b>	19.4***	38.8***	3***	27.7	14	20.5



<b>Spring water (natural)</b>	68.7***	4.5***	1.5***	27.3	18	25
<b>Spring water (stored)</b>	14.9**	3**	1.5**	6	8	6.5
<b>Public water supply system</b>	6	4.5	0	4	2	3.5
<b>Dam</b>	1.5	6	0	2	4	2.5
<b>Rain water storage tank</b>	17.9***	0***	27.3***	14.7	16	15
<b>Purchased water</b>	3	7.5	1.5	4	4	4

\*p-value < 0.05, \*\*p-value <0.005, \*\*\*p-value <0.001

Note: Villages had more than one water source, thus the numbers in this table do not add up to 100 percent.

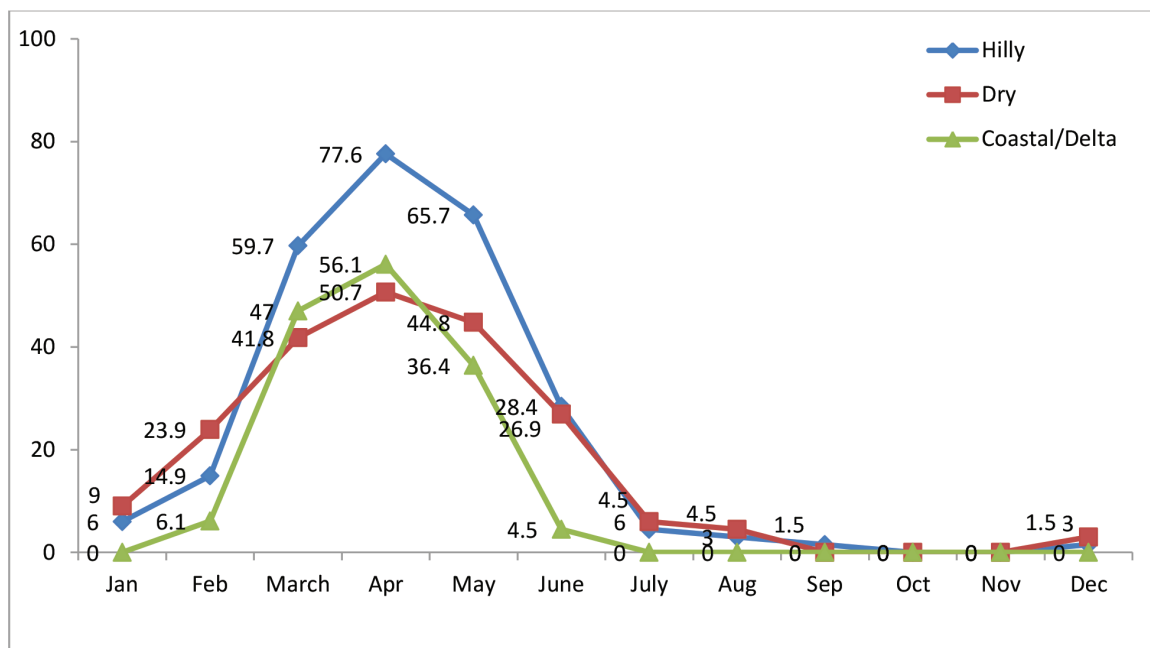
There was no significant difference between the LIFT and Control villages when during the year they suffered water shortages (Table 13). Nevertheless, reflecting climatic differences throughout Myanmar, there were statistical differences between villages in the Hilly, Dry, and Coastal/Delta zones and when they experienced water shortages (Table 13 and Figure 1 below). There was a seasonal water shortage in the Hilly and Dry zone villages from February to June, when over 10 percent of villages faced shortages. In April, the height of the hot season, close to 80 percent of villages in the Hilly zone faced a water shortage. Based on the data, the seasonal water shortage in the Coastal/Delta zone was shorter, starting in March and ending in May. Overall, villages in this zone had the fewest problems with water shortages; not one village indicated a problem accessing water in 7 months of the year.

**Table 13: Months during which water is scarce**

<b>Proportion of villages in which water is scarce in:</b>	Hilly	Dry	Coastal/ Delta	LIFT	Control	Total
<b>January</b>	6	9	0	6	2	5
<b>February</b>	14.9*	23.9*	6.1*	15.3	14	15
<b>March</b>	59.7	41.8	47	49.3	50	49.5
<b>April</b>	77.6**	50.7**	56.1**	62	60	61.5
<b>May</b>	65.7**	44.8**	36.4**	47.3	54	49
<b>June</b>	28.4**	26.9**	4.5**	18.7	24	20
<b>July</b>	4.5	6	0	4	2	3.5
<b>August</b>	3	4.5	0	3.3	0	2.5
<b>September</b>	1.5	0	0	0	2	.5
<b>October</b>	0	0	0	0	0	0
<b>November</b>	0	0	0	0	0	0
<b>December</b>	1.5	3	0	2	0	1.5

\*p-value < 0.05, \*\*p-value <0.005, \*\*\*p-value <0.001

**Figure 1: Proportion of Hilly, Dry, and Coastal/Delta zone villages facing water shortages by month**



## 4. Household findings

### 4.1. Demography of the households

#### 4.1.1. Household size

The mean number of household members was around 4.5 for both LIFT and Control households and for both rounds of data collection (Table 14 below). For the Control households, the mean number of household members declined from Round 1 to Round 2, declining from 4.9 to 4.5 members ( $p < .005$ ). The statistically significant test indicates that the difference in family size is significant even after taking into account sampling error, so this is a possible indication of bias in the sample of Control households between both rounds. Overall, both in the LIFT and Control households, there were slightly more females than males. There were no statistically significant changes in the proportion of males or females from the first to the second surveys.

**Table 14: Mean number of household members (15,534 individuals; 7,529 males and 8,005 females)**

	Households	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages
<b>Mean number of household members</b>	4.7	4.6	-.1	4.9	4.5	-.4**
<b>Proportion of males</b>	49	47.6	-1.4	49.5	47.8	-1.7
<b>Proportion of females</b>	51	52.4	1.4	50.5	52.2	1.7
<b>2013 data: Based on all 3,200 households interviewed in that year</b>						
	Hilly	Dry	Coastal/Delta	LIFT	Control	Total
<b>Mean number of household members</b>	5.1***	4.8***	4.2***	4.7	4.6	4.7
<b>Proportion of males</b>	47.1	46.1	49.4	47.4	47.7	47.5
<b>Proportion of females</b>	52.9	53.9	50.6	52.6	52.3	52.5

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

#### 4.1.2. Age

The mean age of the households was older in Round 2 than in Round 1 (Table 15). This was the case for both LIFT and Control households, with the mean age increasing by 1.2 years in LIFT households ( $p < .005$ ) and 1.6 years in the Control households ( $p < .05$ ). The difference resulted from sampling families with older males than those interviewed in the first round. Males were 2.7 years older in LIFT households ( $p < .001$ ) and 1.9 years older in the Control households ( $p < .05$ ).

**Table 15: Age of the household members (15,534 individuals; 7,529 males and 8,005 females)**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages
<b>Mean age</b>	26.7	27.9	1.2**	28.7	30.3	1.6*
<b>Mean age of males</b>	26.1	28.8	2.7***	28.7	30.6	1.9*
<b>Mean age of females</b>	27.6	27.1	-.5	28.8	30	1.2

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

#### 4.1.3. Education

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.

To date, based on the quantitative data, the LIFT programme has had no measureable positive impact on full-time school attendance (Table 16). For the age groups 5–12, 13–15, and 16–17 there was only one statistically significant increase in full-time school attendance from the first to the second survey, and that was for boys aged 13–15 in Control households. From the first to the second survey, their school attendance increased from 59 to 78 percent ( $p < .05$ ). With this large increase, DiD between LIFT and Control households for full-time education of boys of this age was significant ( $p < .05$ ).

**Table 16: Proportion of children in full-time education**

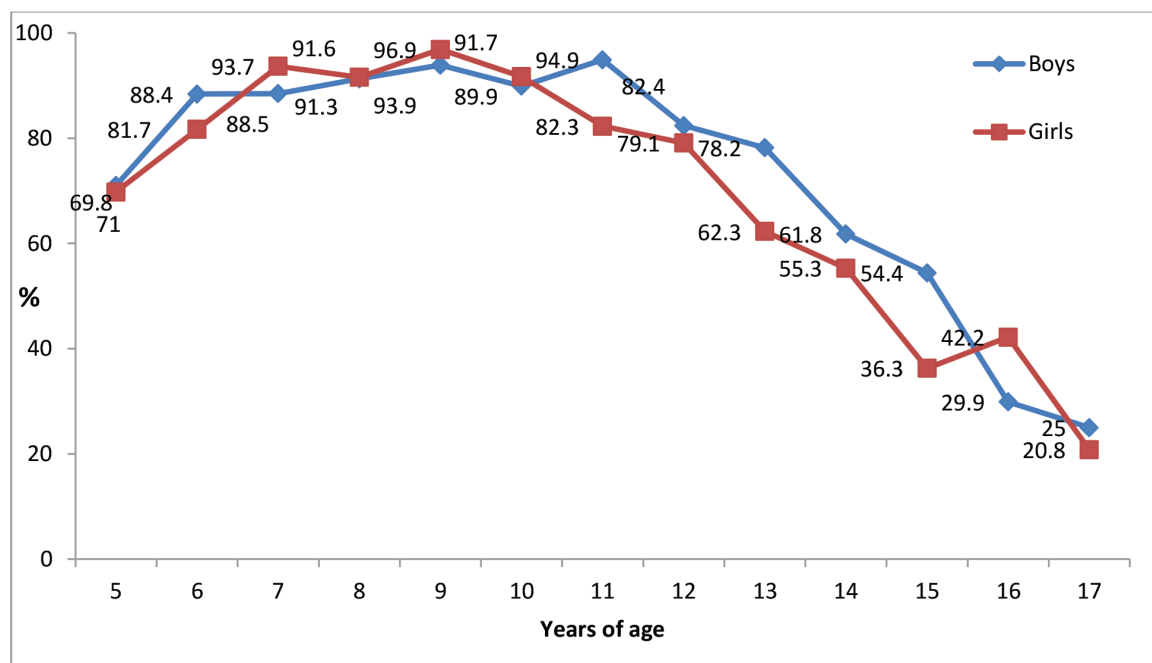
	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differ- ences
<b>Children aged 5–12 in full-time education</b> <b>Boys n=933 for LIFT and 405 for Control villages</b> <b>Girls n=791 for LIFT and 374 for Control villages</b>							
<b>Boys</b>	84.1	87	2.9	84.6	90.1	5.5	-2.6
<b>Girls</b>	85.7	86	.3	88.3	87.6	-.7	1
<b>Children aged 13–15 in full-time education</b> <b>Boys n=328 for LIFT and 190 for Control villages</b> <b>Girls n=290 for LIFT and 157 for Control villages</b>							
<b>Boys</b>	58.1	58.5	.4	59.1	77.5	18.4*	-18*
<b>Girls</b>	54.5	48.1	-6.4	53.8	57.1	3.3	-9.7
<b>Children aged 16–17 in full-time education</b> <b>Boys n=227 for LIFT and 122 for Control villages</b> <b>Girls n=178 for LIFT and 97 for Control villages</b>							
<b>Boys</b>	27.4	29.3	1.9	23.4	24.4	1	.9
<b>Girls</b>	25.6	30.7	5.1	18.4	31.3	12.9	-7.8

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

Given that there was limited change in full-time school enrolments between the LIFT and Control villages, Figure 2 (below) details the enrolment rates for boys and girls who were part of the second survey. The enrolment rates were similar for both boys and girls until the age of 11. From that age until 15, a greater proportion of boys than girls were attending school. At no stage were 100 percent of the children of that age studying; the age group with the highest proportion studying was 11-year-olds for boys, with 95 percent of them studying, and 9-year-olds for girls, with 97 percent of them attending school. For the households interviewed,

school attendance drops after the age of 11 until only a bit over 20 percent of children were in full-time education by the age of 17. In Myanmar, children finish primary school at the age of 11 or 12.

**Figure 2: Full-time school enrolment by sex and age for Round 2**



Unlike the quantitative data, information from FGDs suggested that the LIFT implementing partner interventions had improved the villagers' economic well-being and, as a result, they were keeping their children at school.

“Because of breeding goats I earn more and now I can keep my children in school” (Dry zone).

“Households now have more money and they can send their children to school” (Hilly zone).

However, the FGDs also illustrated that the opportunity for children to attend school varied between location and economic class. For example:

“The rich can go to school. The poor cannot, as they need to help their parents farming” (Hilly zone).

“The poor children who don't go to school work as waiters in cities [and earn a] wage. The poor children who don't go to either school or migrate to the cities, go fishing” (Coastal/Delta zone).

#### 4.1.4. Disability

A small percentage of household members had disabilities restricting their ability to work or study. In the LIFT households, this was the case for 1.5 percent of both male and female household members, while in the Control households the proportion was slightly over

2 percent for both sexes. From the first to the second survey, the proportion of Control household members with such a disability showed a statistically significant increase for males ( $p < .05$ ). This increase most likely reflects the different sample from Round 1 to Round 2 (it was the same village, but not the same households) rather than an increase in accidents disabling men between the 2 years from the 2011 to 2013 surveys.

**Table 17: Proportion of household members with disabilities that prevent the family member from working or studying (n=7,529 males and 8,005 females)**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages
<b>Males</b>	1.4	1.5	.1	1	2.1	1.1*
<b>Females</b>	1.3	1.5	.2	1.5	2.1	.6

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

Although several LIFT implementing partners' interventions targeted the disabled, during several FGDs, participants mentioned that providing financial support and creating jobs for the disabled should be included in future projects (Hilly and Coastal/Delta zones). While the disabled had the same right as any other person to be involved in the LIFT projects, in several FGDs, participants stated the following:

“The projects actually should focus on and give priority to the poor, widows, and the disabled” (Hilly zone).

#### 4.1.5. Dependency ratios

The dependency ratio<sup>7</sup> among both LIFT and Control households fell from Round 1 to 2 (Table 18). This is probably explained by the older households in Round 2. The ratio in LIFT households was 56.8 in Round 1 and 56.1 in Round 2. The dependency ratio in Control households was lower than the LIFT households, with ratios of 52.1 and 50 in Rounds 1 and 2, respectively.

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

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages
<b>Dependency ratio</b>	56.8	56.1	-.7	52.1	50	-2.1

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

7 Dependency ratio = (number of children aged 0–14 + number of adults aged over 64)/adults aged 15–64 \*100.



## 4.2. Involvement with LIFT partners

In the 2011 baseline survey, no questions were asked about household involvement with LIFT partners, as at that time the LIFT programme had not started. In the 2013 household survey, these questions were asked only to LIFT households. Thus, in the following two tables no comparisons can be made between LIFT and Control households, or over time.

However, after the third and final survey, comparisons will be made between LIFT households in the second and third surveys. For this reason, the data presented below are for all LIFT households interviewed in the second round, whether they were included in the first round or not, allowing comparisons between the three agro-ecological zones.

The proportion of LIFT households aware of LIFT activities was 90 percent (Table 19). Households in the Dry zone were the most aware, with 98 percent of households indicating they knew about LIFT activities. This compares to 93 percent in the Coastal/Delta zone, and under 80 percent among households in the Hilly zone ( $p < .001$ ).

Savings and credit groups and the provision of credit was the activity in which the greatest proportion of households participated. A household member from nearly one in five households participated in this type of activity. There was a statistically significant difference between households from the different zones, with close to a quarter of Hilly zone households and 20 percent of Coastal/Delta households benefiting, compared to only 15 percent of Dry households ( $p < .001$ ).

The activity with the next-highest participation rate was cash for work, with 14 percent of LIFT households having one or more members involved. This involvement was more common in the Dry zone, with nearly a third of all households from this zone participating, compared to under 5 percent of households in both the Hilly and Coastal/Delta zones ( $p < .001$ ).

**Table 19: Aware of LIFT activities and proportion participating in trainings and other activities**

	Hilly	Dry	Coastal/ Delta	LIFT	Control	Total
<b>Aware (n=2,400)</b>	79.4***	97.6***	92.8***	89.9	NA	89.9
<b>Proportion of LIFT households that participated in the following trainings: (n=2,158)</b>						
<b>Training related to crops and crop production</b>	11.7***	5.1***	19.5***	12	NA	12
<b>Training in livestock</b>	7.9*	4*	5.4*	5.6	NA	5.6
<b>Training in fisheries</b>	.3	0	.3	.2	NA	.2
<b>Training in other vocational skills</b>	1.6***	.3***	4.3***	2	NA	2
<b>Training in skills for small business management</b>	13.2***	5.4***	11.2***	9.7	NA	9.7
<b>Training in natural resource management</b>	5.5***	1.4***	4.2***	3.6	NA	3.6

<b>Training in health, hygiene, or nutrition</b>	1.3	.9	1.3	1.2	NA	1.2
<b>Demonstration plots or field trials</b>	6.8**	2.9**	5.1**	4.8	NA	4.8
<b>Farmer field schools, farmer extension groups, farmer exchange visits</b>	4.9***	.6***	3.9***	3	NA	3
<b>Provision of inputs for agriculture</b>	6.9*	4*	7.4*	6	NA	6
<b>Provision of equipment for crop production, storage, or processing including through revolving funds</b>	2.4*	.9*	2.6*	1.9	NA	1.9
<b>Provision of animals for tillage</b>	.9	.3	1.1	.7	NA	.7
<b>Inputs/equipment for fisheries</b>	0	0	.4	.1	NA	.1
<b>Inputs/equipment to start a business—including through revolving funds</b>	.5	.8	.4	.6	NA	.6
<b>Provision of livestock—including through revolving funds</b>	1.4***	.9***	4.3***	2.2	NA	2.2
<b>Cash grants or vouchers to provide inputs for agriculture, livestock, or other businesses</b>	3.5	3.7	3.9	3.7	NA	3.7
<b>Savings and credit groups and provision of credit</b>	24.1***	14.5***	20.2***	19.3	NA	19.3
<b>Formation or strengthening of groups within the village</b>	5.4***	12.4***	14.2***	10.9	NA	10.9
<b>Cash for work activities (e.g., to construct or renovate paths, roads, bridges, piers, ponds, etc.)</b>	1.3***	31.9***	4.7***	13.5	NA	13.5
<b>Support for crop or product marketing</b>	0*	.9*	1.2*	.7	NA	.7
<b>Support for natural resource management (e.g., community forestry, soil conservation, mangrove replanting, etc., through seedlings or other materials)</b>	.3**	.9**	2.6**	1.3	NA	1.3
<b>Support for disaster risk reduction or climate change preparedness</b>	.2*	1.4*	.5*	.7	NA	.7

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

FGDs also provided information regarding participants' involvement with LIFT partners. Almost without exception, participants were fully aware of the projects implemented by LIFT implementing partners, and were able to give considerable details about the nature of the projects, the names of the implementing partners, and also list the positive (and in some cases, negative) contributions that they attributed to the presence of LIFT in their respective communities.

Perhaps the most outstanding change mentioned by participants was the improvement in the unity of village members:

“The village has become more united. Before that, the head of the villager made all the decisions. Since the last one or two years, people have worked together for social affairs and they have come to understand teamwork. Nowadays, villages can support their monastery and their teachers at the school by collecting money from the villagers” (Hilly zone).

In another village, participants said the following:

“... there was no teamwork before. Now the villagers work together. The villagers listen to the leaders and then get involved in activities together such as digging the canals and clearing the road” (Hilly zone).

One of the reasons given for the increased unity was the following:

“... the villagers are becoming united as they gather so often to attend meetings. Everyone gets involved in activities such as repairing of roads, community social occasions of joy and grief, etc.” (Dry zone).

In addition to increased unity, participants also mentioned improvements in education and knowledge-sharing as a result of involvement with the LIFT projects:

“The village has become more united [and] at the meetings, views and opinions are exchanged and mutual help is given. As a result, people are no longer shy. Knowledge has become broader. We villagers are now in the habit of consulting with each other” (Hilly zone).

### 4.3. Source of household income

Between the first and the second surveys, there were a number of important changes in the households' source of income. There were seven changes in sources of household income in which DiD over the two surveys and between LIFT and Control households were statistically significant (Table 20 below). In four of these cases, the changes did not result from an increase among LIFT households, rather from a greater decline among either LIFT or Control households. This was the case for the sale of tubers and root crops, the sale of toddy products and money earned from casual labour in fishing and other types of casual labour.

The three cases in which DiD between LIFT and Control households resulted from an increased proportion of households undertaking the activity were from the sale of fresh wild catch of fish, prawns, crabs, and shellfish; the sale of livestock or livestock products; and cash for work.

The proportion of LIFT households selling fresh seafood increased from 12 to 22 percent, and among Control households it increased from 6 to 17 percent. Both changes were significant, but the change was greater among LIFT households, making DiD also significant ( $p < .05$ ).

The proportion of households selling livestock or livestock products increased in both LIFT and Control households. In 2011, 12 percent of both LIFT and Control households were selling these products, but by 2013, 22 and 16 percent of the LIFT and Control households, respectively, were earning money through this activity. The greater change in the LIFT households made the DiD between the two households significant ( $p < .05$ ).

Cash for work is a LIFT intervention aiming to contribute to food security during the year, when work opportunities for the landless are rare, and to help develop villages (and sometimes

private infrastructure). Typically, villagers were paid daily wages for pond renovation, but other work included construction and/or the maintenance of paths, roads, embankments, the construction of terraces on private land for control of soil erosion, and forestry planting. As noted above, the second most common activity in which LIFT households participated was cash for work; it is therefore consistent that cash for work should have increased as a source of income in LIFT villages.

No households indicated this as a source of income in Round 1, but by Round 2, over 2 percent did so in LIFT households, while 0.2 percent did this in Control households. The significance level of the DiD was  $p < .005$ .

FGD participants commented on the benefits of the cash for work schemes:

“The cash for work scheme has saved people by ending the aimless job search in neighbouring areas in the low season. Jobs are just in the village and labourers don’t need to go anywhere” (Coastal/Delta zone).

“Almost everyone irrespective of age, sex and wealth can earn more due to cash for work scheme. Further, owing to planting wind resisting trees, there will be a long term benefit since these trees will prevent storms from devastating our community” (Coastal/Delta zone).

In the Coastal/Delta, the construction of an embankment as a cash for work project was positively viewed by villagers, as it had the short-term benefit of providing employment to casual labourers as well as the long-term benefit of preventing salinization of paddy fields:

“... when the new embankment was constructed by LIFT, farmers got relief from salt water entering their farmland”.

**Table 20: Source of household income (n=3,328)**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Differ- ence in differ- ences
<b>Sale of rice</b>	1.4	.5	-.9*	2.4	.3	-2.1**	1.2
<b>Sale of paddy</b>	16.8	23.3	6.5***	11.6	16.8	5.2*	1.3
<b>Sale of other cereals</b>	13.2	15.3	2.1	16.8	18.8	2	.1
<b>Sale of beans, pulses, and peanuts</b>	17.1	17	-.1	23.1	17.7	-5.4*	5.3
<b>Sale of tubers and root crops</b>	2.8	1.7	-1.1	4.7	7.5	2.8*	-3.9**
<b>Cash for work</b>	0	2.4	2.4***	0	.2	.2	2.2**
<b>Sale of vegetables (fresh and dried)</b>	10.5	11.9	1.4	9.2	9	-.2	1.6
<b>Sale of fruits (fresh and dried)</b>	1.6	1.9	.3	.3	1.2	.9	-.6

<b>Sale of beverage crops (tea or coffee)</b>	0	.2	.2	6.4	6.4	0	.2
<b>Sale of toddy products (including sap, alcoholic beverage and jaggery)</b>	1.1	1.1	0	3.6	.2	-3.4***	3.4***
<b>Sale of other crops/ agricultural products (rubber, reed broom, flowers, perennial trees, etc.)</b>	3.5	4.2	.7	9.2	8.2	-1	1.7
<b>Sale of fresh wild catch of fish, prawns, crabs, shellfish</b>	8.4	24.4	16***	6.3	17	10.7***	5.3*
<b>Sale of fresh farmed fish, prawns, crabs, shellfish</b>	.4	.9	.5	0	.2	.2	.3
<b>Sale of processed fish, prawns, crabs, shellfish (dried, salted, paste)</b>	2.1	1.4	-.7	2.3	2.1	-.2	-.5
<b>Sale of other wild food products (fruits and animals)—fresh or processed</b>	.8	.2	-.6*	.2	0	-.2	-.4
<b>Sale of firewood, timber/ poles, bamboo, charcoal, rattan, palm leaves, thatch, etc.</b>	1.6	2.7	1.1	1	2.4	1.4	-.3
<b>Sale of livestock or livestock products (whole animals, meat, milk, eggs, etc.)</b>	12.2	22.2	10***	11.6	16.1	4.5*	5.5*
<b>Small business— small-scale production (not agricultural products)</b>	6.8	4.5	-2.3*	6.9	6.1	-.8	-1.5
<b>Small business— trading, buying and selling</b>	7.8	14.4	6.6***	6.1	11.1	5**	1.6
<b>Small business— services (including transport services, repair, mechanical, post-harvest processing, etc.)</b>	4.5	7.3	2.8*	5.9	7.8	1.9	.9
<b>Casual labour— agriculture</b>	42.8	41.4	-1.4	39.4	39.9	.5	-1.9
<b>Casual labour—fishery</b>	21.6	3.4	-18.2***	16.7	3.6	-13.1***	-5.1*
<b>Casual labour—forestry or forest products</b>	5.9	2.4	-3.5***	5.4	4.2	-1.2	-2.3
<b>Casual labour— Other</b>	8.4	7.2	-1.2	12.7	6.1	-6.6***	5.4*
<b>Cash for work</b>	0	2.4	2.4***	0	.2	.2	2.2**
<b>Regular full-time employment</b>	3.6	3.4	-.2	4.2	4.2	0	-.2

<b>Regular part-time employment</b>	1.5	2.1	.6	1	1.9	.9	-3
<b>Interest from lending</b>	.3	.1	-.2	0	0	0	-.2
<b>Remittances</b>	5.4	9.4	4***	7.5	9.5	2	2
<b>Pensions</b>	.3	.9	.6	.5	.3	-.2	.8
<b>Government/ NGO assistance (cash vouchers)</b>	1.3	.3	-1	.2	0	-.2	-.8
<b>Resale of food aid</b>	.1	0	-.1	.3	0	-.3	.2
<b>Gifts of money</b>	1.6	1.4	-.2	2.6	.9	-1.7*	1.5

2013 data: Based on all 3,200 households interviewed in that year

By zone and by LIFT and Control households						
	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total
<b>Sale of rice</b>	1.7***	.8***	.1***	.9	.8	.9
<b>Sale of paddy</b>	10.4***	7.2***	34.7***	18.5**	12.7**	17.3
<b>Sale of other cereals (maize, wheat, barley, oats, sorghum, etc.)</b>	36.7***	25.6***	.3***	20.9	21.3	20.9
<b>Sale of beans, pulses, and peanuts</b>	13.5***	46.3***	1.6***	20.1	22.5	20.6
<b>Sale of tubers and root crops (cassava, potatoes, taro, yam, etc.)</b>	14.6***	1.6***	.1***	5.9*	3.7*	5.5
<b>Sale of vegetables (fresh and dried)</b>	11.9***	12.2***	4.5***	9.7	9.3	9.6
<b>Sale of fruits (fresh and dried)</b>	2*	1.1*	2.7*	1.9	2	1.9
<b>Sale of beverage crops (tea or coffee)</b>	7.2***	.1***	0***	2.3	2.8	2.4
<b>Sale of toddy products (including sap, alcoholic beverage, and jaggery)</b>	.1***	2.8***	0***	1	.8	1
<b>Sale of other crops/agricultural products (rubber, reed broom, flowers, perennial trees, etc.)</b>	6.4*	6.9*	4.5*	5.8	6.7	5.9
<b>Sale of fresh wild catch of fish, prawns, crabs, shellfish</b>	1.4***	.5***	43.8***	17.6***	5***	15.1
<b>Sale of fresh farmed fish, prawns, crabs, shellfish</b>	0***	0***	1.3***	.5	0	.4
<b>Sale of processed fish, prawns, crabs, shellfish (dried, salted, paste)</b>	0***	.2***	2.8***	1	.9	1
<b>Sale of other wild food products (fruits and animals)—fresh or processed</b>	.5	.3	0	.3	.2	.3



<b>Sale of firewood, timber/poles, bamboo, charcoal, rattan, palm leaves, thatch, etc.</b>	2.2*	1.4*	3.4*	2.6*	1.2*	2.3
<b>Sale of livestock or livestock products (whole animals, meat, milk, eggs, etc.)</b>	12.7***	13.6***	24.8***	17.5	15.1	17
<b>Small business—small-scale production (not agricultural products)</b>	3.5*	6.1*	4.1*	4*	6.5*	4.5
<b>Small business—trading, buying, and selling</b>	8.1***	13.2***	18.5***	12.7	15.2	13.2
<b>Small business—services (including transport services, repair, mechanical, post-harvest processing, etc.)</b>	6.3*	6.6*	8.9*	7.6	6.1	7.3
<b>Casual labour—agriculture</b>	32.7***	41.8***	46.3***	39.8	41.9	40.3
<b>Casual labour—fishery</b>	.2***	.4***	5.9***	2.4*	1.1*	2.1
<b>Casual labour—forestry or forest products</b>	6***	2.3***	2.1***	3.6	2.8	3.5
<b>Casual labour—Other</b>	8.1*	8.8*	5.3*	7.6	6.7	7.4
<b>Cash for work</b>	.2***	1.7***	2.4***	1.3	1.9	1.4
<b>Regular full-time employment</b>	5.4**	5.2**	2.4**	4.4	4.2	4.3
<b>Regular part-time employment</b>	1.8	1.6	2.9	1.9	2.8	2.1
<b>Interest from lending</b>	0	.1	.3	.1	.2	.1
<b>Remittances</b>	10.6***	13.8***	8.1***	9.4***	16.9***	10.9
<b>Pensions</b>	2.1**	1.3**	.3**	1.1	1.7	1.2
<b>Government/NGO assistance (cash vouchers)</b>	.1*	.9*	1.1*	.9	.2	.7
<b>Gifts of money</b>	1.6	.8	.8	.8*	2*	1.1

**By average household income and landownership**

	<50,000	50,000–100,000	>100,000	Own land	No land	Total
<b>Sale of rice</b>	.2***	.7***	2.1***	1.5***	0***	.9
<b>Sale of paddy</b>	11.2***	16.2***	27.9***	26.4***	4.9***	17.3
<b>Sale of other cereals (maize, wheat, barley, oats, sorghum, etc.)</b>	17.1***	19.9***	28***	34.2***	2.7***	20.9
<b>Sale of beans, pulses, and peanuts</b>	18.7	21.1	22.3	34.5***	1.4***	20.6
<b>Sale of tubers and root crops (cassava, potatoes, taro, yam, etc.)</b>	6.6	4.4	5.5	8.6***	1.1***	5.5
<b>Sale of vegetables (fresh and dried)</b>	11.3*	8.9*	8.3*	13.7***	3.9***	9.6
<b>Sale of fruits (fresh and dried)</b>	1.1*	2.1*	2.8*	2.5**	1**	1.9

<b>Sale of beverage crops (tea or coffee)</b>	3.4*	1.7*	2.3*	4.2***	0***	2.4
<b>Sale of toddy products (including sap, alcoholic beverage, and jaggery)</b>	1.1	1	.6	1.1	.7	1
<b>Sale of other crops/agricultural products (rubber, reed broom, flowers, perennial trees, etc.)</b>	4.8*	6*	7.5*	8.4***	2.5***	5.9
<b>Sale of fresh wild catch of fish, prawns, crabs, shellfish</b>	12.8***	20.6***	9.4***	5.2***	28.6***	15.1
<b>Sale of fresh-farmed fish, prawns, crabs, shellfish</b>	.3	.6	.4	.3	.7	.4
<b>Sale of processed fish, prawns, crabs, shellfish (dried, salted, paste)</b>	.5	1	1.6	.4***	1.9***	1
<b>Sale of other wild food products (fruits and animals)—fresh or processed</b>	.4	.2	.3	.3	.2	.3
<b>Sale of firewood, timber/poles, bamboo, charcoal, rattan, palm leaves, thatch, etc.</b>	2.8	2.4	1.6	1.3***	3.8***	2.3
<b>Sale of livestock or livestock products (whole animals, meat, milk, eggs, etc.)</b>	17.6	16.8	16.5	16.5	17.6	17
<b>Small business—small-scale production (not agricultural products)</b>	3.6*	5.7*	4*	3.7*	5.7*	4.5
<b>Small business—trading, buying, and selling</b>	9.5***	12.3***	19.9***	10.3***	17.3***	13.2
<b>Small business—services (including transport services, repair, mechanical, post-harvest processing, etc.)</b>	5.5**	7.3**	9.6**	5.1***	10.2***	7.3
<b>Casual labour—agriculture</b>	49.3***	45***	19.9***	26.3***	59.4***	40.3
<b>Casual labour—fishery</b>	2.3*	2.8*	.8*	.4***	4.4***	2.1
<b>Casual labour—forestry or forest products</b>	5.7***	2.4***	2***	2.5**	4.7**	3.5
<b>Casual labour—Other</b>	7.9	7.5	6.6	4.8***	11***	7.4
<b>Cash for work</b>	1.3	1.7	1	1*	1.9*	1.4
<b>Regular full-time employment</b>	.6***	3***	11.8***	3.9	5	4.3
<b>Regular part-time employment</b>	1.8	2.4	2	1.1***	3.4***	2.1
<b>Interest from lending</b>	.1	.1	.3	.1	.1	.1
<b>Remittances</b>	11	10.7	11	10	12.1	10.9
<b>Pensions</b>	1*	.9*	2.1*	1.3	1.1	1.2
<b>Government/NGO assistance (cash vouchers)</b>	.4	.8	1	.9	.5	.7
<b>Gifts of money</b>	1.3	.9	1	.7*	1.6*	1.1

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

The above table also shows a range of significant differences in sources of income between the three agro-ecological zones, male- and female-headed households, average income, and landownership in 2013. For example, the sale of paddy was the most important in the Coastal/Delta zone, with over a third of all households in this zone involved in this activity, compared to around 10 percent of households in the other two zones ( $p < .001$ ). While the sale of other cereals was the most important in the Hilly zone (37 percent), followed by the Dry zone (26 percent), while less than half of a percent of Coastal/Delta zone households did this ( $p < .001$ ). Unsurprisingly, the sale of fresh wild catch of fish, prawns, crabs, and shellfish was the most important in the Coastal/Delta zone, with 44 percent of households undertaking this activity, compared to around 1 percent in the other two zones ( $p < .001$ ).

There were two highly significant differences between male- and female-headed households in terms of sources of household incomes. The male-headed households were more likely to be involved in the sale of fresh wild catch of fish, prawns, crabs, and shellfish, with 18 percent of these households undertaking this activity. However, only 5 percent of female-headed households did this ( $p < .001$ ). The other important difference was in receiving remittances, with 9 percent of male-headed households receiving money from household members who had migrated. The percentage of female-headed households gaining money from remittances was 17 ( $p < .001$ ).

The comparisons between income groups, which were significant at the  $p < .001$  level, showed that a greater proportion of households with an average monthly income of over 100,000 kyat were involved in the sale of agriculture produce compared to those earning less than this. For example, 28 percent of households earning more than 100,000 kyat sold paddy, compared to 11 percent of those earning less than 50,000 kyat and 16 percent of those earning 50,000–100,000 kyat. The richest group was also more likely to be involved in small businesses and in full-time regular employment, compared to the two other groups. Those households earning 50,000–100,000 kyat were the most likely to sell fresh wild catch of fish and other seafood, followed by the poorest group. The households earning less than 50,000 kyat were the most likely group to be involved in casual labour.

There were also significant statistical differences ( $p < .001$ ) between those households owning land and those that did not, in terms of their sources of income. Households with land were far more likely to produce a range of agriculture produce, while those without land were more likely to be involved in selling fish, involved in small businesses, and undertaking casual labour.

#### **4.3.1. Top five main sources of household income**

The respondent was asked what his/her household's main form of income was in the previous 12 months. In Round 1, the five most important forms of income in the order of importance (based on LIFT households) were casual labour in agriculture; the sale of paddy; the sale of beans, pulses, and peanuts; the sale of other cereals (maize, wheat, barley, oats, sorghum, etc.); and the sale of fresh wild catch of fish, prawns, crabs, and shellfish (Table 21 below).

By the second round, the order of importance had changed, with the sale of paddy being the most important activity for LIFT households. The proportion of households undertaking this work in LIFT households increased from 12 to 16 percent ( $p < .005$ ), while no statistically significant change took place in the Control households. Despite this, there was no statistical DiD for this activity. At the same time, the proportion of LIFT households indicating that casual labour in agriculture was the most important source of income fell from 21 to 15 percent. However, it rose slightly in Control households, making the DiD between the two types of households significant ( $p < .05$ ).

The importance of the sale of fresh wild catch of fish, prawns, crabs, and shellfish grew significantly over the two rounds for both LIFT and Control households. In the first round, under 5 percent of both types of households ranked this activity as their main source of income; by the second round, 13 percent of them ranked this activity as being important.

The over-sampling of Coastal/Delta households in the two surveys has increased the importance of this activity in the ranking. As noted above, close to half of all households that were interviewed in both rounds were in the Coastal/Delta zone, and it was these households that predominately ranked this activity as being important. In Round 1, 93 percent of those ranking it as being important were in this zone; in Round 2, 97 percent ranking this work as one of their top five sources of income were from this zone.

**Table 21: Top five main sources of household income (n=3,328)**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Differ- ence in differ- ences
<b>Casual labour—agriculture</b>	20.6	15.2	-5.4**	13.9	14.2	.3	-5.7*
<b>Sale of paddy</b>	12.2	16.6	4.4**	8.2	10.2	2	2.4
<b>Sale of beans, pulses, and peanuts</b>	7.8	6.6	-1.2	11.5	6.1	-5.4**	4.2*
<b>Sale of other cereals (maize, wheat, barley, oats, sorghum, etc.)</b>	7.7	8.3	.6	7.1	8.5	1.4	-.8
<b>Sale of fresh wild catch of fish, prawns, crabs, shellfish</b>	4.7	12.5	7.8***	4.3	12.5	8.2***	-.4

2013 data: Based on all 3,200 households interviewed in that year

By zone and comparison between male- and female-headed households						
	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total
<b>Casual labour—agriculture</b>	11***	18.5***	17.5***	14.7**	19.4**	15.7
<b>Sale of other cereals (maize, wheat, barley, oats, sorghum, etc.)</b>	26.9***	9.4***	0***	12.6	10.6	12.2
<b>Sale of paddy</b>	2.5***	2.7***	29.5***	12.3**	8.1**	11.5
<b>Sale of beans, pulses, and peanuts</b>	2.8***	22.9***	.1***	8.3	10.2	8.7

<b>Sale of fresh wild catch of fish, prawns, crabs, shellfish</b>	.6***	.2***	23.5***	9.3***	2.8***	8
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**By average household income and landownership**

	<50,000	50,000–100,000	> 100,000	Own land	No land	Total
<b>Casual labour—agriculture</b>	25.6***	14***	4.1***	5.6***	29.5***	15.7
<b>Sale of other cereals (maize, wheat, barley, oats, sorghum, etc.)</b>	8.1***	11.7***	18.5***	19.7***	1.8***	12.2
<b>Sale of paddy</b>	5.7***	10.8***	20.8***	18.3***	2.1***	11.5
<b>Sale of beans, pulses, and peanuts</b>	8.5	9.5	7.6	14.3***	.9***	8.7
<b>Sale of fresh wild catch of fish, prawns, crabs, shellfish</b>	6.4***	12.8***	2.8***	1***	17.6***	8

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

A review of the 2013 data from the households in the 150 LIFT and 50 Control villages reveals there were important differences between the three agro-ecological zones regarding the five top sources of income. The most common ranked source of income for households in the Hilly zone was the sale of non-rice cereals, with 27 percent of them undertaking this activity. While, for households in the Dry zone, the most common source of income was the sale of beans, pulses, and peanuts, with 23 percent doing this. Whereas, among Coastal/Delta zone households, the most common source of income was the sale of paddy. For each source mentioned above, there was a significant statistical difference of  $p < .001$  between the zones. Male-headed households were more likely to sell fresh fish and other seafood than female-headed households, with 9 and 3 percent, respectively, earning money from this source ( $p < .001$ ). Male-headed households were also more likely to earn money from the sale of paddy, with 12 percent doing this, compared to 8 percent of female-headed households ( $p < .005$ ). However, female-headed households were more likely to earn money from casual labour in agriculture, with nearly 20 percent gaining money from this source, compared to 15 percent of male-headed households ( $p < .005$ ).

For households with an average income of less than 50,000 kyat per month, the most common source of income was casual labour, accounting for over a quarter of such households, compared to 14 percent of those with an income between 50,000–100,000 kyat, and 4 percent of those earning over 100,000 kyat ( $p < .001$ ). Households with the middle range of monthly income were most likely to sell fresh wild catch of fish, prawns, crabs, and shellfish, with 13 percent of them doing so, compared to 6 percent or less for the other two income groups ( $p < .001$ ). The most common source of income for those earning more than 100,000 kyat was the sale of paddy, with one in five of them having this source of income, compared to 11 percent or less for the other two groups ( $p < .001$ ).

Households owning land were far more likely to sell non-rice cereals, paddy and beans, pulses, and peanuts compared to those households without land. The main sources of income for those without land was casual labour and the sale of fresh wild caught fish and other seafood, compared to those with land. All these difference were significant at the  $p < .001$  level.

### 4.3.2. Household average total income

The household survey did not attempt to detail income and expenditure, as this was undertaken by the expenditure survey (see below). Rather, in the household survey respondents were asked what their household's average monthly income was, taking into account all sources. This was a closed question using set ranges of monthly income. While this should not be considered accurate, it provides some relative assessment of income that can be compared with other measures of household wealth.

Table 22 (below) indicates that there were no statistically significant DiD between LIFT and Control households in terms of monthly income range. Despite that, there was an important change that took place in both LIFT and Control households. In 2011, the most common household monthly income range reported by respondents was 25,000–50,000 kyat, with close to 40 percent of both types of households reporting this. However, by 2013, there was a statistically significant drop in households reporting this range in both LIFT and Control households ( $p < .001$ ), leaving under 30 percent of both types of households having reported this income range. Nevertheless, this monthly income bracket remained the most common one for the households.

**Table 22: Average total income in a normal month (n=3,328)**

kyat	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
Less than 25,000	13.3	9.7	-3.6*	14.2	8.7	-5.5**	1.9
>25,000–50,000	41.4	27.2	-14.2***	37.3	29.7	-7.6**	-6.6
>50,000–75,000	20.2	23.6	3.4	21.5	25.9	4.4	-1
>75,000–100,000	12.2	16	3.8*	14.1	15.3	1.2	2.6
>100,000–200,000	5.7	11.5	5.8***	7.5	10.6	3.1	2.7
>200,000–250,000	3.1	5.3	2.2*	2.1	4.2	2.1*	.1
More than 250,000	4	6.7	2.7*	3.3	5.7	2.4*	.3

2013 data: Based on all 3,200 households interviewed in that year

By zone and comparison between male- and female-headed households

kyat	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total
Less than 25,000	17.2***	6.3***	2.7***	7.7***	12.7***	8.8
>25,000–50,000	24.6	27.2	27.9	25.6*	30.4*	26.6
>50,000–75,000	15.1***	23.2***	30.1***	23.4	20.2	22.8
>75,000–100,000	13.9**	19.8**	17**	17.7*	13.5*	16.9
>100,000–200,000	13.1	13.4	10.9	12.6	11.8	12.5
>200,000–250,000	6.9*	6.1*	4*	5.8	5	5.7

<b>More than 250,000</b>	9.2***	3.9***	7.5***	7	6.4	6.9
<b>By landownership</b>						
<b>kyat</b>				<b>Own land</b>	<b>No land</b>	<b>Total</b>
<b>Less than 25,000</b>	-	-	-	9.6*	7.6*	8.8
<b>&gt;25,000–50,000</b>	-	-	-	22.4***	32.4***	26.6
<b>&gt;50,000–75,000</b>	-	-	-	19.1***	27.9***	22.8
<b>&gt;75,000–100,000</b>	-	-	-	18.6**	14.4**	16.9
<b>&gt;100,000–200,000</b>	-	-	-	13.8*	10.6*	12.5
<b>&gt;200,000–250,000</b>	-	-	-	7.7***	2.9***	5.7
<b>More than 250,000</b>	-	-	-	8.8***	4.3***	6.9

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

Table 22 also shows that—based on all households interviewed in 2013—Hilly zone households had a greater proportion of households earning the least amount, but also the greatest proportion earning the most per month. In the Hilly zone, 17 percent of households were earning less than 25,000 kyat in a typical month, compared to 6 and 3 percent of Hilly and Coastal/Delta zone households, respectively ( $p < .001$ ). For the highest monthly income level of more than 250,000 kyat, 9 percent of Hilly zone households were earning this amount, compared to 4 percent of Dry zone households, and 8 percent of Coastal/Delta households ( $p < .001$ ).

A greater proportion of female-headed than male-headed households had an average monthly income of 50,000 kyat or less. Thirty percent of female-headed households were earning between 25,000–50,000 kyat, compared to 26 percent of male-headed households ( $p < .05$ ). Further, 13 percent of female-headed households had an average income of less than 25,000 kyat, compared to 8 percent of male-headed households ( $p < .001$ ). Male-headed households were more likely to earn between 75,000 to 100,000 kyat than female-headed households, with 18 and 14 percent of them earning this much, respectively ( $p < .05$ ).

Combing the two income groups of 25,000–50,000 kyat with less than 25,000 kyat, the statistically significant difference between female- and male-headed households was  $p < .001$ . While combing the two incomes of more than 50,000–75,000 with 75,000–100,000 kyat, the difference was  $p < .005$ , with male-headed households dominating. However, there was no statistically significant difference between male- and female-headed households for those with an average income of more than 100,000 kyat.

Households owning land were more likely to earn both the least and the most amount in a typical month. Among households owning land, 10 percent earned less than 25,000 kyat, compared to 8 percent of households without land ( $p < .05$ ). Households on average that earned more than 250,000 kyat per month accounted for 9 percent of those with land, and 4 percent of those without land ( $p < .001$ ).



### 4.3.3. Comparison with previous household income

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.

Between the two survey rounds, there was a statistically significant DiD between LIFT and Control households reporting that their household income had increased compared with the previous 12 months ( $p < .05$ ) (Table 23). The percentage of LIFT households reporting this increased from 18 percent in Round 1 to 25 percent in Round 2 ( $p < .001$ ). At the same time, the percentage of Control households reporting this remained the same. There was also a significant change in the number of households indicating a decreased income compared with the previous 12 months; this change took place in both LIFT and Control households, and the DiD was not significant.

**Table 23: How you compare your household's income during these past 12 months with the previous year (n=3,328)**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
<b>Increased</b>	17.6	24.7	7.1***	15.6	16.1	.5	6.6*
<b>Same as previous year</b>	41.8	44.7	2.9	42.2	54.2	12***	-9.1*
<b>Decreased</b>	40.2	30.3	-9.9***	42	29.2	-12.8***	2.9

**2013 data: Based on all 3,200 households interviewed in that year**

<b>By zone and comparison between male- and female-headed households</b>							
	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total	
<b>Increased</b>	29.3***	24***	21.5***	25	24.8	24.9	
<b>Same as previous year</b>	44.2	47.9	44.3	45.1	46.9	45.5	
<b>Decreased</b>	26.5***	27.5***	33.9***	29.7	27.6	29.3	

<b>By average household income and landownership</b>						
	<50,000	50,000–100,000	>100,000	Own land	No land	Total
<b>Increased</b>	18.2***	24***	35.9***	26.8**	22.4**	24.9
<b>Same as previous year</b>	45.2	46	45.1	43.7*	47.9*	45.5
<b>Decreased</b>	36.1***	29.9***	18.8***	29.2	29.4	29.3

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

The 2013 data from the households in the 150 LIFT and 50 Control households indicate that a greater proportion of Hilly zone households perceived their household income had increased over the last 12 months, compared to the households in the other two zones. Among households in the Hilly zone, 29 percent stated that their average household income had improved, compared to 24 and 22 percent in households in the Dry and Coastal/Delta zones, respectively ( $p < .001$ ).

There was no significant difference between male- and female-headed households and their perceived improvements in average income. A quarter of both types of households indicated that their average income had increased from 12 months earlier.

The higher the income households had, the more likely they were to declare that their average income had increased over the past 12 months. This was the case for 36 percent of households with an average monthly income of over 100,000 kyat per month, compared to 24 percent of those earning between 50,000–1000,000 kyat and 18 percent of those earning less than 50,000 kyat per month ( $p < .001$ ).

Households owning land were more positive about the changes in their income over the last 12 months compared to those without land. The proportion that indicated that their income had increased over this time period was 27 percent among households with land, and 22 percent for those without land ( $p < .005$ ).

Information from FGDs indicated that LIFT interventions had made an important contribution to increasing incomes—particularly for farmers learning new agricultural techniques and for those who received livestock training. In the Coastal/Delta zone, FGD participants in one village reported the following:

“Incomes have increased by 20 percent because of the training courses for cultivation. The casual workers have more job opportunities depending on the farmers. All the villagers have participated in building roads during last summer. Because of this the villagers have jobs in the times when there is usually no employment. Therefore they are not in debt”.

In another village in the same zone participants noted the following:

“Income is higher and the living standard is also better. All households can make it in the livestock sector as a small business because the LIFT implementing partner loans money to them”.

In the Dry zone, breeding animals was frequently reported as a successful intervention for increasing incomes:

“Breeding goats is very useful for earning a living because we can earn more and take our children to school”.

#### 4.4. Casual employment

The proportion of households that had a member who worked casually for wages in the past 12 months increased significantly (Table 24 below). From the first to the second survey, the proportion doing this work went from under half to over half of all households. Among LIFT households the proportion increased from 45 to 54 percent ( $p < .001$ ). Over the same period of time, among Control households, the increase was from 48 to 55 percent ( $p < .05$ ). Comparing DiD between the LIFT and Control households indicated no statistically significant result.

Based on all the interviewed households in 2013, casual labour was more important in households in the Coastal/Delta zone, among those earning the least amount each month and those without land. Just under half of all households in the Coastal/Delta zone had members working casually for wages in the past 12 months, compared to 47 percent in the Dry zone, and 42 percent in the Hilly zone ( $p < .005$ ). There was no difference between male- and female-headed households, and whether any member of the household worked casually for wages during this period. In households earning the least each month, 56 percent had members doing this work, compared to 50 and 25 percent for households earning 50,000–100,000 kyat and those earning more than this, respectively ( $p < .001$ ). Among households owning land, 31 percent had members undertaking casual paid work, compared to two-thirds of landless households ( $p < .001$ ).

**Table 24: Percentage of households with any member working casually for wages in the past 12 months (n=3,328)**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
<b>Yes</b>	47.1	54.7	7.6***	47.7	54.7	7*	.6
<b>2013 data: Based on all 3,200 households interviewed in that year</b>							
<b>By zone and comparison between male- and female-headed households</b>							
	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total	
<b>Yes</b>	41.5**	46.5**	49.1**	45.4	46.9	45.7	
<b>By average household income and landownership</b>							
	<50,000	50,000–100,000	>100,000	Own land	No land	Total	
<b>Yes</b>	55.6***	49.8***	25.1***	31***	65.9***	45.7	

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.01

#### 4.4.1. Average number of days worked during the different seasons

Reviewing the average number of days worked in the surveys' past monsoon season for both male and female members, to date the LIFT intervention has had no measureable impact (Table 25 below). There was no statistically significant measurement for DiD between the two types of households over the two surveys. Nevertheless, a number of statistically significant results occurred, but these changes tended to happen in both LIFT and Control households.

Nevertheless, for the average number of days worked during the monsoon season, there were significant differences, particularly between households in the three agro-ecological zones, between male- and female-headed households and whether the households owned land or not, for all the households interviewed in 2013. Both males and females in households in the Coastal/Delta zone were more likely to be involved in soil preparation and harvesting compared to their counterparts in the other zones. For most forms of agriculture work, broken down by gender, there were important differences between male- and female-headed households ( $p < .001$ ). These differences are likely to be a reflection of the different sex makeup of the household. Males and females in landless households were more likely to participate in soil preparation, harvesting, and other activities (for males) compared to those in households with land. Nevertheless, males and females from households owning land were more likely to weed, to control pests, and other labour activities while the crop was growing compared to those from households with no land.

**Table 25: Average number of days worked during the monsoon season**

LIFT villages n=1,071 Control villages n=562	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Differ- ence in differ- ences
<b>Soil preparation/ ploughing and/or planting (Males)</b>	28.5	22.4	-6.1*	17.9	15.3	-2.6	-3.5
<b>Soil preparation/ ploughing and/or planting (Females)</b>	14.2	17.9	3.7*	11.5	16.1	4.6*	-.9
<b>Weeding, pest control, or other labour activities while crop is growing (Males)</b>	6.9	5.6	-1.3	6.8	5.6	-1.2	.1
<b>Weeding, pest control, or other labour activities while crop is growing (Females)</b>	8.3	6.4	-1.9	9.5	7.4	-2.1	.2
<b>Harvesting (Males)</b>	17.5	13.9	-3.6*	14.7	10.4	-4.3*	.7
<b>Harvesting (Females)</b>	14.8	15.7	.9	15.5	13.6	-1.9	2.8
<b>Other (Males)</b>	6.9	6.5	-.4	4.7	2.9	-1.8*	1.4
<b>Other (Females)</b>	2.5	1.6	-.9	2.6	2.4	-.2	-.7
<b>2013 data: Based on all 3,200 households interviewed in that year</b>							

**Average number of days worked during the monsoon season by zone and comparison between male- and female-headed households (n=1,462)**

	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total
Soil preparation/ploughing and/or planting (Males)	12.4***	10.5***	30.7***	20.9***	8.4***	18.3
Soil preparation/ploughing and/or planting (Females)	9.6***	10.4***	23.7***	14.3	16.9	14.9
Weeding, pest control, or other labour activities while crop is growing (Males)	8.1***	6.7***	3.2***	6.7***	2.8***	5.9
Weeding, pest control, or other labour activities while crop is growing (Females)	8.6***	14.4***	.4***	6.4***	12.6***	7.7
Harvesting (Males)	8.1***	9.6***	16.7***	13.1***	6.3***	11.7
Harvesting (Females)	9.6***	13.2***	18.8***	13***	18.2***	14.1
Other (Males)	3.1***	1.7***	9.8***	5.7***	2.2***	5
Other (Females)	3.1**	1.3**	1.7**	1.8	2.6	2

**By average household income and landownership (n=1,462)**

	<50,000	50,000–100,000	>100,000	Own land	No land	Total
Soil preparation/ploughing and/or planting (Males)	17.4*	20.4*	14.7*	11.8***	22.5***	18.3
Soil preparation/ploughing and/or planting (Females)	15*	16.3*	10.2*	10.8***	17.5***	14.9
Weeding, pest control, or other labour activities while crop is growing (Males)	7.1*	4.9*	5.4*	7*	5.2*	5.9
Weeding, pest control, or other labour activities while crop is growing (Females)	8.4	6.8	8.1	10.4***	5.9***	7.7
Harvesting (Males)	12.8	11.4	9.2	8***	14***	11.7
Harvesting (Females)	14.4	14.4	11.8	11.7**	15.6**	14.1
Other (Males)	4.1	5.9	4.9	1.9***	7***	5
Other (Females)	1.4*	2.2*	3.1*	1.9	2	2

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

Similar to the monsoon season, the LIFT programme to date has not had a measureable impact on the average number of days household members worked during the surveys' winter/summer seasons (Table 26). There were no significant results when comparing DiD between LIFT and Control households.

The data from all households interviewed in 2013 show there were statistically significant differences between the three agro-ecological zones and between male- and female-headed households for the average number of days worked during this season at the p<.001 level.

Females from Dry zone households were more likely to be involved in soil preparation, weeding, pest control or other labour activities while the crop grew, and harvesting, compared to females from households in the other two zones. Males, also from Dry zone households, were more likely to be involved in weeding, pest control or other labour activities while the crop grew, and undertaking other farming activities compared to males from households in the other zones. The differences between the male- and female-headed households for work during this season most likely reflect the gender makeup of the households, as was the case during the monsoon season.

**Table 26: Average number of days worked during the winter/summer seasons**

LIFT villages n=1,071 Control villages n=562	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Differ- ence in differ- ences
<b>Soil preparation/ ploughing and/or planting (Males)</b>	6.2	6.2	0	4.3	5.5	1.2	-1.2
<b>Soil preparation/ ploughing and/or planting (Females)</b>	2.7	2.9	.2	3.7	3.9	.2	0
<b>Weeding, pest control, or other labour activities while crop is growing (Males)</b>	2.2	2.8	.6	3.6	4.2	.6	0
<b>Weeding, pest control, or other labour activities while crop is growing (Females)</b>	4	4.1	.1	5.2	4.1	-1.1	1.2
<b>Harvesting (Males)</b>	7.9	6.8	-1.1	6.6	7	-.4	-1.5
<b>Harvesting (Females)</b>	9.4	7.8	-1.6	11.2	7.7	-3.5	1.9
<b>Other (Males)</b>	3.6	2.5	-1.1	3.2	2	-1.2	.1
<b>Other (Females)</b>	2.9	.8	-2.1***	3.5	2.5	-1	-1.1
<b>2013 data: Based on all 3,200 households interviewed in that year</b>							

**Average number of days worked during the monsoon season by zone and comparison between male- and female-headed households (n=1,462)**

	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total
<b>Soil preparation/ploughing and/or planting (Males)</b>	5.2*	8.9*	6.2*	7.2	5.3	6.8
<b>Soil preparation/ploughing and/or planting (Females)</b>	3.6***	10.2***	1.4***	4***	9.1***	5.1
<b>Weeding, pest control, or other labour activities while crop is growing (Males)</b>	4.4***	4.9***	1.1***	3.7	2.3	3.4
<b>Weeding, pest control, or other labour activities while crop is growing (Females)</b>	4.3***	10.6***	.2***	4.1***	8.5***	5

Harvesting (Males)	7.1	7.8	8.5	8.5**	5.1**	7.8
Harvesting (Females)	7***	13.5***	8.3***	8.5***	14.2***	9.7
Other (Males)	2.9***	1.3***	4.3***	3.2*	1.3*	2.9
Other (Females)	1.7	2.3	1	1.6	2.1	1.7

**By average household income and landownership (n=1,462)**

	<50,000	50,000–100,000	>100,000	Own land	No land	Total
Soil preparation/ploughing and/or planting (Males)	6.4	7.4	6.2	6.3	7.2	6.8
Soil preparation/ploughing and/or planting (Females)	3.8*	5.6*	7.4*	5.2	5	5.1
Weeding, pest control, or other labour activities while crop is growing (Males)	3.3	3.3	3.8	3.7	3.1	3.4
Weeding, pest control, or other labour activities while crop is growing (Females)	4.5	5.3	5.8	6.3**	4.1**	5
Harvesting (Males)	7.5	7.6	9.8	6.6*	8.6*	7.8
Harvesting (Females)	9.4	9.9	10	9.9	9.6	9.7
Other (Males)	2.6	3.1	2.9	1.8**	3.5**	2.9
Other (Females)	1.3*	1.5*	3.4*	1.7	1.6	1.7

\*p-value < 0.05, \*\*p-value <0.005, \*\*\*p-value <0.001

#### 4.4.2. Comparison of availability of casual work with the previous year

The majority of both LIFT and Control households indicated that the availability of casual work in their vicinity had stayed the same, when compared to 12 months earlier (Table 27 below). In both types of households there was a statistically significant increase in the proportion of households indicating that there had been an increase in the availability of casual work opportunities; however, the proportion of households holding this view was a minority. DiD between the LIFT and Control households over the two surveys was not significant.

Information gleaned from FGDs indicated that, in some areas, the availability of casual work had increased as a result of LIFT interventions:

“The villagers before had no work in March, April, May, July, and August. But now work is available in the village” (Dry zone).

Other FGDs indicated that, in some areas, the availability of casual work had decreased during the past 36 months. For example, in a village in the Coastal/Delta zone, casual labourers noted the following:

“The jobs are becoming scarce compared to the past three years... [and] most of the people go to the city to look for jobs”.



Additionally, in LIFT villages where agricultural machinery had been provided, there was reportedly a decrease in the need for casual labourers:

“Since the farmers started using machines, the odd-jobbers don’t have jobs anymore” (Coastal/Delta zone).

“Before the implementing partner activities, the farmers needed 30 casual workers and 30 days for one acre. But nowadays the farmers need only a few workers for five days” (Hilly zone).

**Table 27: How you compare the availability of casual work in this area this year with the previous year (n=1,633)**

LIFT n=1,071 Control n=562	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Differ- ence in differ- ences
<b>Increased</b>	10.9	20	9.1***	9	17.2	8.2**	.9
<b>Same as previous year</b>	47.9	49.1	1.2	54.5	62.1	7.6	-6.4
<b>Decreased</b>	41	30.5	-10.5***	36.5	20.7	-15.8***	5.3

2013 data: Based on all 3,200 households interviewed in that year

By zone and comparison between male- and female-headed households (n=1,462)						
	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total
<b>Increased</b>	26.7***	23.9***	16***	21.8	22.5	22
<b>Same as previous year</b>	49.9*	54.4*	53.6*	52.2	55	52.7
<b>Decreased</b>	23.4**	21.3***	29.9***	25.8	21.9	25

By average household income and landownership (n=1,462)

	<50,000	50,000– 100,000	>100,000	Own land	No land	Total
<b>Increased</b>	20.7*	20.7*	29.9*	26**	19.3**	22
<b>Same as previous year</b>	49.8*	56.6*	49.8*	53.4	52.3	52.7
<b>Decreased</b>	29.1**	22.6**	19.4**	20.2**	28**	25

\*p-value < 0.05, \*\*p-value <0.005, \*\*\*p-value <0.001

Note: Excludes those who indicated that they did not know.

Table 27 also shows that, for all households interviewed in 2013, those in the Hilly zone were the most likely to indicate that the availability of casual labour had increased from the previous year. In this zone, 27 percent of households indicated that casual labour had increased, compared to 24 percent in the Dry zone and 16 percent in the Coastal/Delta zone (p<.001). There were no statistically significant changes in the availability of casual labour at the level of p<.001 based on the sex of the head of the household, households’ income, or whether they owned land.

#### 4.4.3. Households working for in-kind payments

The proportion of households that had a member working for in-kind payment dropped significantly from Round 1 to Round 2 for both LIFT and Control households (Table 28 below). The proportion of LIFT households with a member doing this work fell from 27 to 10 percent ( $p < .001$ ), while it dropped from 25 to 7 percent in the Control households ( $p < .001$ ). Given the fall took place in both types of households, DiD was not significant.

However, there was a statistically significant DiD between the LIFT and Control households and whether they believed being paid in cash or being paid in-kind was more important ( $p < .05$ ). This resulted from changing beliefs among the Control households and not the LIFT households. The proportion of households stating that being paid in cash was more important fell from 88 to 69 percent among Control households over the two surveys ( $p < .005$ ).

**Table 28: Proportion of households with a member working for in-kind payments and the importance of this payment system**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Differ- ence in differ- ences
<b>Did anyone from your household work for in-kind payment? (n=1,664 for LIFT and 877 for Control villages)</b>	26.7	9.6	-17.1***	24.6	7.3	-17.3***	.2
<b>Paid in cash is more important (n=680 for LIFT and 343 for Control villages)</b>	85.9	78.8	-7.1	87.7	69	-18.7**	11.6*
<b>Paid in-kind is more important (n=680 for LIFT and 343 for Control villages)</b>	14.1	21.2	7.1	12.3	31	18.7**	-11.6*

2013 data: Based on all 3,200 households interviewed in that year

By zone and comparison between male- and female-headed households						
	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total
<b>Did anyone from your household work for in-kind payment (n=3,200)</b>	10.7***	5.3***	7.6***	8.4*	5.9*	7.9
<b>Paid in cash is more important (n=252)</b>	61.7*	77.2*	76.3*	69.2	73.7	69.8
<b>Paid in kind is more important (n=252)</b>	38.3*	22.8*	23.8*	30.8	26.3	30.2

By average household income and landownership						
	<50,000	50,000– 100,000	>100,000	Own land	No land	Total

<b>Did anyone from your household work for in-kind payment (n=3,200)</b>	8.8***	9.2***	4.5***	5.7***	10.9***	7.9
<b>Paid in cash is more important (n=252)</b>	66.7	74.4	63.9	67.6	71.4	69.8
<b>Paid in kind is more important (n=252)</b>	33.3	25.6	36.1	32.4	28.6	30.2

\*p-value < 0.05, \*\*p-value <0.005, \*\*\*p-value <0.001

Table 28 also illustrates that, based on all the households interviewed in the 150 LIFT and 50 Control households in 2013, there were significant statistical differences at the  $p < .001$  level for those households with a member working for in-kind payment in the three agro-ecological zones, based on the households' incomes and whether they owned land or not. In the Hilly zone, 11 percent of households had a member who worked for in-kind payment, compared to 5 and 8 percent of households in the Dry and Coastal/Delta zones, respectively. In households earning less than 50,000 kyat and those earning between 50,000–100,000 kyat on average per month, 9 percent worked for in-kind payment, while only 5 percent of households earning more than 100,000 kyat were doing so. From landless households, 11 percent worked for in-kind payment, while 6 percent of households with land had a member being paid in this way.

#### 4.5. Farm labour

From the first to the second surveys there was no statistically significant increase in the number of LIFT or Control households undertaking farming activities (Table 29). Nevertheless, for those LIFT households which undertook farming activities, there was a statistically significant increase in the proportion employing workers in agricultural production. It increased from 56 to 67 percent ( $p < .001$ ). The proportion of Control households employing farm workers also increased, but not significantly. At the same time, DiD between LIFT and Control households was not significant.

Using the data from all households interviewed in 2013, there were important differences between the three agro-ecological zones, the households incomes and whether they owned land or not and whether they undertook any farming activities. Over three-quarters of Hilly zone households indicated that they undertook farming activities, compared to 61 percent in the Dry zone and 35 percent in the Coastal/Delta zone ( $p < .001$ ). Among households earning more than 100,000 kyat, over 70 percent were involved in farming, compared to 54 percent in the two other income groups ( $p < .001$ ). Over 90 percent of households owning land undertook farming, compared to 12 percent of those households without land ( $p < .001$ ).

**Table 29: Undertaking farming activities and employing farm labour**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
<b>Undertook any farming activities (n=3,328)</b>	51	55.1	4.1	52.3	54.5	2.2	1.9
<b>Employed workers in agricultural production (n=1,769)</b>	55.7	67.7	12***	50.2	56.7	6.5	5.5
<b>2013 data: Based on all 3,200 households interviewed in that year</b>							
<b>By zone and comparison between male- and female-headed households</b>							
	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total	
<b>Undertook any farming activities</b>	77.8***	60.8***	35.4***	40.7*	46.6*	58.1	
<b>Employed workers in agricultural production (n=1,860)</b>	36.7***	77.9***	90.4***	61.7	62.8	61.9	
<b>By average household income and landownership</b>							
	<50,000	50,000–100,000	>100,000	Own land	No land	Total	
<b>Undertook any farming activities</b>	53.7***	53.9***	71.1***	91.6***	12.3***	58.1	
<b>Employed workers in agricultural production (n=1,860)</b>	43.8***	64.3***	78.4***	63.1**	50**	61.9	

\*p-value < 0.05, \*\*p-value <0.005, \*\*\*p-value <0.001

When asked if respondents believed their household was employing more, less, or about the same amount of farm labour, the majority of both LIFT and Control households indicated that they employed about the same amount during the past 12 months compared with the previous year (Table 30 below). The data from all the households interviewed in 2013 also indicated that this was also the case for households in the three agro-ecological zones, for male- and female-headed households, for the three income groups, and for households either owning or not owning land.

**Table 30: Did your household employ more, less, or about the same amount of farm labour during the past 12 months compared with the previous year?**

(n=1,040)	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
<b>More farm labour</b>	25.9	25.4	-5	16.6	23.6	7	-7.5
<b>Same as previous year</b>	67	63.2	-3.8	72.2	62.4	-9.8	6
<b>Less labour</b>	7.1	11.4	4.3	11.3	14	2.7	1.6

**2013 data: Based on all 3,200 households interviewed in that year**

By zone and comparison between male- and female-headed households						
(n=1,152)	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total
More farm labour	25.8	28.9	22.8	25.5	29.6	26.3
Same as previous year	59.2*	58.5*	68.6*	62.6	57.4	61.6
Less labour	15*	12.6*	8.6*	11.9	13	12.1

By average household income and landownership						
(n=1,152)	<50,000	50,000–100,000	>100,000	Own land	No land	Total
More farm labour	27.1	23	29.1	26.6	22.9	26.3
Same as previous year	57.1	65	61	61.3	66.3	61.6
Less labour	15.8	12	9.9	12.2	10.8	12.1

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

## 4.6. Food consumption and food security

### 4.6.1. Food consumption

In terms of the types of food that the household members were eating in the day before the survey, there were two significant DiD between the two types of households from Round 1 to Round 2 ( $p < .05$ ) (Table 31 below). These changes occurred for the consumption of any beef, pork, lamb, goat, rabbit, chicken, duck, other birds, other meats or organs such as liver, heart, kidney, etc., and the consumption of any eggs from chickens, quails, ducks, or other birds. For both LIFT and Control households the change was significant. However, the extent of change was greater in the LIFT households than in the Control households.

Reflecting a positive change in the availability of food, all the significant changes that took place in both LIFT and Control households in terms food consumption were positive. Between the two surveys, there was not one food item that was significantly eaten by fewer households.

**Table 31: Food consumed by households the day before the survey (n=3,328)**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
Any rice, sticky rice, or any other food made from rice, sticky rice, maize, wheat, barley, oats, millet, sorghum?	100	100	0	100	100	0	0
Any noodles, bread, biscuits, or any other foods made from flour?	12.7	24.7	12***	13.2	26.6	13.4***	-1.4

<b>Any potatoes, cassava, yams, taro, or any food made from roots or tubers?</b>	11.5	19.1	7.6***	13.4	19.6	6.2**	1.4
<b>Any vegetables?</b>	82.5	83.2	.7	85.6	87.5	1.9	-1.2
<b>Any fruits?</b>	22.4	32.5	10.1***	18.6	34.9	16.3***	-6.2
<b>Any beef, pork, lamb, goat, rabbit, chicken, duck, other birds, other meats or organs such as liver, heart, kidney, etc.?</b>	11	26.4	15.4***	12.2	21.2	9***	6.4*
<b>Any eggs from chickens, quails, ducks, or other birds?</b>	9.8	23.7	13.9***	14.4	21	6.6**	7.3*
<b>Any fish, crabs, prawns, or shellfish, either fresh or dried?</b>	54.5	50.5	-4	48.8	48.3	-.5	-3.5
<b>Any food made from gram, peas, cowpeas, pigeon peas, lentils, beans, peanuts, or other nuts?</b>	27	32.8	5.8**	35.1	37.3	2.2	3.6
<b>Any milk, milk solids, yogurt, cheese, or other milk products?</b>	5	7.3	2.3*	2.4	6.8	4.4***	-2.1
<b>Any food made with peanut oil, coconut oil, palm oil, sesame oil, sunflower oil or other oils, animal fat, butter, or margarine?</b>	84.7	94.7	10***	88.2	97.4	9.2***	.8
<b>Any sugar, jaggery, honey?</b>	20.9	30.7	9.8***	18.4	25.9	7.5**	2.3
<b>Any coffee or tea?</b>	14.1	24.4	10.3***	10.8	21.7	10.9***	-6
<b>Any condiments such as salt, pepper, curry, or chillies, etc.?</b>	100	100	0	100	100	0	0

2013 data: Based on all 3,200 households interviewed in that year

By zone and comparison between male- and female-headed households

	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total
<b>Any rice, sticky rice, or any other food made from rice, sticky rice, maize, wheat, barley, oats, millet, sorghum?</b>	100	100	100	100	100	100
<b>Any noodles, bread, biscuits, or any other foods made from flour?</b>	24.8***	18***	31.4***	25.4	21.9	24.7
<b>Any potatoes, cassava, yams, taro, or any food made from roots or tubers?</b>	28.9***	19.5***	18.5***	22.5	21.6	22.3
<b>Any vegetables?</b>	94.9***	95.6***	72.1***	87.3	88.8	87.6

Any fruits?	30.7	35.1	33.4	32.9	33.7	33.4
Any beef, pork, lamb, goat, rabbit, chicken, duck, other birds, other meats or organs such as liver, heart, kidney, etc.?	28.3***	29.2***	19.6***	26.6*	22.4*	25.7
Any other meats from frogs, eel, rats, snakes, dogs, cats, etc.?	.8	1.1	2	1.4	1.1	1.3
Any eggs from chickens, quails, ducks or other birds?	21.2	24.2	24.7	23.1	24.4	23.3
Any fish, crabs, prawns, or shellfish, either fresh or dried?	20.1***	27.3***	83***	44.8***	37***	43.3
Any food made from gram, peas, cowpeas, pigeon peas, lentils, beans, peanuts, or other nuts?	44.2***	51.6***	19.2***	37.9	40.7	39.4
Any milk, milk solids, yogurt, cheese, or other milk products?	6.9***	3.5***	8.8***	6.5	5.7	6.4
Any food made with peanut oil, coconut oil, palm oil, sesame oil, sunflower oil or other oils, animal fat, butter, or margarine?	98.1***	95.6***	94***	95.7	96.7	95.9
Any sugar, jaggery, honey?	21.2***	28.8***	35.1***	28.1	29.3	28.3
Any coffee or tea?	23***	20***	29.8***	24.4	23.6	24.1
Any condiments such as salt, pepper, curry, or chillies, etc.?	100	100	100	100	100	100
<b>By average household income and landownership</b>						
	<b>&lt;50,000</b>	<b>50,000–100,000</b>	<b>&gt;100,000</b>	<b>Own land</b>	<b>No land</b>	<b>Total</b>
Any rice, sticky rice, or any other food made from rice, sticky rice, maize, wheat, barley, oats, millet, sorghum?	100	100	100	100	100	100
Any noodles, bread, biscuits, or any other foods made from flour?	15.2***	25.6***	36.8***	24	25.7	24.7
Any potatoes, cassava, yams, taro, or any food made from roots or tubers?	18.4***	21.1***	29.8***	25.4***	18.1***	22.3
Any vegetables?	85.6***	86.4***	92.4***	92.8***	80.5***	87.6
Any fruits?	24.6***	35.4***	41.4***	33.9	31.9	33.4
Any beef, pork, lamb, goat, rabbit, chicken, duck, other birds, other meats or organs such as liver, heart, kidney, etc.?	19.1***	23.5***	38.6***	27.7**	23**	25.7
Any other meats from frogs, eel, rats, snakes, dogs, cats, etc.?	.8	1.6	1.6	1.5	1.1	1.3
Any eggs from chickens, quails, ducks, or other birds?	17.4***	23.8***	31***	24.5	21.7	23.3
Any fish, crabs, prawns, or shellfish, either fresh or dried?	36.3***	48.1***	45.3***	35.5***	53.9***	43.3



<b>Any food made from gram, peas, cowpeas, pigeon peas, lentils, beans, peanuts, or other nuts?</b>	34.7***	37.1***	45.8***	44.1***	30.7***	39.4
<b>Any milk, milk solids, yogurt, cheese, or other milk products?</b>	3.3***	6.1***	11.1***	6.3	6.4	6.4
<b>Any food made with peanut oil, coconut oil, palm oil, sesame oil, sunflower oil or other oils, animal fat, butter, or margarine?</b>	96.2	95.9	95.6	96.5	95.2	95.9
<b>Any sugar, jaggery, honey?</b>	19.3***	29.9***	38.6***	29	27.4	28.3
<b>Any coffee or tea?</b>	13.6***	24.1***	39.5***	24.6	23.7	24.1
<b>Any condiments such as salt, pepper, curry, or chillies, etc.?</b>	100	100	100	100	100	100

\*p-value < 0.05, \*\*p-value <0.005, \*\*\*p-value <0.001

The 2013 data from the interviewed households in the 150 LIFT and 50 Control villages show important differences between food consumed in the day before the survey in the three agro-ecological zones, between male- and female-headed households, between the three income groups and whether they owned land or not. For example, around 95 percent of households in both the Hilly and Dry zones consumed vegetables, but in the Coastal/Delta zone only 72 percent did ( $p < .001$ ). While 83 percent of Coastal/Delta zone households ate fish and/or seafood, compared to only 20 and 27 percent of households in the Hilly and Dry zones, respectively ( $p < .001$ ).

Between male- and female-headed households, there was one statistically significant difference at the  $p < .001$  level for the food consumed in the 24 hours before the survey. That was for the consumption of fish and seafood; 45 percent of male-headed households consumed this, compared to 37 percent for female-headed households.

Between the three income groups, for all food items consumed, but one in which there was a statistically significant difference at the  $p < .001$  level, it was households earning the most money that had the greatest proportion eating these items. This was the case for noodles, potatoes, and other root vegetables, vegetables, fruits, meat, eggs, milk, sugar, jaggery, honey, and coffee and tea. The one exception was fish and/or seafood, in which households earning between 50,000–100,000 kyat were most likely eat.

There was a similar pattern in food consumption based on whether the household owned land or not. Apart from fish and/or other seafood, in which more landless households consumed than those with land, it was those households with land that consumed more food items. FGDs indicated important improvements in the nutrition status of participants across the three agro-ecological zones. In the Hilly zone, despite concerns about the degradation of the soil and a decrease in the quality of paddy, many participants reported improvements in their home gardening, as a result of training and inputs. For example, one person claimed the following:

“... the vegetables yield is better and bigger than before [and that] households can plant vegetables not only for their own food but have enough to sell as well”.

FGD participants suggested diversity of vegetables grown expanded as well as the following:

“The vegetables are tastier and more nutritious after using the methods taught by the LIFT implementing partner” (Hilly zone).

However, access to meat remained difficult for the poor in some villages. For example, in the Hilly zone:

“Rich people can eat meat and fish but the poor people cannot eat them”.

In the Coastal/Delta zone, protein consumption varied between villages. In one village, participants said the following:

“Fish is available in the village and people can afford to eat it, but cannot afford to eat meat”.

#### 4.6.2. HDDS

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, and caloric and protein adequacy. It is also correlated with household income.<sup>8</sup> Increased food expenditure resulting from additional income is generally associated with increased quantity and quality of the diet.

Based on the information given about types of food consumed as shown in Table 31 above, Table 32 (below) summarises the results in terms of average number of different food groups consumed by the interviewed households. There was a statistically significant increase in the HDDS score for both the LIFT and Control households ( $p < .001$ ). The average number of different food groups consumed in the previous 24 hours before the interview increased from slightly over 5 to 6 from the first to the second survey. There was no significant DiD between LIFT and Control households for this score. Not only was an increase in the number of households eating certain food items, but on average their diversity of food consumption has also increased.

For the households in the 150 LIFT and 50 Control villages interviewed in 2013, it was households in the Dry zone ( $p < .05$ ), those earning on average over 100,000 kyat per month ( $p < .001$ ), and those that owned land ( $p < .001$ ) that had the highest average HDDS. Of all the

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8 Swindale, and 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.

groups indicated in Table 32, it was those with the highest monthly income that had the highest average HDDS, with a mean score of 6.7, while the lowest score was for households earning on average less than 50,000 kyat, with a score of 5.56. There was no significant difference between male- and female-headed households for this score.

Many participants in FGDs reported an improvement in dietary diversity, and suggested the change was because of the LIFT programme. One person stated the following:

“People could only eat with fish paste before, but now they can eat with meats after support from LIFT” (Dry zone).

A second person said:

“Protein deficiency is very common here, but the situation began to change after 2011, owing to the increase of livestock breeding (pig and chicken) activities provided by different organisations” (Coastal/Delta zone).

**Table 32: Average HDDS**

LIFT n=2,176 Control n=1,152	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Differ- ence in differ- ences
<b>Mean</b>	5.3	6	.7***	5.4	6	.6***	.1
<b>2013 data: Based on all 3,200 households interviewed in that year</b>							
<b>By zone and comparison between male- and female-headed households</b>							
	<b>Hilly</b>	<b>Dry</b>	<b>Coastal / Delta</b>	<b>Male headed</b>	<b>Female headed</b>	<b>Total</b>	
<b>Mean</b>	5.95*	6.11*	6.09*	6.06	6.01	6.05	
<b>By average household income and landownership</b>							
	<b>&lt;50,000</b>	<b>50,000– 100,000</b>	<b>&gt;100,000</b>	<b>Own land</b>	<b>No land</b>	<b>Total</b>	
<b>Mean</b>	5.56***	6.08***	6.7***	6.17***	5.9***	6.05	

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

The minimum HDDS score was 2 and the maximum was 12 in the two surveys (Table 33). Reflecting the significant increase in the average HDDS, there was a significant shift upwards, with fewer households having scores of 5 or fewer, and more households having scores of 7 and above. Also, as with the average HDDS, there was no significant difference in DiD between the LIFT and Control households for each individual score.

**Table 33: HDDS (n=3,328)**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	1.3	0	-1.3***	.3	0	-.3	-1
3	6.1	.6	-5.5***	4.9	.2	-4.7***	-8
4	20.1	17.4	-2.7	20.1	14.8	-5.3*	2.6
5	34.9	26.5	-8.4***	34	30.2	-3.8	-4.6
6	20.6	23.3	2.7	21.5	23.3	1.8	.9
7	9.9	14.6	4.7**	12.5	15.1	2.6	2.1
8	4	8.4	4.4***	4.7	8.3	3.6*	.8
9	1.6	5.7	4.1***	.9	5.2	4.3***	-2
10	1	2.4	1.4*	.9	1.7	.8	.6
11	.4	1.1	.7*	.2	1	.8	-1
12	.1	.2	.1	0	.2	.2	-1

\*p-value < 0.05, \*\*p-value <0.005, \*\*\*p-value <0.001

#### 4.6.3. MAHFP

The indicator 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, MAHFP captures 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.<sup>9</sup>

Encouragingly, the data indicate a marked reduction in the number of households that did not have enough food to meet their household needs in both LIFT and Control households between the 2011 and 2013 surveys (Table 34 below). In Round 1, three-quarters of LIFT households reported that there were months in the past 12 months in which they did not have enough food. By Round 2, this had fallen to 10 percent (p<.001). In the Control households, 72 percent had months in which they did not have enough food in the 2011 survey, but in the

9 Bilinsky, and 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.

2013 survey only 12 percent reported this ( $p < .001$ ). The reduction was greater in LIFT than Control households (DiD,  $p < .05$ ), suggesting that the LIFT programme has resulted in greater increased food availability compared with households in non-LIFT villages.

Table 34 also shows the number of months households faced food shortages. There was a massive increase in the number of households having no months in the past 12 months in which they did not have enough food to eat. In the 2011 survey, only 25 percent of households in LIFT villages had no months in which they had food shortages, but by 2013 it was 90 percent ( $p < .001$ ). A similar dramatic increase also took place in the Control villages, with the proportion without any months of food shortages increasing from 28 to 88 percent ( $p < .001$ ). Although the change in both types of households was significant, the extent of the change was greater in the LIFT villages, making DiD significant ( $p < .05$ ).

Further, comparing the mean number of months that households did not have enough food to meet their needs reveals a marked difference between LIFT and Control households. The mean number of months that households suffered this problem fell from 2.4 months to 0.2 months for LIFT households, and from 2.1 months to 0.3 months for Control households from 2011 to 2013. Both of these changes were statistically significant at the value  $p < .001$ . The greater reduction in the number of months in LIFT compared to Control households resulted in DiD also being significant ( $p < .001$ ).

The 2013 data from all the interviewed households show important differences between households and whether they experienced months in the past year with not enough food. More Coastal/Delta zone households experienced this problem, with 18 percent doing so, compared to 7 percent or less of households in the other two zones ( $p < .001$ ). Further, there was a significant difference between households in the three zones in terms of the mean number of months they suffered this problem. In the Coastal/Delta zone, households faced this problem on average 0.4 months, compared to 0.2 and 0.1 months in the Dry and Hilly zone households, respectively ( $p < .001$ ).

There was no significant statistical difference between male- and female-headed households in terms of whether the households experienced months in the past 12 months without enough food. This was the case for just under 90 percent of both types of households.

Only 5 percent of households earning on average more than 100,000 kyat per month experienced at least a month without enough food. However, for households earning less than 50,000 kyat and those earning between 50,000–100,000 kyat, the proportion experiencing this problem was 15 and 11 percent, respectively ( $p < .001$ ). Not only did fewer households with the highest income level experience months without enough food, compared to those with lower income, they also on average experienced this problem for fewer months compared to households with lower incomes ( $p < .001$ ).

The proportion of households without enough food during the past year was twice as high for those without land compared to those with land. The percentages were 15 and 7 percent,

respectively ( $p < .001$ ). Households without land, also on average had to survive more months without food compared to households with land ( $p < .001$ ).

**Table 34: Months in the past 12 months in which the household did not have enough food to meet their needs (and which months) (n=3,328)**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
<b>Were there months in the past 12 months with not enough food?</b>	75	10.1	-64.9***	71.7	12	-59.7***	-5.2*
<b>How many months</b>							
<b>0 months</b>	25	89.9	63.3***	28.3	88	56.6***	6.7*
<b>1 month</b>	3.8	1.8	-1.9*	5.4	1.2	-4.5***	2.6
<b>2 months</b>	26.1	5.8	-20.2***	27.8	7.3	-19.7***	-5
<b>3 months</b>	20.4	1.9	-17.1***	19.8	2.3	-17.4***	.3
<b>4 months</b>	13.2	.5	-12.7***	9.2	1	-8.2***	-4.5*
<b>5 months</b>	8.1	0	-8.1***	6.4	0	-6.4***	-1.7*
<b>6 months</b>	1.6	.1	-1.5***	1.6	0	-1.6**	.1
<b>7 months</b>	.9	0	-.9**	.9	0	-.9*	0
<b>8 months</b>	.2	0	-.2	0	0	0	-2
<b>9 months</b>	.1	0	-.1	0	0	0	-1
<b>10 months</b>	0	0	0	.2	0	-.2	.2
<b>11 months</b>	.1	0	-.1	0	0	0	-1
<b>12 months</b>	.6	0	-.6*	.5	.2	-.3	-.3
<b>Mean number of months</b>	2.36***	.22***	-2.14	2.13***	.29***	-1.84	-.3***
<b>2013 data: Based on all 3,200 households interviewed in that year</b>							
<b>By zone and comparison between male- and female-headed households</b>							
	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total	
<b>Were there months in the past 12 months with not enough food?</b>	6.2***	7.3***	18.3***	10.3	11.6	10.5	
<b>How many months</b>							
<b>0 months</b>	93.8***	92.7***	81.7***	89.7	88.4	89.5	
<b>1 month</b>	1.9***	.4***	2.9***	1.6	2.2	1.7	
<b>2 months</b>	3.1***	3.5***	9.1***	5	5.9	5.2	
<b>3 months</b>	.9***	2.2***	3.9***	2.3	2.3	2.3	
<b>4 months</b>	.2**	.8**	1.5**	.7	1.2	.8	
<b>5 months</b>	0*	.2*	.6*	.3	0	.3	
<b>6 months</b>	.1	0	.2	.1	0	.1	

7 months	0	0	0	0	0	0
8 months	0	.1	0	.0	.0	0
9 months	0	0	0	.0	.0	0
10 months	0	0	0	.0	.0	0
11 months	0	0	0	.0	.0	0
12 months	0	0	.1	.0	.0	0
Mean number of months	.12***	.19***	.44***	.25	.26	.25

**By average household income and landownership**

	<50,000	50,000–100,000	>100,000	Own land	No land	Total
<b>Were there months in the past 12 months with not enough food?</b>	14.5***	10.5***	5***	7***	15.4***	10.5
<b>How many months</b>						
0 months	85.5***	89.5***	95***	93***	84.6***	89.5
1 month	2.5*	1.6*	.9*	1***	2.7***	1.7
2 months	6.4*	5.5*	3.1*	3.9***	7***	5.2
3 months	3.5**	2.2**	.9**	1.6**	3.4**	2.3
4 months	1.4*	.8*	.1*	.3***	1.6***	.8
5 months	.4	.2	0	.1	.4	.3
6 months	.2	.1	0	.1	.1	.1
7 months	0	0	0	0	0	0
8 months	0	.1	0	0	.1	0
9 months	0	0	0	0	0	0
10 months	0	0	0	0	0	0
11 months	0	0	0	0	0	0
12 months	.1	0	0	0	.1	0
Mean number of months	.36***	.25***	.1***	.16***	.38***	.25

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

#### 4.6.4. HHS

HHS is a measure of household access to food designed to be used in settings affected by substantial food insecurity.<sup>10</sup> The indicator was intentionally developed for cross-cultural use; it is relevant to Myanmar, with its ethnic diversity. The method is based on scoring responses to three questions that assess the level of hunger over the previous 4 weeks (see the questionnaire in Annex 2). 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),

10 Deitchler, Ballard, Swindale, and Coates. Introducing a Simple Measure of Household Hunger for Cross-Cultural Use. Washington, D.C.: Food and Nutrition Technical Assistance II Project, AED, 2011.



“moderate household hunger” (score 2–3) and “severe household hunger” (score 4–6). To develop this score, a series of questions was asked to the households. This information is presented first, before HHS is presented. For the households that faced food shortages at any time of the year, the impact of this seems to be declining (Table 35 below). This is the case for both LIFT and Control households, and DiD between LIFT and Control households in each case was not significant.

For example, the proportion of households in the 4 weeks before the interview that never faced the problem of not having food of any kind available increased from 89 to 99 percent in LIFT households ( $p < .001$ ), and from 91 to 99 percent for Control households ( $p < .001$ ). Also, the proportion of households over the same time period that never had members who went to sleep at night hungry increased from 93 percent to 99 percent in LIFT households ( $p < .001$ ), and from 94 to 99 percent in Control households ( $p < .001$ ).

The data from all the interviewed households in 2013 indicate that almost no households faced these problems, irrespective of zone, whether they were headed by males or females, income levels, or whether they owned land or not. The proportion of households facing these problems in the past 4 weeks was 2 percent or less.

**Table 35: Information for HHS (n=2,893)**

In the past 4 weeks	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
<b>Was there any time when there was no food to eat of any kind in your household?</b>							
Never	88.6	98.5	9.9***	91.3	99	7.7***	2.2
Rarely or sometimes	10.2	1.1	-9.1***	7.5	1	-6.5***	-2.6
Often	1.2	.4	-.8*	1.2	0	-1.2*	.4
<b>Did you or any member of your household go to sleep at night hungry?</b>							
Never	92.8	98.6	6.4***	93.9	98.8	5.4***	1
Rarely or sometimes	6.3	1.2	-5.6***	4.4	1.2	-3.5**	-2.1
Often	1	.2	-.7*	1.7	0	-2**	1.3
<b>Did you or any member of your household go a whole day and night without eating?</b>							
Never	96.6	99.7	3.3***	96.9	99.7	3.2***	.1
Rarely or sometimes	3.3	.2	-3.2***	2.9	.3	3**	-2
Often	.1	.1	0	.2	0	-.3	-.3
<b>2013 data: Based on all 3,200 households interviewed in that year</b>							
<b>By zone and comparison between male- and female-headed households</b>							
In the past 4 weeks	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total	
<b>Was there any time when there was no food to eat of any kind in your household?</b>							
Never	98.9	99.3	98.8	99.1	98.8	99	

Rarely or sometimes	1	.5	1	.9	.6	.8
Often	.1	.2	.2	0	.6	.2

**Did you or any member of your household go to sleep at night hungry?**

Never	97.8**	99.3**	99.1**	98.8	98.3	98.7
Rarely or sometimes	2.1**	.6**	.9**	1.2	1.2	1.2
Often	.1	.2	0	0	.5	.1

**Did you or any member of your household go a whole day and night without eating?**

Never	99.6	99.7	99.5	99.6	99.5	99.6
Rarely or sometimes	.3	.2	.5	.4	.2	.3
Often	.1	.1	0	0	.3	.1

**By average household income and landownership**

	<50,000	50,000–100,000	>100,000	Own land	No land	Total
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**Was there any time when there was no food to eat of any kind in your household?**

Never	98.4*	99.1*	99.8*	99.3*	98.6*	99
Rarely or sometimes	1.2*	.9*	.1*	.6	1.1	.8
Often	.4	0	.1	.1	.3	.2

**Did you or any member of your household go to sleep at night hungry?**

Never	98.3	99.1	98.8	99.1*	98.1*	98.7
Rarely or sometimes	1.5	.9	1.1	.8*	1.7*	1.2
Often	.2	0	.1	.1	.1	.1

**Did you or any member of your household go a whole day and night without eating?**

Never	99.6	99.7	99.6	99.9**	99.3**	99.6
Rarely or sometimes	.4	.3	.3	.1**	.7**	.3
Often	.1	0	.1	.1	.1	.1

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

HHS as indicated in Table 36 indicates that, overall, the communities partaking in the surveys are not food insecure. This is despite the fact that the surveys took place just before the main monsoon harvest, the time of the year most likely to have food shortages.

In fact, the problem of food shortage decreased from the first to the second surveys. The proportion of households with little or no hunger increased from 93 to 99 percent among LIFT households ( $p < .001$ ), and from 94 to 99 percent of Control households ( $p < .001$ ). Given that the improvement took place in both types of households, DiD was not significant.

Nearly all the households interviewed in 2013 had little to no hunger whether they were in different zones, headed by males or females, had different average incomes, or owned land or not. For each category, the proportion without hunger was 99 percent or more. Nevertheless, hunger was slightly but significantly greater among poorer and landless households.

**Table 36: HHS (n=2,893)**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
<b>Little to no hunger in the household</b>	92.6	99.1	6.5***	94.2	99.3	5.1***	1.4
<b>Moderate hunger in the household</b>	6.3	.7	-5.6***	4.6	.7	-3.9***	-1.7
<b>Severe hunger in the household</b>	1.1	.2	-.9*	1.2	0	-1.2*	.3

2013 data: Based on all 3,200 households interviewed in that year

By zone and comparison between male- and female-headed households						
	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total
<b>Little to no hunger in the household</b>	99.2	99.5	99.3	99.4	99.1	99.3
<b>Moderate hunger in the household</b>	.7	.3	.7	.6	.5	.6
<b>Severe hunger in the household</b>	.1	.2	0	0**	.5**	.1

By average household income and landownership						
	<50,000	50,000–100,000	>100,000	Own land	No land	Total
<b>Little to no hunger in the household</b>	98.9*	99.6*	99.6*	99.7*	98.9*	99.3
<b>Moderate hunger in the household</b>	1	.4	.3	.3*	1*	.6
<b>Severe hunger in the household</b>	.2	0	.1	.1	.1	.1

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

#### 4.6.5. Coping strategies

Households experiencing food shortages have coping strategies. For example, they could change their diet by reducing the size or number of meals eaten in a day, eat cheaper or less-preferred foods, or switch to wild foods that they could gather. The use of these strategies is presented in Table 37. A second type of strategy is to change behaviours to ensure more food is available, such as by selling off family resources, borrowing money, or taking a child out of school to earn money. The use of these strategies is presented in Table 38.

Reviewing these strategies suggests that the LIFT programme is having an impact on the lives of the communities in which it works. The proportion of LIFT households that never had to reduce the size or number of meals in the past 4 weeks increased from 74 to 94 percent ( $p < .001$ ). During the same period, the proportion of Control households never doing this increased from 82 to 94 percent ( $p < .001$ ). Although the proportion of households never needing to do this increased significantly in both types of households, the change in LIFT

households was greater, and DiD between LIFT and Control households was also significant ( $p < .05$ ).

Also, the proportion of households that never had to change their diet to cheaper or less-preferred foods, in order to have enough to eat, increased significantly. Among LIFT households, the proportion increased from 38 to 66 percent ( $p < .001$ ) and the increase in the Control households was from 52 to 66 percent ( $p < .001$ ). The change among LIFT households was so great that DiD between the LIFT and Control households was significant ( $p < .001$ ).

There was also a significant statistical change in the proportion of households that did not have to eat wild foods more frequently than usual in order to have enough food to eat. This was the case for both LIFT and Control households; however, there was no significant DiD between both types of households. The proportion of LIFT households never eating such foods in the 4 weeks prior to the survey was 89 percent; this rose to 98 percent in 2013 ( $p < .001$ ). Among Control households, the proportion of households not needing to eat these foods more frequently rose from 93 to 99 percent ( $p < .001$ ).

For all the households interviewed in the 150 LIFT and 50 Control villages in 2013, there were important differences between the three agro-ecological zones, the income of the household, and whether they owned land or not. Households in the Hilly and Dry zones were less likely to have changed their diet to cheaper or less-preferred foods in order to have enough to eat, compared to those in the Coastal/Delta zone. In the first two mentioned zones, over 74 percent of households never did this, compared to under 59 percent of households in the Coastal/Delta zone ( $p < .001$ ). Richer households and those owning land were less likely to need to make changes to their diet, compared to poorer households and those not owning land. There were no significant differences between male- and female-headed households and the strategies they used in changing their diets.

**Table 37: Engage in strategies by changing the diet (n=3,328)**

In the past 4 weeks	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
<b>Did your family reduce the size and/or number of meals eaten in a day because there was not enough food to eat?</b>							
Never	74.4	94.2	19.8***	81.6	93.9	12.3***	7.5*
Rarely or sometimes	21	5.1	-15.9***	12.3	5.9	-6.4**	-9.5***
Often	4.7	.7	-4***	6.1	.2	-5.9***	1.9*
<b>Did your family change the family diet to cheaper or less-preferred foods in order to have enough food to eat?</b>							
Never	38.2	66.1	27.9***	52.3	66.1	13.8***	14.1***
Rarely or sometimes	41.1	27.8	-13.3***	31.7	29	-2.7	-10.6*
Often	20.7	6.2	-14.5***	16	4.9	-11.1***	-3.4
<b>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?</b>							

Never	89	97.5	8.5***	92.7	98.8	6.1***	2.4
Rarely or sometimes	8.1	2.4	-5.7***	6.1	1.2	-4.9***	-8
Often	2.9	.1	-2.8***	1.2	0	-1.2*	-1.6

**2013 data: Based on all 3,200 households interviewed in that year**

**By zone and comparison between male- and female-headed households**

	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total
<b>Did your family reduce the size and/or number of meals eaten in a day because there was not enough food to eat?</b>						
Never	93***	97.1***	94.2***	94.7	95.2	94.8
Rarely or sometimes	6.6***	2.4***	5.4***	5	4	4.8
Often	.4	.5	.4	.3	.8	.4

**Did your family change the family diet to cheaper or less-preferred foods in order to have enough food to eat?**

Never	77.1***	74.1***	59.2***	69.9	71.3	70.2
Rarely or sometimes	22.3***	20***	32.7***	25.3	23.6	24.9
Often	.6***	6***	8.1***	4.8	5.1	4.9

**Did your family eat wild food (e.g., berries, fruits, roots, leaves, insects, small animals, etc.) more frequently than usual in order to have enough food to eat?**

Never	97.7**	99.4**	97.3**	98.2	98	98.2
Rarely or sometimes	2.2***	.2***	2.7***	1.7	1.7	1.7
Often	.1	.4	0	.1	.3	.2

**By average household income and landownership**

	<50,000	50,000–100,000	>100,000	Own land	No land	Total
<b>Did your family reduce the size and/or number of meals eaten in a day because there was not enough food to eat?</b>						
Never	92.3***	95.3***	97.5***	95.9**	93.2**	94.8
Rarely or sometimes	6.9***	4.6***	2.1***	3.8**	6.1**	4.8
Often	.8*	.1*	.4*	.2*	.7*	.4

**Did your family change the family diet to cheaper or less-preferred foods in order to have enough food to eat?**

Never	59.6***	69.6***	86.1***	76.3***	61.8***	70.2
Rarely or sometimes	32.2***	26.6***	12.1***	20.6***	30.8***	24.9
Often	8.2***	3.9***	1.8***	3***	7.4***	4.9

**Did your family eat wild food (e.g., berries, fruits, roots, leaves, insects, small animals, etc.) more frequently than usual in order to have enough food to eat?**

Never	97.1***	98.3***	99.5***	98.4	97.8	98.2
Rarely or sometimes	2.7**	1.7**	.4**	1.4	2.1	1.7
Often	.3	.1	.1	.2	.1	.2

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

For both LIFT and Control households the proportion making sacrifices to ensure sufficient food had declined significantly from Round 1 to Round 2 of the survey (Table 38 below). However, there was no statistical result in DiD between LIFT and Control households for these behaviours, suggesting that, to date, there was no measureable impact on this by the LIFT programme.

The proportion of households that had a child or children discontinuing school to save money or to work to bring in additional resources so that there was enough food, declined from 10 to 3 percent among LIFT households ( $p < .001$ ). The change among Control households was from 8 to 3 percent ( $p < .001$ ). The proportion of households that had to decrease money spent on health or medicines so that they had enough food to eat fell from 21 to 15 percent for LIFT households ( $p < .001$ ), and from 16 to 13 percent for Control households (not significant). The need to borrow money from money lenders, loans associations, banks, traders, or shopkeepers to buy enough food to eat fell from 53 to 48 percent among LIFT households ( $p < .05$ ), while the change was not significant for Control households.

Those pawning or exchanging any of their household assets to buy enough food fell from a quarter of LIFT households to 19 percent ( $p < .001$ ). The decline in Control households was from 21 to 16 percent ( $p < .05$ ). The proportion selling or consuming their own livestock to ensure they had enough to eat fell from 23 to 14 percent among LIFT households ( $p < .001$ ), and from 17 to 11 percent among Control households ( $p < .005$ ). Finally, the proportion of LIFT households selling, mortgaging, or renting any of their land to have enough food to eat fell from 5 to 3 percent over the two surveys ( $p < .005$ ). The fall in Control households was from 6 to 3 percent ( $p < .05$ ).

All these are positive changes suggest that rural families are finding it easier to ensure there is sufficient food. It also indicates large numbers of families still need to make sacrifices to ensure that they and their children gain enough to eat.

**Table 38: Did any member of your household have to do any of the following activities so that you had enough food to eat? (n=3,328)**

In the past 12 months	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
Sell off (or consume) seeds meant for planting next season's crops?	7.5	7.5	0	5.2	8.2	3*	-3
Use savings?	12.7	15.1	2.4	12.5	16	3.5	-1.1
Did one or more children from your household discontinue school to save money or work to bring in additional income?	9.9	3.3	-6.6***	8.3	2.6	-5.7***	-9
Decrease money spent on health or medicines?	20.9	14.8	-6.1***	16.3	12.7	-3.6	-2.5

Borrow food or money for food from relatives, friends, or neighbours?	52.4	48.4	-4	51.7	49.5	-2.2	-1.8
Borrow money from money lenders, loans associations, banks, traders, or shopkeepers?	53.1	48.4	-4.7*	50.9	45.5	-5.4	.7
Sell, pawn, or exchange any of the household's assets, including tools, equipment, or any other possessions?	24.5	18.8	-5.7**	20.8	16.3	-4.5*	-1.2
Sell or consume more of your livestock than usual (e.g., cattle, goats, chicken, ducks, pigs, buffalo)?	23.3	14.2	-9.1***	17.4	11.1	-6.3**	-2.8
Sell, mortgage, or rent any of your land?	5.1	2.8	-2.3**	5.9	3	-2.9*	.6

**2013 data: Based on all 3,200 households interviewed in that year**

**By zone and comparison between male- and female-headed households**

	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total
<b>Sell off (or consume) seeds meant for planting next season's crops?</b>	8.1***	9.3***	4.2***	7.3	6.8	7.2
<b>Use savings?</b>	20***	10.6***	14.2***	15.3	13.4	14.9
<b>Did one or more children from your household discontinue school to save money or work to bring in additional income?</b>	2.5	3.3	3.1	3.2	2.2	3
<b>Decrease money spent on health or medicines?</b>	14.7*	10.7*	14.8*	12.9	15.5	13.4
<b>Borrow food or money for food from relatives, friends, or neighbours?</b>	40.1***	49.2***	54.5***	48.5	45.7	47.9
<b>Borrow money from money lenders, loans associations, banks, traders, or shopkeepers?</b>	40.9***	48.8***	50.6***	47.3	44.3	46.7
<b>Sell, pawn, or exchange any of the household's assets, including tools, equipment, or any other possessions?</b>	5.4***	20.2***	23.8***	16.8	14.9	16.4
<b>Sell or consume more of your livestock than usual (e.g., cattle, goats, chicken, ducks, pigs, buffalo)?</b>	10.7*	14.9*	13.4*	13.6	10.7	13
<b>Sell, mortgage, or rent any of your land?</b>	1.7***	5.4***	3.1***	3.2	4.2	3.4

**By average household income and landownership**

	<50,000	50,000–100,000	>100,000	Own land	No land	Total
<b>Sell off (or consume) seeds meant for planting next season's crops?</b>	5.8	8.3	7.5	10.9***	2.1***	7.2

<b>Use savings?</b>	15.3	14.6	15	15.9	13.6	14.9
<b>Did one or more children from your household discontinue school to save money or work to bring in additional income?</b>	3.5	3.2	1.9	2.1**	4.1**	3
<b>Decrease money spent on health or medicines?</b>	17.3***	12.2***	9.8***	12.1*	15.2*	13.4
<b>Borrow food or money for food from relatives, friends, or neighbours?</b>	53.6***	52.3***	32.9***	41.3***	57***	47.9
<b>Borrow money from money lenders, loans associations, banks, traders, or shopkeepers?</b>	53.1***	50.7***	31.4***	42.1***	53.1***	46.7
<b>Sell, pawn, or exchange any of the household's assets, including tools, equipment, or any other possessions?</b>	16.4***	19.1***	12.3***	14.1***	19.6***	16.4
<b>Sell or consume more of your livestock than usual (e.g., cattle, goats, chicken, ducks, pigs, buffalo)?</b>	13.7*	14.5*	9.8*	12.3	14.1	13
<b>Sell, mortgage, or rent any of your land?</b>	3.8	3.6	2.5	4.2**	2.3**	3.4

\*p-value < 0.05, \*\*p-value <0.005, \*\*\*p-value <0.001

Table 38 (above) shows important differences between households in the three agro-ecological zones, with different income levels and between those owning land and those which were landless, and whether they had to make sacrifices to ensure their household had enough to eat, as based on all interviewed households in 2013. There were no significant differences between male- and female-headed households.

A greater proportion of households in the Coastal/Delta zone compared to households in the other two zones were forced to borrow food or money from relatives and friends; to borrow from money lenders, loan associations, banks, traders, or shopkeepers; and to sell, pawn, or exchange any household item so that the household had enough to eat. Nevertheless, these Coastal/Delta zone households were the least likely to sell off seeds meant for planting next season's crops in order to have enough to eat ( $p < .001$  for all categories).

Also, in 2013, poorer households and those without land were more likely to do this to ensure that there was enough to eat. The one exception to this was that 11 percent of households owning land were forced to sell seeds for next season's crop, compared to 2 percent of those without land ( $p < .001$ ).

#### 4.6.6. Comparison of food availability over the past 12 months

An indication that the LIFT programme is having an impact on the communities that it is working with is that the LIFT households surveyed indicated in greater numbers that their household food availability had increased from the first to the second survey (Table 39). In



the first survey, 14 percent said that their food availability has increased from the year before, but in the second survey those indicating this had increased to 23 percent ( $p < .001$ ). No such statistical change occurred in the Control households, making DiD between the two types of households significant ( $p < .005$ ).

**Table 39: Comparison of household food availability from all sources in the past 12 months with the previous year (n=3,328)**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
<b>Increased</b>	13.6	23	9.4***	12.2	13.5	1.3	8.1**
<b>Same as previous year</b>	52.3	53	-.7	59.9	60.4	.5	.2
<b>Decreased</b>	33.4	23.3	-10.1***	27.6	25.9	1.7	-8.4**

**2013 data: Based on all 3,200 households interviewed in that year**

<b>By zone and comparison between male- and female-headed households</b>						
	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total
<b>Increased</b>	24.1***	14.2***	21.2***	20.5	17.2	19.8
<b>Same as previous year</b>	58.5***	63.2***	47.3***	55.8	58.7	56.4
<b>Decreased</b>	17.4***	20.1***	31.4***	22.7	23.8	22.9

<b>By average household income and landownership</b>						
	<50,000	50,000–100,000	>100,000	Own land	No land	Total
<b>Increased</b>	17.2***	18.4***	25.8***	21	18.2	19.8
<b>Same as previous year</b>	54.3	56.8	58.6	59.1***	52.6***	56.4
<b>Decreased</b>	28***	23.6***	14.6***	19.1***	28.2***	22.9

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

For all interviewed households in 2013 from the 150 LIFT and 50 Control villages, a greater proportion in the Hilly zone perceived that their household food availability had increased from the previous year, compared to the other two zones. This was the case for 24 percent in the Hilly zone, 21 percent in the Coastal/Delta zone, and 14 percent in the Dry zone ( $p < .001$ ). Over a quarter of households with an average monthly income of more than 100,000 kyat indicated that their household food availability had increased, compared to 18 percent or less for the other two income groups ( $p < .001$ ). There were no significant differences for households headed by men or women. Based on landownership, there was no significant difference in those perceiving an increase in food availability. However, there was one for those perceiving a decrease in food availability over the previous year. Twenty-eight percent of households without land perceived a decreased availability of food, compared to 19 percent of those with land ( $p < .001$ ).

Overall, FGDs support the above conclusions regarding the increase in availability of food and dietary diversity. However, as expected, this varied between geographical locations and also between households. For example, in the Dry zone, farmers reported the following:

“Food is sufficient after LIFT came because the new method of paddy planting is successful and the farm lands are better than before”.

However, some participants in FGDs from the non-agricultural sector and from poorer households reported the following:

“... half of the villagers face insufficient food [and that] food is rare from May to August with no change in food self-sufficiency [since the LIFT intervention]. People have already endured food insufficiency for three years” (Dry zone).

The situation in the Hilly zone varied between villages. For example, in one village food security appears to have declined during the previous 3 years. Those engaged in agriculture reported the following:

“Food is not enough for the whole village at all. Compared to the past three years, this year is worse than the previous years and the food is not enough even to feed pigs and chicken”.

Those from poor households stated the following:

“Many families usually do not have enough food. [However], this year (2013) is better than the last three years. Shortage of food is from April to August” (Hilly zone).

Among those indicating that there was a decline in food availability in the Hilly zone, the reasons that they gave were climate change, a decrease in the quality of soil and large population. However in other villages in the same zone, the situation was quite different with both agricultural workers and casual labourers reporting an improvement in food availability:

“Using the method of new technology increases the production. Therefore people do not need to buy rice. They can eat their rice fully with meat”.

“The casual workers’ incomes have increased because they get more jobs than before and they are getting enough food—more than before” [from a vulnerable men’s FGD].

“Nowadays, most households do not need to worry about food. Only two to three out of ten households have difficulties in accessing food. These families tend to be families of old persons”.

FGD participants in the Coastal/Delta zone were more negative about their food security. In one village, most of the casual workers did not have enough food for their households:

“Rich and medium [middle class] people have enough food for their households but casual workers do not”.

The decline in natural resources such as fish stocks was mentioned as a key reason, as well as a lack of job opportunities. In another village, farmers reported an improvement in food security as a result of increase in paddy prices, but casual workers were still struggling, as they had “just enough food to survive” (Coastal/Delta zone). A casual worker stated:

“... we do not buy food for the future. If there is no money to buy food, we borrow from others” (Coastal/Delta zone).

## 4.7. Access to land for agriculture

### 4.7.1. Land ownership

Land is one of, if not 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. For both LIFT and Control households, by the second survey only slightly over half of them owned land (Table 40). The average size for LIFT households was over four acres and for Control households, the average size was smaller, being slightly over three acres. Between the first and second survey there was no statistical significant increase in the number of households owning land and in the average size of that land.

There were two significant changes in the use of land between the two surveys. The proportion of LIFT households irrigating their land increased from 7 to 11 percent ( $p < .005$ ), while there was no significant change among Control households. DiD between the two types of households was significant ( $p < .05$ ). Given that one of the LIFT partners—Proximity Designs—provided foot pumps on credit for irrigation with training and that they have reached over 10,000 households, it would suggest their intervention is having an impact on farming practices within LIFT communities.

The second significant change in land usage was that the proportion of LIFT households growing crops at the time of the survey increased from 46 to 54 percent ( $p < .001$ ), while no significant change took place among Control households. Despite this, DiD between the LIFT and Control households was not significant.

**Table 40: Land ownership (in acres) and usage (n=3,328 unless stated)**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
<b>Own land</b>	48.9	52.5	3.6	58.2	55.9	-2.3	5.9
<b>Average size of land owned</b>	4.3	4.1	-2	3.3	3.2	-1	-1
<b>Proportion of households leasing out any land at present (n=1,103 for LIFT and 657 Control households)</b>	10.2	10.9	.7	8.1	7.5	-.6	1.3
<b>Average size of land being leased (n=116 for LIFT and 51 for Control villages)</b>	9.4	6.6	-2.8	3.7	5	1.3	-4.1

Proportion of households renting land for agriculture (in cash)	3.5	4.3	.8	3.3	2.8	-.5	1.3
Proportion of households renting land for agriculture (in-kind)	1.9	2.5	.6	1.9	1.2	-.7	1.3
Proportion of households share-farming	2.8	2.8	0	2.8	2.3	-.5	.5
Proportion of households cultivating free land	1.9	3	1.1	2.8	3.8	1	.1
Proportion of households growing crops at present	45.5	53.5	8***	49.3	54.5	5.2	2.8
Average size of land households are cultivating (n=1,114 for LIFT and 649 for Control villages)	7	7.1	.1	4.9	5.1	.2	-.1
Proportion of households irrigated their land	7.1	11.3	4.2**	8.5	8.7	.2	4*
Average size of irrigated land (n=200 for LIFT and 99 for Control villages)	6.4	5.6	-.8	3.5	3.3	-.2	-.6

2013 data: Based on all 3,200 households interviewed in that year

By zone and comparison between male- and female-headed households

	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total
Own land	75.6***	63.5***	34***	57.6	58.6	57.8
Average size of land owned	3.2**	3.8**	4.5**	3.9	3.5	3.8
Proportion of households leasing out any land at present (n=1,850)	5.1***	9.5***	11.4***	6.9**	11.9**	7.9
Average size of land being leased (n=147)	2.9***	3.1***	11.6***	5.6	4.9	5.4
Proportion of households renting any land for agriculture (in cash) (n=2,300)	6***	4.1***	2.5***	4.5	3	4.2
Average size of land being rented (in cash) (n=134)	2.4***	2.1***	8.4***	3.5	3.4	3.5
Proportion of households renting any land for agriculture (in-kind) (n=2,300)	1.8	1.4	2	2*	.6	1.7
Average size of land being rented (in-kind) (n=55)	3.1**	2.5**	10.1**	5.5	7	5.6
Proportion of households share-farming another person's land (n=2,300)	2.6**	.9**	3.2**	2.6*	.6*	2.3

<b>Average size of land that you are share-farming (n=72)</b>	2.8***	2.7***	8.5***	5.4	6.1	5.5
<b>Proportion of households cultivating any land provided free of charge (n=2,300)</b>	7.4***	.8***	.7***	3.2	2.2	3
<b>Average size of land that you are farming free of charge (n=95)</b>	1.6*	2.3*	5.3*	2	2.1	2
<b>Proportion of households growing crops at present (n=2,300)</b>	76.5***	59.2***	34.9***	58.3**	52**	57
<b>Average size of land your household is cultivating at present (n=1,824)</b>	3.4***	4.8***	12.5***	6*	4.7*	5.8
<b>Proportion of households irrigated their land</b>	13.1***	7.6***	14.6***	12.4*	9*	11.8
<b>Average size of irrigated land</b>	2.2***	2.4***	7.9***	4.9*	3.1*	4.6

**By average household income and landownership**

	<50,000	50,000–100,000	>100,000	Own land	No land	Total
<b>Own land</b>	52.3***	55***	70***	-	-	57.8
<b>Average size of land owned</b>	1.9***	3.3***	7.5***	6.7***	0***	3.8
<b>Proportion of households leasing out any land at present (n=1,850)</b>	6.6	8.9	8.2	7.9	7.9	7.9
<b>Average size of land being leased (n=147)</b>	4.9	4.2	7.6	5.4	5.4	5.4
<b>Proportion of households renting any land for agriculture (in cash) (n=2,300)</b>	3.6**	3.2**	6.5**	4.2	4.1	4.2
<b>Average size of land being rented (in cash) (n=134)</b>	2.5*	2.3*	5.2*	3	4.1	3.5
<b>Proportion of households renting any land for agriculture (in-kind) (n=2,300)</b>	1.2	2.2	1.6	1.1**	2.5**	1.7
<b>Average size of land being rented (in-kind) (n=55)</b>	5.1	5.8	5.8	4.3	6.4	5.6
<b>Proportion of households share-farming another person's land (n=2,300)</b>	1.7	2.1	3.3	2.1	2.5	2.3
<b>Average size of land that you are share-farming (n=72)</b>	2.6**	4.7**	8.3**	5.7	5.3	5.5
<b>Proportion of households cultivating any land provided free of charge (n=2,300)</b>	5.2***	1.9***	1.5***	2.3*	3.9*	3
<b>Average size of land that you are farming free of charge (n=95)</b>	1.4	3.1	2.4	2.3	1.7	2
<b>Proportion of households growing crops at present (n=2,300)</b>	52.2***	53***	70.1***	89.9***	11.9***	57
<b>Average size of land your household is cultivating at present (n=1,824)</b>	2.9***	5.3***	9.4***	5.9*	4.1*	5.8

<b>Proportion of households irrigated their land</b>	7.2***	10.2***	20.6***	18.9***	1.9***	11.8
<b>Average size of irrigated land</b>	1.9***	3.8***	6.5***	4.8*	2.4*	4.6

\*p-value < 0.05, \*\*p-value <0.005, \*\*\*p-value <0.001

Data from all the households interviewed in 2013 show that land ownership was greatest amongst households in the Hilly zone, with over three-quarters of them having land, followed by Dry zone households (64 percent) and Coastal/Delta zone households (34 percent) ( $p < .001$ ). There was no significant difference between male- and female-headed households and landownership, with just under 60 percent of both types of households owning land. For the three income groups, 52 percent of households with an average monthly income of less than 50,000 kyat owned land. This compares with 55 percent of households with an average income of 50,000– 100,000 kyat, and 70 percent of those households earning more than 100,000 kyat ( $p < .001$ ).

#### 4.8. Crop production

There was no statistically significant change in the proportion of both LIFT and Control households growing crops in the past 12 months, from the first to the second survey (Table 41). Nevertheless, more households grew a crop in the past 12 months, with around 55 percent of them doing so in the second data round, compared to the first round when around half of them produced a crop.

Nor was there any significant change in the proportion of households growing crops in the previous monsoon season. The proportion of households that grew crops in the previous monsoon season was around 50 percent for both LIFT and Control households in both data collection rounds.

Further, there was no statistical change in the proportion of households that grew crops after the last monsoon season. The proportion of households producing this crop was around a quarter of all LIFT and Control households in both data rounds.

Although there was no statistically significant change between LIFT and Control households from the first to the second surveys in producing crops, there were important differences ( $p < .001$ ) between the three agro-ecological zones, between the three income groups and between those with land and those without, as based on all of the interviewed households from the 150 LIFT and 50 Control villages. Households from the Hilly zone were the most likely to have grown crops in the past 12 months, and to have grown crops in the previous monsoon season, while it was households in the Coastal/Delta zone that were least likely to have grown crops during these times ( $p < .001$ ). Households with an average monthly income of over 100,000 kyat and those households owning land were far more likely to have grown crops in the previous 12 months and in the previous monsoon season compared to those earning less money and those without land ( $p < .001$ ).

**Table 41: Proportion of households producing crops (n=3,328)**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
<b>Grew annual crops in the past 12 months</b>	51.7	55.4	3.7	54.7	54.5	-.2	3.9
<b>Grew crops in the previous monsoon season</b>	48.7	49.9	1.2	49.7	51.4	1.7	-5
<b>Grew other crops after the last monsoon season</b>	23.1	25.5	2.4	23.6	23.6	0	2.4

2013 data: Based on all 3,200 households interviewed in that year

By zone and comparison between male- and female-headed households						
	Hilly	Dry	Coastal	Male headed	Female headed	Total
<b>Grew annual crops in the past 12 months</b>	78.2***	60.9***	35.5***	59.5*	53.7*	58.3
<b>Grew crops in the previous monsoon season</b>	75.2***	52.8***	32.7***	55**	48.3**	53.7
<b>Grew other crops after the last monsoon season</b>	39.5***	66.9***	45.1***	50.1	50.6	50.2

By average household income and landownership						
	<50,000	50,000–100,000	>100,000	Own land	No land	Total
<b>Grew annual crops in the past 12 months</b>	53.6***	54.2***	71.5***	91.8***	12.4***	58.3
<b>Grew crops in the previous monsoon season</b>	49.9***	49.1***	66.3***	85.3***	10.3***	53.7
<b>Grew other crops after the last monsoon season</b>	47.3*	48.3*	55.6*	51.9***	33.3***	50.2

\*p-value < 0.05, \*\*p-value <0.005, \*\*\*p-value <0.001

#### 4.8.1. The five major crops grown in the previous monsoon season

Comparing the LIFT and Control households in the crops that they grew in the previous monsoon season, there was one significant DiD, and that was for corn/maize (p<.05) (Table 42). There was no significant change in either LIFT or Control households producing this crop. However, in LIFT households fewer produced this crop and in Control more households did so, creating the significant DiD.

There was no significant DiD between the two types of households and the average size of land given to produce these five main crops, and no such difference for output, either. There were significant declines in the production of corn/maize, pigeon pea, and groundnut, but this was the case in both LIFT and Control households.

However, based on the data from all the households interviewed in 2013, there were important differences between households in the three agro-ecological zones, between male- and female-headed households, between the three income groups and between those with and those without land. One third of Coastal/Delta households grew paddy, rice, and/or sticky rice, compared to 20 percent of household in the Hilly zone, and 11 percent of Dry zone households ( $p < .001$ ). Nearly all the corn, the second-most important crop, was grown in the Hilly zone, while nearly all the sesame seed was produced in the Dry zone. In the same zone, nearly all the pigeon pea and groundnuts were also produced. The difference between the households in the three zones in growing these five crops was statistically significant at the  $p < .001$  level. In terms of the top five crops grown, there was one difference between male- and female-headed households. This was for paddy; 22 percent of male-headed households grew this crop, compared to 16 percent of female-headed households ( $p < .005$ ). Households earning more than 100,000 kyat per month were more likely to be growing paddy, rice and/or sticky rice, and corn and maize than households earning less than this ( $p < .001$ ). Further, their average area planted and harvested was also greater than that of households earning less ( $p < .001$ ). Households owning land were far more likely to be growing each type of crop ( $p < .001$ ), to have a larger average area planted for each crop, and to have harvested more for each crop compared to those households without land ( $p < .001$ ).

**Table 42: The five major crops grown in the previous monsoon season (n=3,328)**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
<b>The proportion of households producing the five most important crops in the previous monsoon season</b>							
<b>Paddy, rice, and/or sticky rice</b>	20.4	23.9	3.5	20.1	20.5	.4	3.1
<b>Corn, maize</b>	14.4	12	-2.4	5	7.6	2.6	-5*
<b>Sesame seed</b>	4.5	4.2	-.3	5.4	6.4	1	-1.3
<b>Pigeon pea</b>	3.2	1.3	-1.9**	7.5	4.3	-3.2*	1.3
<b>Groundnut</b>	3.1	2.4	-.7	4.2	1.2	-3**	2.3
<b>Average area planted (in acres)</b>							
<b>Paddy, rice, and/or sticky rice</b>	2.26	2.4	.14	1.27	1.34	.07	.07
<b>Corn, maize</b>	.39	.43	.04	.12	.15	.03	.01
<b>Sesame seed</b>	.16	.17	.01	.16	.25	.09	-.08
<b>Pigeon pea</b>	.11	.01	-.1**	.33	.14	-.19*	.09
<b>Groundnut</b>	.21	.01	-.2*	.23	.01	-.22*	.02
<b>Average harvested—all units are baskets</b>							
<b>Paddy, rice, and/or sticky rice</b>	101	89.4	-11.6	34.2	46	11.8	-23.4
<b>Corn, maize</b>	84	14.6	-69.4**	44.2	3.9	-40.3*	29.1



Sesame seed	1.5	.8	-.7	.7	.7	0	-.7
Pigeon pea	4.3	.1	-4.2**	6.5	.7	-5.8**	1.6
Groundnut	13.1	.6	-12.5	4.7	.9	-3.8*	-8.7

2013 data: Based on all 3,200 households interviewed in that year

By zone and comparison between male- and female-headed households

	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total
<b>The proportion of households producing the five most important crops in the previous monsoon season</b>						
Paddy, rice, and/or sticky rice	20***	10.8***	32.6***	22.3**	16.1**	21.1
Corn, maize	38.5***	.5***	0***	13.5	11.2	13.1
Sesame seed	.2***	18.2***	0***	5.8	7.6	6.2
Pigeon pea	.4***	7.5***	0***	2.3	3.7	2.6
Groundnut	2.5***	6.2***	0***	3	2.6	2.9

Average area planted (in acres)

Paddy, rice, and/or sticky rice	.42***	.3***	4.11***	1.78**	.89**	1.6
Corn, maize	1.35***	0***	0***	.49*	.3*	.45
Sesame seed	0***	.84***	0***	.25*	.41*	.28
Pigeon pea	0***	.3***	0***	0	.16	.1
Groundnut	0***	.28***	0***	.11	0	.1

Average harvested—all units are baskets

Paddy, rice, and/or sticky rice	15***	8.2***	147.9***	62.9**	31.6**	56.6
Corn, maize	47***	.3***	0***	17.1*	10.6*	15.8
Sesame seed	0***	4.4***	0***	1.4	1.9	1.5
Pigeon pea	0***	1.3***	0***	.3*	.9*	.5
Groundnut	.4***	3.6***	0***	1.4	1.2	1.3

By average household income and landownership

	<50,000	50,000– 100,000	>100,000	Own land	No land	Total
<b>The proportion of households producing the five most important crops in the previous monsoon season</b>						
Paddy, rice, and/or sticky rice	16.5***	18.5***	31.5***	32.4***	5.5***	21.1
Corn, maize	12.6***	10.7***	17.4***	20.6***	2.7***	13.1
Sesame seed	5.2	6.5	6.9	10.3***	.4***	6.2
Pigeon pea	1.8	3.3	2.8	4.4***	.2***	2.6
Groundnut	3.4	2.9	2.3	4.9***	.1***	2.9

Average area planted (in acres)

Paddy, rice, and/or sticky rice	.56***	1.27***	3.58***	2.57***	.27***	1.6
Corn, maize	.23***	.35***	.91***	.74***	0***	.45
Sesame seed	.18***	.26***	.47***	.48***	0***	.28
Pigeon pea	0	.13	.13	.17***	0***	.1

<b>Groundnut</b>	.1	.11	.1	.18***	0***	.1
<b>Average harvested—all units are baskets</b>						
<b>Paddy, rice, and/or sticky rice</b>	17***	44.7***	131.4***	89.8***	11.1***	56.6
<b>Corn, maize</b>	6.2***	11.3***	36.5***	26***	1.9***	15.8
<b>Sesame seed</b>	.6***	1.6***	2.6***	2.5***	0***	1.5
<b>Pigeon pea</b>	.4	.4	.6	.8***	0***	.4
<b>Groundnut</b>	1.4	1.3	1.4	2.3***	0***	1.4

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

#### 4.8.2. The five major crops grown in the post-monsoon season

For the post-monsoon season there was no significant DiD between the LIFT and Control households in the proportion growing the five most important crops, nor in the average area planted to these crops (Table 43 below). However, there was such a significant change in garlic production. LIFT households produced less of this crop in the second round (not significant) and Control households produced more (not significant). However, the result was significant DiD ( $p < .05$ ).

Similar to the previous monsoon season, there were important differences in the five major crops grown in the post-monsoon season between households in the three agro-ecological zones, between households with male and female heads, between the three income groups, and between those households owning and not owning land for the 2013 data from all the interviewed households. Households in the Coastal/Delta zone were most likely to produce paddy, rice, and/or sticky rice, with 13 percent doing so, compared to less than 1 percent in the other two zones. All the garlic was produced by households in the Hilly zone. It was the households in the Dry zone that produced most of the groundnut, chickpea, and onions. All of these differences were statistically significant at  $p < .001$  level.

There was one difference between male- and female-headed households for crops grown during this season, and that was for paddy, rice, and/or sticky rice. Five percent of male-headed households grew this crop, compared to 2 percent of female-headed households ( $p < .005$ ).

In 2013, apart from the production of garlic, households with an average monthly income of more than 100,000 kyat were more likely to be involved in the production of crops, more likely to plant a larger average crop, and harvest a greater yield. For garlic, the greatest proportion of households producing this crop were those earning on average less than 50,000 kyat, with 4 percent doing so, compared with 2 percent for those with an average income of between 50,000–100,000 kyat, and 1 percent for those earning more than this ( $p < .001$ ).

Households owning land were more likely to produce each type of crop, the average area they planted was greater, and their average harvested was also greater than those households without land. These differences were significant at the  $p < .001$  level.

**Table 43: The five major crops grown in the post-monsoon season (n=3,328)**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
<b>The proportion of households producing the five most important crops in the post-monsoon season</b>							
<b>Paddy, rice, and/or sticky rice</b>	4	5.2	1.2	3	2.1	-.9	2.1
<b>Groundnut</b>	2.8	4	1.2	3.3	5.2	1.9	-.7
<b>Garlic</b>	1.7	2.2	.5	1	2.1	1.1	-.6
<b>Chickpea</b>	1.1	1.2	.1	3	1.7	-1.3	1.4
<b>Onions</b>	2.5	2.3	-.2	.9	1	.1	-.3
<b>Average area planted (in acres)</b>							
<b>Paddy, rice, and/or sticky rice</b>	.26	.41	.15	.12	.01	-.11	.26
<b>Groundnut</b>	.01	.11	.1	.01	.16	.15*	-.05
<b>Garlic</b>	.01	.01	0	.01	.01	0	0
<b>Chickpea</b>	.01	.01	0	.01	.01	0	0
<b>Onions</b>	.01	.01	0	.01	.01	0	0
<b>How much was harvested (in baskets unless indicated)</b>							
<b>Paddy, rice, and/or sticky rice</b>	16.6	25.5	8.9	7.8	4.8	-3	11.9
<b>Groundnut</b>	1.1	1.7	.6	1	3.4	2.4*	-1.8
<b>Garlic (Viss)</b>	13.5	7.7	-5.8	4.6	18	13.4	-19.2*
<b>Chickpea</b>	.2	.2	0	.3	.3	0	0
<b>Onion (Viss)</b>	59	39.2	-19.8	3.2	5	1.8	-21.6
<b>2013 data: Based on all 3,200 households interviewed in that year</b>							
<b>By zone and comparison between male- and female-headed households</b>							
	<50,000	50,000–100,000	>100,000	Own land	No land	Total	
<b>The proportion of households producing the five most important crops in the post-monsoon season</b>							
<b>Paddy, rice, and/or sticky rice</b>	.3***	.5***	13.4***	5.3**	2.2**	4.7	
<b>Groundnut</b>	.4***	13.2***	1.2***	5	4.8	4.9	
<b>Garlic</b>	7.2***	0***	0***	2.5	2	2.4	
<b>Chickpea</b>	0***	6.1***	0***	2	2	2	
<b>Onions</b>	1.2***	3.9***	0***	1.7	1.7	1.7	
<b>Average area planted (in acres)</b>							
<b>Paddy, rice, and/or sticky rice</b>	0***	0***	1***	.39**	.12**	.33	
<b>Groundnut</b>	0***	.34***	0***	.12	.15	.13	
<b>Garlic</b>	0	0	0	0	0	0	
<b>Chickpea</b>	0	.14	0	0	0	0	

Onions	0	0	0	0	0	0
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**Average harvested—all units are baskets unless stated**

Paddy, rice, and/or sticky rice	.3***	.2***	58.3***	22.8**	6.1**	19.4
Groundnut	0***	6.9***	.5***	2.3	3.3	2.5
Garlic (Viss)	47.4***	0***	0***	18	7.3	15.9
Chickpea	0***	1.1***	0***	.3	.5	.4
Onion (Viss)	11.3***	92.3***	0***	33.8	38.2	34.7

**By average household income and landownership**

	<50,000	50,000–100,000	>100,000	Own land	No land	Total
<b>The proportion of households producing the five most important crops in the post-monsoon season</b>						
Paddy, rice, and/or sticky rice	1.9***	3.9***	9.8***	7.5***	.8***	4.7
Groundnut	4.4	4.6	6.3	8.2***	.5***	4.9
Garlic	3.9***	1.9***	1.1***	3.7***	.6***	2.4
Chickpea	2.3	2.4	1.1	2.8***	.2***	2
Onions	1.5	1.4	2.5	3.4***	.1***	1.7

**Average area planted (in acres)**

Paddy, rice, and/or sticky rice	0***	.25***	.87***	.56***	0***	.33
Groundnut	0***	.11***	.22***	.21***	0***	.13
Garlic	0	0	0	0	0	0
Chickpea	0	0	0	0	0	0
Onions	0	0	0	0	0	0

**Average harvested—all units are baskets**

Paddy, rice, and/or sticky rice	2.5***	13.5***	52.6***	32.4***	1.6***	19.4
Groundnut	1.3**	2.2**	4.4**	4.2***	0***	2.5
Garlic (Viss)	14	9.7	28.2	26.4***	1.4***	15.9
Chickpea	.2	.5	.4	.6***	0***	.4
Onion (Viss)	18.6**	24.7**	73.2**	57.6***	3.3***	34.7

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

Note: A viss is a local unit of measurement and is equivalent to 100 tical. In comparison with international units of measurement, one viss is equivalent to 1.633 kilograms and 3.6 pounds.

Findings from FGDs indicated some changes in the type of crops grown. For example, in the Hilly zone, where farmers received agricultural training from a LIFT implementing partner, they were able to increase production of maize and expand production of other crops:

“Before the training, the farmers planted maize in the orchard as they could get water there. After the training, they planted at the hill-side cultivation. They now grow more bananas, ground nut and sesame than before”.

Growing sugar cane had also increased in the Hilly zone:

“... because a sugar mill has appeared in this region, more people have come to grow sugarcane [and] more people have come to grow maize”.

In the Dry zone, a cotton plantation was also providing additional income, enabling farmers to invest to produce chickpea flour. Previously, they had to borrow seeds to do so and return with interest. There were also examples of farmers being able to grow crops outside the traditional season:

“Farmers now grow summer paddy significantly. There is an increase in paddy production because the implementing partner organization came and taught us the technologies how to grow paddy. Nowadays the farmers are growing summer paddy because of high technologies” (Coastal/Delta zone).

#### 4.8.3. Comparisons of crop production

The respondents were asked to compare their past crops with their average monsoon and average post-monsoon crops. There were no significant increases in the proportion of LIFT and Control households reporting that these two crops were better compared to their average crops (Table 44). However, the proportion of Control households thinking their last monsoon crop was worse than average increased significantly. It rose from 40 to 51 percent ( $p < .05$ ). With no such increase in LIFT households thinking this, DiD between the two types of households was significant ( $p < .05$ ).

Data from all the households interviewed in 2013 reveal that 28 percent of households in the Hilly zone stated that their crop yields during the 2012 monsoon season were better than their average season. In the other two zones, only 19 percent felt this was the case ( $p < .001$ ). There was no significant difference based on the sex of the head of the household. For households earning on average less than 50,000 kyat, 52 percent felt their crop was worse in the 2012 monsoon season compared to their average season. This compared to 45 percent for those with a monthly income of 50,000–100,000 kyat, and 37 percent for those earning more than 100,000 kyat ( $p < .001$ ).

**Table 44: Crop yield comparisons**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
<b>Crop yield compared with your average monsoon season (n=1,634)</b>							
<b>Better</b>	21.9	24	2.1	17.5	20.6	3.1	-1
<b>Same</b>	40.9	34.9	-6*	42.3	28.5	-13.8**	7.8
<b>Worse</b>	37.2	41	3.8	40.2	50.9	10.7*	-6.9*
<b>Crop yield compared with your average post-monsoon crop (n=800)</b>							

<b>Better</b>	23.5	24.2	.7	23.5	22.8	-.7	1.4
<b>Same</b>	42.6	43.7	1.1	33.8	42.6	8.8	-7.7
<b>Worse</b>	33.9	32.1	-1.8	42.6	34.6	-8	6.2

**2013 data: Based on all 3,200 households interviewed in that year**

**By zone and comparison between male- and female-headed households**

	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total
<b>Crop yield compared with your average season for the 2012 monsoon season (n=1,683)</b>						
<b>Better</b>	27.6***	18.9***	19.1***	22.7	23.9	22.9
<b>Same</b>	34.5***	23***	42***	32.3	31.2	32.1
<b>Worse</b>	38.3***	58.6***	38.2***	44.9	44.9	44.9

**Crop yield compared with your average season for the post-monsoon crop in 2013 (n=935)**

<b>Better</b>	22.8	23.8	22.5	24.4	17.8	23.2
<b>Same</b>	47.4**	35.2**	45**	41.1	42	41.3
<b>Worse</b>	29.8**	41**	32.5**	34.4	40.2	35.5

**By average household income and landownership**

	<50,000	50,000–100,000	>100,000	Own land	No land	Total
<b>Crop yield compared with your average season for the 2012 monsoon season (n=1,683)</b>						
<b>Better</b>	22.9	21.6	24.5	23.2	20.1	22.9
<b>Same</b>	25.3***	33.1***	38.1***	31.4*	40.3*	32.1
<b>Worse</b>	51.7***	45.3***	37.4***	45.4	39.6	44.9

**Crop yield compared with your average season for the post-monsoon crop in 2013 (n=935)**

<b>Better</b>	18.2*	28.1*	22.6*	23.2	23.2	23.2
<b>Same</b>	40.2*	36.6*	47.2*	40.6	51.8	41.3
<b>Worse</b>	41.6*	35.3*	30.2*	36.2	25	35.5

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

#### 4.9. Constraints to crop production

Respondents whose households grew crops (monsoon or post-monsoon) were asked in both surveys about the constraints to their crop production (Table 45 below). Multiple responses were recorded.

Between the two surveys, there were important shifts in the relevant importance of the various reasons given for limiting crop production. In the first survey, the two most common constraints were (1) the lack of money to buy the necessary inputs (or lack of credit), and (2) the lack of fertiliser. However, by the second round, these two constraints were less important and had been replaced with poor weather as the most important constraint—possibly reflecting unusual weather conditions in 2013, with a late start to the monsoon season, and then heavy rains and flooding late in the season in some areas.

In Round 1, of those LIFT households growing crops, 27 percent indicated that the lack of money to buy the necessary inputs was a constraint on their farming. This dropped to 12 percent in Round 2 ( $p < .001$ ). A similar drop occurred among Control households, with the proportions indicating this problem falling from 27 to 14 percent ( $p < .001$ ). Among those complaining about the lack of fertilizer, there was a similar significant fall, going from 20 percent to 3 percent in LIFT households ( $p < .001$ ), and from 23 percent to 3 percent in the Control households ( $p < .001$ ). For both of these two factors there was no significant difference in the changes between the two types of households.

Other input constraints for crop production also declined in importance for both LIFT and Control households. The lack of other tools and equipment in the village fell from 7 to under 2 percent for both types of villages ( $p < .001$ ), while the problem of lack of seeds fell from 11 and 9 percent to 1 and 2 percent for the LIFT and Control households, respectively ( $p < .001$ ). Further, the problem of a lack of pesticides in the village fell from 6 to 1 percent in the LIFT households ( $p < .001$ ), and from 9 to 1 percent in the Control households ( $p < .001$ ).

The issues limiting crop production that grew significantly in importance between the two surveys, apart from bad weather (mentioned above), were low prices for crops, the lack of land, shortage of household labour, pests, and soil acidity. These factors affected LIFT and Control households quite differently. The proportion of LIFT households indicating that the lack of land was a problem grew from 5 to 9 percent ( $p < .001$ ), while there was no significant change among Control households for this factor. Given this difference, DiD between the two types of households was significant ( $p < .05$ ).

Among LIFT households, the problem of low crop prices was mentioned by 4 percent in the second round, while 2 percent stated this in the first round ( $p < .001$ ). There was no significant increase in the second round mentioning this in the Control households, which resulted in DiD between the two types of households being significant ( $p < .005$ ).

Two further problems in which DiD between LIFT and Control households were significant ( $p < .05$ ) were the lack of household labour and soil acidity. In both cases, the significant change took place in the Control and not in the LIFT households. The proportion of Control households indicating the lack of household labour being a problem for crop production rose from 6 to 12 percent ( $p < .005$ ), while those indicating soil acidity as being a problem rose from none to over 1 percent ( $p < .05$ ).

**Table 45: Major constraints or problems limiting crop production (n=3,328)**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
<b>Lack of money to buy the necessary inputs (or lack of credit)</b>	27	12.1	-14.9***	26.6	13.9	-12.7***	-2.2
<b>Lack of land</b>	5.3	9.2	3.9***	8.3	7.6	-.7	4.6*

<b>Lack of draught power/ mechanical power in the village</b>	6.7	5.2	-1.5	5	5.7	.7	-2.2
<b>Lack of other tools and equipment in the village</b>	7.1	1.6	-5.5***	6.6	.7	-5.9***	.4
<b>Lack of fertiliser in the village</b>	20.2	2.9	-17.3***	22.6	3.1	-19.5***	2.2
<b>Lack of seeds in the village</b>	10.8	1.2	-9.6***	8.9	1.4	-7.5***	-2.1
<b>Lack of household labour</b>	8.1	9.4	1.3	5.9	11.6	5.7**	-4.4*
<b>Lack of casual labour available locally in the village</b>	9.5	12.2	2.7*	7.8	9.5	1.7	1
<b>Lack of pesticides in the village</b>	6.3	.6	-5.7***	8.5	1	-7.5***	1.8
<b>Lack of knowledge, skills, or experience</b>	.9	.3	-.6	1.9	.7	-1.2	.6
<b>Not interested/grows enough/too risky to grow more</b>	.2	0	-.2	.3	.2	-.1	-.1
<b>Low prices for the agricultural crops grown</b>	1.5	4.2	2.7***	2.3	2.8	.5	2.2**
<b>Bad/unreliable weather (including too little or too much rain)</b>	16.7	26.3	9.6***	19.4	26	6.6*	3
<b>Lack of water resources or irrigation infrastructure</b>	7.9	6.8	-1.1	7.1	6.4	-.7	-4
<b>Crop pests and disease</b>	9.4	12.5	3.1*	9	12	3	.1
<b>Low soil fertility/poor soil structure, etc.</b>	5.9	4.6	-1.3	4.2	6.8	2.6	-3.9
<b>Salinity</b>	.9	2.3	1.4*	.7	1.6	.9	.5
<b>Soil acidity</b>	0	.2	.2	0	1.2	1.2*	-1*

**2013 data: Based on all 3,200 households interviewed in that year**

**By zone and comparison between male- and female-headed households**

	<b>Hilly</b>	<b>Dry</b>	<b>Coastal / Delta</b>	<b>Male headed</b>	<b>Female headed</b>	<b>Total</b>
Lack of money to buy the necessary inputs (or lack of credit)	18.9***	19.8***	6.6***	15.2	14.9	15.2
Lack of land	15.8***	8***	4.9***	9.7	9.2	9.6
Lack of draught power/mechanical power in the village	6.4	4.9	4.9	5.5	5.3	5.4
Lack of other tools and equipment in the village	1***	.2***	3.1***	1.5	1.2	1.4
Lack of fertiliser in the village	5.6***	2***	.9***	2.9	2.6	2.8
Lack of seeds in the village	2.9**	2**	.8**	2	1.4	1.9



Lack of household labour	18.8***	4.9***	5.6***	9.1*	12.4*	9.8
Lack of casual labour available locally in the village	9.8	10.9	11.4	10.4	11.6	10.7
Lack of pesticides in the village	.9	.4	.5	.7	.2	.6
Local labour lack appropriate skills	0	.2	.1	0*	.3*	.1
Lack of knowledge, skills, or experience	1.1	.6	.3	.6	.9	.7
Not interested/grows enough/too risky to grow more	.2	.2	0	.1	.2	.1
Low prices for the agricultural crops grown	4.4**	1.9**	2.7**	3.1	2.3	3
Bad/unreliable weather (including too little or too much rain)	33.2***	45***	10.1***	30.2	26.9	29.5
Lack of water resources or irrigation infrastructure	6.4***	11.7***	2.5***	6.8	7.3	6.9
Crop pests and disease	16.4***	9.2***	10.1***	12.5	9.8	11.9
Low soil fertility/poor soil structure, etc.	12.1***	6.3***	1.8***	6.6	7.5	6.8
Salinity	0***	.6***	3.5***	1.3	1.4	1.3
Soil acidity	.7	.7	.1	.5	.6	.5

#### By average household income and landownership

	<50,000	50,000–100,000	>100,000	Own land	No land	Total
Lack of money to buy the necessary inputs (or lack of credit)	17.2	14.5	13.4	22.9***	4.5***	15.2
Lack of land	13.7***	7.7***	6.8***	5***	15.9***	9.6
Lack of draught power/mechanical power in the village	4.2***	4.8***	8.1***	8.5***	1.3***	5.4
Lack of other tools and equipment in the village	.4***	1.2***	3.3***	2.3***	.2***	1.4
Lack of fertiliser in the village	3	2.5	3	4.4***	.7***	2.8
Lack of seeds in the village	1*	2.3*	2.5*	3.1***	.2***	1.9
Lack of household labour	11.2***	6.7***	12.6***	13.8***	4.2***	9.8
Lack of casual labour available locally in the village	7.2***	9.1***	18.1***	17.6***	1.3***	10.7
Lack of pesticides in the village	.6	.5	.5	.9*	.1*	.6
Local labour lack appropriate skills	0	.1	.3	.2	0	.1
Lack of knowledge, skills, or experience	.4	.8	.8	1.1***	.1***	.7
Not interested/grows enough/too risky to grow more	0	.2	.3	.2	0	.1
Low prices for the agricultural crops grown	2.7	2.5	4	4.7***	.6***	3
Bad/unreliable weather (including too little or too much rain)	28.4**	27.3**	34.6**	46.3***	6.5***	29.5

Lack of water resources or irrigation infrastructure	7.4	7.5	5.1	10.9***	1.4***	6.9
Crop pests and disease	13.8*	10.4*	11.8*	18.4***	3.1***	11.9
Low soil fertility/poor soil structure, etc.	7.1	6.1	7.3	10.2***	2***	6.8
Salinity	.5***	1***	3***	2.1***	.3***	1.3
Soil acidity	.4	.6	.5	.8*	.1*	.5

\*p-value < 0.05, \*\*p-value <0.005, \*\*\*p-value <0.001

Table 45 (above) also shows the differences in major constraints limiting crop production for households in the three agro-ecological zones, for both male- and female-headed households, in the three income groups, and for the households owning land or not, as based on data from all the households interviewed in 2013. A significantly greater proportion of households in the Hilly zone than the other two zones indicated that their problems included a lack of land, a lack of fertilizer, a lack of seeds, a lack of household labour, low prices for their crops, pests and disease, and low soil fertility. For households in the Dry zone, a greater proportion compared to the other zones indicated that they lacked money to buy the necessary inputs, and suffered from bad/unreliable weather. A greater proportion of households in the Coastal/Delta zone compared to the other two zones indicated that they lacked tools and equipment, and faced problems of salinity. All these differences were statistically significant at  $p < .001$ .

Male- and female-headed households had similar major constraints limiting crop production. However, one difference between the two types of households was the lack of household labour, with 9 percent of male-headed households indicating this was a problem, compared to 12 percent of female-headed households ( $p < .05$ ).

Possibly reflecting the greater involvement of households with a monthly average income of over 100,000 kyat, in agriculture—compared to other households—for most of the listed constraints on crop production, a greater proportion of the richest households indicated such constraints. For example, more of these households indicated that they lacked draught power/mechanical power in their households; lacked other tools and equipment; lacked household labour, lacked casual labour; suffered from bad weather; and faced problems of salinity compared to households from the other two income groups. All these differences were significant at  $p < .001$ . Nevertheless, a greater proportion of households with an income of less than 50,000 kyat indicated they lacked land ( $p < .001$ ) and suffered from pests and disease ( $p < .05$ ).

Apart from the lack of land, in which a greater proportion of landless households than those with land indicated was a problem, for all other constraints to crop production, a greater proportion of those with land indicated they had these problems. The fact that households with land were more likely to list constraints to crop production possibly reflects their greater involvement in agriculture compared with those with no land.

## 4.10. Marketing

A variety of questions related to the marketing of crops was asked in the two questionnaires. Between 2011 and 2013, there was a significant increase in the number of LIFT households selling crops in the past 12 months, increasing from 40 to 45 percent ( $p < .05$ ) (Table 46 below). There was no significant increase in the proportion of Control households selling crops. Nevertheless, DiD between the two types of households was not significant.

The four main crops sold in the surveyed households were as follows: paddy, rice, sticky rice; corn/maize; sesame seed; and groundnut. Between the two surveys, there was no statistically significant change in the selling of these crops both in the LIFT and Control households.

Despite the lack of significant change over the two surveys, 2013 data from all the interviewed households reveal differences between the three agro-ecological zones, between male- and female-headed households, between households with different incomes, and between households owning and not owning land. In the Hilly zone, 60 percent of households sold crops in the past 12 months, compared to 55 percent in the Dry zone, and 33 percent in the Coastal/Delta zone ( $p < .001$ ). Reflecting the crops grown in each zone, of those households which sold a crop, 97 percent of Coastal/Delta zone households sold paddy and rice. Among Hilly zone households that sold crops, just under half sold corn, while in the Dry zone over 20 percent of households sold groundnut and sesame seeds (all differences were  $p < .001$ ).

Half of the male-headed households sold crops in the last 12 months, compared to 45 percent of female-headed households ( $p < .05$ ). Of the households that sold crops, male-headed households were more likely to sell paddy, rice, and/or sticky rice, with 26 percent doing so, compared to 18 percent of female-headed households ( $p < .05$ ). Female-headed households were more likely to sell sesame seeds, with 12 percent selling this crop, compared to 8 percent of male-headed households ( $p < .05$ ).

It was among the households that had the highest average income that were most likely to have sold crops in the last 12 months, with 65 percent of them doing so. This compares with 46 percent or less for the other two income groups ( $p < .001$ ). Unsurprisingly, it was those with land that were more likely to have sold crops in the past year, with nearly 80 percent of such households doing so, compared to 8 percent of those that were landless ( $p < .001$ ).

**Table 46: Proportion of households selling crops in the last 12 months**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
<b>Proportion of households selling crops in the last 12 months (n=3,328)</b>	40.1	45.1	5*	44.1	45.1	1	4

**Proportion of households selling the four main crops (n=1,441)**

<b>Paddy/rice/sticky rice</b>	35.6	39.1	3.5	20.5	24.2	3.7	-2
<b>Corn/maize</b>	15.4	15.7	.3	7.9	11.9	4	-3.7
<b>Sesame seed</b>	9.2	6.1	-3.1	7.9	9.6	1.7	-4.8
<b>Groundnut</b>	8.3	9.4	1.1	10.6	5.8	-4.8*	5.9

2013 data: Based on all 3,200 households interviewed in that year

By zone and comparison between male- and female-headed households

	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total
<b>Proportion of households selling crops in the last 12 months (n=3,200)</b>	59.5***	55***	32.7***	50.2*	45*	49.2
<b>Proportion of households selling the four main crops (n=1,573)</b>						
<b>Paddy/rice/sticky rice</b>	6.6***	2.2***	97.4***	26.3**	18.3**	24.9
<b>Corn/maize</b>	47.2***	.8***	0***	20.2	16.2	19.5
<b>Groundnut</b>	2.8***	23.4***	1.2***	10.3	9.7	10.2
<b>Sesame seed</b>	.6***	22.2***	0***	7.7*	12.4*	8.6

By average household income and landownership

	<50,000	50,000–100,000	>100,000	Own land	No land	Total
<b>Proportion of households selling crops in the last 12 months (n=3,200)</b>	41.6***	46.1***	64.8***	79.1***	8.1***	49.2
<b>Proportion of households selling the four main crops (n=1,573)</b>						
<b>Paddy/rice/sticky rice</b>	13.8***	23.8***	36.1***	24.2*	33.6*	24.9
<b>Corn/maize</b>	15.3**	18.1**	24.7**	19.3	20.9	19.5
<b>Groundnut</b>	11.5	10.9	8.1	10.5	5.5	10.2
<b>Sesame seed</b>	7.7**	11.6**	6**	9	3.6	8.6

\*p-value < 0.05, \*\*p-value <0.005, \*\*\*p-value <0.001

#### 4.10.1. How they sold their crop

The survey respondents were asked about the marketing of their main crop, whether they sold their crops by themselves, as a group or collective, or in combination by selling part of their crop by themselves and part through a group. Based on the survey results, for the four main crops sold: paddy/rice/sticky rice; corn; sesame seed; and groundnut, it is clear that households rarely organised themselves in groups or collectives to market their crops (Table 47 below).

For paddy/rice/sticky rice, over 90 percent of both LIFT and Control households sold their rice alone. There was no significant change in both types of households in how they sold this crop.

Once again, the main method households used to market corn was to sell it by themselves, with around 90 percent doing this. In the LIFT households, there was a significant increase in

the number of households selling this crop in a group, rising from 2 to 9 percent over the two surveys ( $p < .05$ ). In the Control households, there was no significant change. Further, there was no significant result for DiD between the two types of households by this type of selling.

Although the main way to sell groundnut was by themselves, there was a marked change in the proportion of Control households selling it both alone and in a group. This increased from 0 to 27 percent over the two surveys ( $p < .05$ ). Given there was no significant change in the proportion of LIFT households doing this, DiD between the two types of households was significant ( $p < .05$ ). This significant change may be influenced by the very small sample; in the first round there were no Control households doing this, and in the second round only four households selling groundnut did so alone and in a group.

**Table 47: How the householders sold their crops**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
<b>How the household sold paddy/rice/sticky rice (n=462)</b>							
Alone	93.5	91.1	-2.4	96.2	90.5	-5.7	3.3
Sold in a group	5.2	7.8	2.6	3.8	7.9	4.1	-1.5
Both alone and in a group	1.3	1	-3	0	1.6	1.6	-1.9
<b>How the household sold corn (n=195)</b>							
Alone	97	90.9	-6.1	95	87.1	-7.9	1.8
Sold in a group	1.5	9.1	7.6*	5	6.5	1.5	6.1*
Both alone and in a group	1.5	0	-1.5	0	6.7	6.7	-8.2
<b>How the household sold sesame (n=115)</b>							
Alone	87.5	86.7	-8	95	88	-7	6.2
Sold in a group	7.5	10	2.5	5	8	3	-5
Both alone and in a group	5	3.3	-1.7	0	4	4	-5.7
<b>How the household sold groundnut (n=124)</b>							
Alone	72.2	73.9	1.7	92.6	73.3	-19.3	21
Sold in a group	25	21.7	-3.3	7.4	0	-7.4	4.1
Both alone and in a group	2.8	4.3	1.5	0	26.7	26.7*	-25.2*
<b>2013 data: Based on all 3,200 households interviewed in that year</b>							
<b>By zone and comparison between male- and female-headed households</b>							
	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total	
<b>How the household sold paddy/rice/sticky rice (n=391)</b>							

<b>Alone</b>	97.6	84.6	92.9	93.2	92.5	93.1
<b>Sold in a group</b>	2.4	15.4	6.3	5.9	7.5	6.1
<b>Both alone and in a group</b>	0	0	.9	.9	0	.8

**How the household sold corn (n=306)**

<b>Alone</b>	91	100	0	91.1	91.5	91.2
<b>Sold in a group</b>	8	0	0	7.7	8.5	7.8
<b>Both alone and in a group</b>	1	0	0	1.2	0	1

**How the household sold groundnut (n=160)**

<b>Alone</b>	61.1	80.4	100	78	82.1	78.8
<b>Sold in a group</b>	33.3	13	0	14.4	17.9	15
<b>Both alone and in a group</b>	5.6	6.5	0	7.6	0	6.3

**How the household sold sesame (n=135)**

<b>Alone</b>	100	80.2	0	81.8	77.8	80.7
<b>Sold in a group</b>	0	15.3	0	13.1	19.4	14.8
<b>Both alone and in a group</b>	0	4.6	0	5.1	2.8	4.4

**By average household income and landownership**

	<50,000	50,000–100,000	>100,000	Own land	No land	Total
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**How the household sold paddy/rice/sticky rice (n=391)**

<b>Alone</b>	90.8	92.8	94.1	92.4	100	93.1
<b>Sold in a group</b>	9.2	7.2	4.3	6.8	0	6.1
<b>Both alone and in a group</b>	0	0	1.6	.8	0	.8

**How the household sold corn (n=306)**

<b>Alone</b>	83.3*	91.5*	95.3*	91.2	91.3	91.2
<b>Sold in a group</b>	13.9	7.5	4.7	7.8	8.7	7.8
<b>Both alone and in a group</b>	2.8	.9	0	1.1	0	1

**How the household sold groundnut (n=160)**

<b>Alone</b>	81.5	78.1	76.2	79.2	66.7	78.8
<b>Sold in a group</b>	13	15.6	16.7	15.6	0	15
<b>Both alone and in a group</b>	5.6	6.3	7.1	5.2*	33.3*	6.3

**How the household sold sesame (n=135)**

<b>Alone</b>	80.6	83.8	74.2	80.9	75	80.7
<b>Sold in a group</b>	19.4	10.3	19.4	14.5	25	14.8
<b>Both alone and in a group</b>	0	5.9	6.5	4.6	0	4.4

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

Table 47 (above) also shows how households sold their crops in the three agro-ecological zones, for male- and female-headed households, between different income groups, and between households owning land and those that were landless, as based on data from all the

interviewed households in 2013. Overall, there was little difference between the groups, as all the households tended to sell their produce by themselves. A significant difference existed for how the different income groups sold corn, with 83 percent of those earning less than 50,0000 kyat doing so, compared to 92 and 95 percent for those households with incomes between 50,000–100,000 kyat and those earning more than this, respectively ( $p>.05$ ).

#### 4.10.2. Assessing crop prices

There was a statistically significant difference the proportion of households in Control villages accessing crop prices before selling their crops, but not in households in LIFT villages (Table 48 below). As a result, DiD between LIFT and Control households was significant ( $p<.05$ ). In both surveys, among LIFT households, over 70 percent of those who sold crops accessed the crop price before selling. However, for Control Households the proportion doing this fell from 73 to 62 percent ( $p<.05$ ).

The main source of information about crop prices for both LIFT and Control households came from dealers/brokers. Among LIFT households, there was no significant change in the importance of this source. However, for Control households there was a significant drop in those using this source, falling from 70 to 56 percent ( $p<.05$ ). As a result, there was a significant DiD between LIFT and Control households for dealers/brokers as a source of information ( $p<.05$ ).

Reflecting a significant increase in the proportion of households owning mobile phones (see below), these phones played a significantly more important role as a source of information from the first to the second survey. This was the case for both LIFT and Control households for those among them who sold crops. In the 2011 survey, 5 percent of LIFT and 4 percent of Control households used their mobile phones to gain access to crop prices. In the 2013 survey, the proportion had increased to 13 percent ( $p<.005$  for both types of households). There was no significant DiD between the two types of households using mobile phones to gain this information.

**Table 48: Proportion of households accessing crop prices and the source of information**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
<b>Proportion of households accessing crop prices before they sold their crop (n=1,441)</b>	72.9	75.6	2.7	72.8	61.5	-11.3*	14*
<b>Source (n=1,034)—multiples sources per household possible</b>							
<b>Radio/TV</b>	1.3	8.6	7.3***	.5	8.1	7.6***	-.3
<b>Newspaper/weekly journal</b>	0	0	0	0	.5	.5	-.5

<b>Friends/family</b>	58.8	53.9	-4.9	63.2	63.1	-.1	-4.8
<b>Mobile phone</b>	5	12.7	7.7**	3.8	13.1	9.3**	-1.6
<b>Farmers' association/ cooperative</b>	.9	.3	-.6	1.6	.6	-1	.4
<b>NGO/other organization</b>	.3	2.7	2.4*	0	0	0	2.4
<b>Dealer/broker</b>	64.8	66	1.2	70.3	55	-15.3**	16.5*

2013 data: Based on all 3,200 households interviewed in that year

**By zone and comparison between male- and female-headed households**

	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total
<b>Proportion of households accessing crop prices before they sold (n=1,573)</b>	66.1***	76.1***	86.4***	74.6	73.1	74.3

**Source (n=1,169)—multiples sources per household possible**

<b>Radio/TV</b>	2.8***	24.7***	3***	11.1	12.3	11.3
<b>Newspaper/weekly journal</b>	0	.2	.3	.2	0	.2
<b>Friends/family</b>	41.2***	73.9***	55***	55.8*	64.2*	57.3
<b>Mobile phone</b>	6.4***	18.7***	15.8***	12.4*	18.4*	13.5
<b>Farmers' association/cooperative</b>	0	.4	.3	.3	0	.3
<b>NGO/other organization</b>	.5***	.7***	3.7***	1.1	2.4	1.4
<b>Dealer/broker</b>	75.8***	41.2***	68.8***	62.1*	54.7*	60.7

**By average household income and landownership**

	<50,000	50,000– 100,000	>100,000	Own land	No land	Total
<b>Proportion of households accessing crop prices before they sold (n=1,573)</b>	65.3***	74.5***	82.2***	74.4	72.7	74.3

**Source (n=1,169)—multiples sources per household possible**

<b>Radio/TV</b>	7.2*	14.7*	10.8*	11.8*	3.8*	11.3
<b>Newspaper/weekly journal</b>	0	.2	.2	.2	0	.2
<b>Friends/family</b>	59.3	60.3	52.8	57.7	52.5	57.3
<b>Mobile phone</b>	8.8*	14.9*	15.5*	13.9	8.8	13.5
<b>Farmers' association/cooperative</b>	.3	.5	0	.2	1.3	.3
<b>NGO/other organization</b>	1	1.1	1.9	1.2	3.8	1.4
<b>Dealer/broker</b>	56.7**	56.9**	67.6**	60.2	67.5	60.7

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

The table above also depicts how all the interviewed households in 2013 accessed crop prices. A greater proportion of households in the Coastal/Delta zone accessed crop prices before they sold their produce, with 86 percent doing so. In the Hilly and Dry zones, 66 and 76 percent of households, respectively, knew the going price for their crops before they sold them ( $p < .001$ ).



For the households that knew the price before they sold their produce, the most common source of information was dealers/brokers. This source was used by 76 percent of Hilly zone households, 69 percent of Coastal/Delta households, and 41 percent of Dry zone households ( $p < .001$ ). Friends and family members were the second most common source of information, with 74 percent of Dry zone households, 55 percent of Coastal/Delta zone households, and 41 percent of Hilly zone households using this source ( $p < .001$ ).

For male- and female-headed households, there was no significant difference between the proportion accessing crop prices. However, female-headed households were more likely to use friends and family and mobile phones ( $p < .05$ ) to gain this information, while male-headed households were more likely to use dealers/brokers ( $p < .05$ ).

The higher the average monthly income, the more likely the households knew the price of their produce before they sold it. For households with an average income of less than 50,000 kyat, 65 percent knew the price before they sold. For households with an average income of 50,000–100,000 kyat, three quarters knew the price, while for those with the highest monthly income, 82 percent knew the price ( $p < .001$ ). However, there was no statistically significant difference between land ownership and whether households knew the price of their crop before they sold it.

#### 4.10.3. Knowledge about prices

DiD between the LIFT and Control households concerning whether they knew the price of their crop at the nearest market town before selling it was significant ( $p < .05$ ) (Table 49 below). However, this was a result of a significant decrease in the proportion of Control households knowing this, rather than any significant change among LIFT households. The proportion of Control households knowing the price of their crop before selling it fell from 72 to 59 percent ( $p < .005$ ).

In terms of the price the households could obtain, where and when they sold their crops, and the rating of their main crop, there was no significant DiD between the LIFT and Control households. For a majority of the households, they were able to get a better price for their crops outside of their villages. This was the case for over 80 percent of the households. It increased from 72 to 81 percent in both the LIFT ( $p < .005$ ) and Control households ( $p < .05$ ).

From the first to the second surveys, there was a change in when the households sold their crops. In 2011, 100 percent of LIFT and Control households sold their crop immediately or within 1 month of the harvest. By 2013, this had reduced to just under 80 percent for both types of households. Presumably, these households were selling their crops later to gain better prices.

**Table 49: Knew price at the nearest market town before selling and comparisons of prices**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
<b>Proportion of households that knew the price of their crop at the nearest market town before selling it (n=1,441)</b>	67.2	66.6	-6	71.7	58.5	-13.2**	12.6*
<b>When sold outside own village, price compared to what you could obtain in your own village (n=954)</b>							
Higher	72	81.3	9.3**	72	80.9	8.9*	.4
Same	22.9	14.4	-8.5**	23.6	15.1	-8.5*	0
Lower	5.1	4.3	-8	4.4	3.9	-.5	-.3
<b>Where the households sold their crops (n=1,441)</b>							
Own village	36	39.3	3.3	28	30.8	2.8	.5
Village-tract	18.8	8.4	-10.4***	22.4	15.8	-6.6	-3.8
Market town	45.2	52.3	7.1*	49.6	53.5	3.9	3.2
<b>When the households sold their crops (n=1,441)</b>							
Immediately after harvest	58.9	60.1	1.2	56.7	60.8	4.1	-2.9
1 month later	41.1	17.7	-23.4***	43.3	17.3	-26***	2.6
2 months later	0	10.6	10.6***	0	12.7	12.7***	-2.1
3 months later	0	5.5	5.5***	0	5.4	5.4***	.1
4 or more months later	0	6.1	6.1***	0	3.8	3.8**	2.3
<b>Proportion of households rating their main crop that they sold (n=1,441)</b>							
Above average for the area	17.7	14.7	-3	14.2	18.5	4.3	-7.3
Average	68.3	70.3	2	69.7	67.7	-2	4
Below average	14	15.1	1.1	16.1	13.8	-2.3	3.4
<b>2013 data: Based on all 3,200 households interviewed in that year</b>							
<b>By zone and comparison between male- and female-headed households</b>							
	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total	
Proportion of households that knew the price of their crop at the nearest market town before selling it (n=1,573)	58***	70.7***	78***	66.7	69	67.1	
<b>Price compared to what you could obtain in your own village (n=1,056)</b>							
Higher	78.6	77.7	78.8	79.1	75	78.3	
Same	18.1	16.8	16.4	17.3	16.5	17.1	
Lower	3.2	5.5	4.8	3.6**	8.5**	4.5	

**Where the households sold their crops (n=1,573)**

<b>Own village</b>	30.3***	27.1***	48.1***	34.5*	26.2	33
<b>Village-tract</b>	15.2***	8.3***	6.7***	10.7	11	10.7
<b>Market town</b>	54.5***	64.6***	45.2***	54.8*	62.8*	56.3

**When the households sold their crops (n=1,573)**

<b>Immediately after harvest</b>	59.2**	59.7**	70.4**	61.8	62.1	61.9
<b>1 month later</b>	15.4***	23.9***	15.4***	18.2	20	18.6
<b>2 months later</b>	13.8**	9.2**	7.5**	11.1	9	10.7
<b>3 months later</b>	5.5*	3.2*	2.3*	4.1	3.4	3.9
<b>4 or more months later</b>	6.1	4.1	4.3	4.8	5.5	5

**Proportion of households rating their main crop that they sold (n=1,573)**

<b>Above average for the area</b>	20.7	17.8	16.5	19.2	16.6	18.7
<b>Average</b>	67.9	67.8	64.9	66.4	70.7	67.2
<b>Below average</b>	11.4*	14.4*	18.6*	14.4	12.8	14.1

**By average household income and landownership**

	<50,000	50,000–100,000	>100,000	Own land	No land	Total
<b>Proportion of households that knew the price of their crop at the nearest market town before selling it (n=1,573)</b>	58.5***	67.5***	74.5***	67.2	66.4	67.1

**When sold outside own village, price compared to what they could obtain in their own village (n=1,056)**

<b>Higher</b>	79.6	79.2	76.4	78.2	79.5	78.3
<b>Same</b>	13.5	17.7	19.2	17	19.2	17.1
<b>Lower</b>	6.9	3	4.4	4.8	1.4	4.5

**Where the households sold their crops (n=1,573)**

<b>Own village</b>	30.4	34.5	33.6	32.3*	42.7*	33
<b>Village-tract</b>	9.4	10.6	12.2	10.7	11.8	10.7
<b>Market town</b>	60.2	54.9	54.2	57.1*	45.5*	56.3

**When the households sold their crops (n=1,573)**

<b>Immediately after harvest</b>	64.3	61.7	59.8	61.7	63.6	61.9
<b>1 month later</b>	15.7	19.8	19.7	19.1	11.8	18.6
<b>2 months later</b>	11.9	11.3	8.9	10.6	11.8	10.7
<b>3 months later</b>	4.5	3.8	3.7	3.8	6.4	3.9
<b>4 or more months later</b>	3.6**	3.4**	7.9**	4.9	6.4	5

**Proportion of households rating their main crop that they sold (n=1,573)**

<b>Above average for the area</b>	17*	16.2*	23*	19.1	13.6	18.7
<b>Average</b>	69.6*	69.7*	62.2*	66.3*	79.1*	67.2
<b>Below average</b>	13.4	14	14.9	14.6*	7.3*	14.1

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

Data from all the interviewed households in 2013 from the 150 LIFT and 50 Control villages indicate there were important differences between the three agro-ecological zones, and between income groups in terms of knowing the crop price at the nearest market town before they sold their crop. However, there were no such significant differences for whether the household head was a male or female, or whether the household owned land or not.

A greater proportion of Coastal/Delta households knew the price of their crop in the nearest market town, but were the least likely to actually sell their crop at this market, and also were the most likely to sell their crops immediately, compared to the other two zones. Approximately 78 percent of Coastal/Delta households claimed they knew the price at the nearest market town, compared to 71 percent of households in the Dry zone, and 58 percent in the Hilly zone ( $p < .001$ ). The proportions of households selling their crop in their own village was 48 percent in the Coastal/Delta zone, 30 percent in the Hilly zone, and 27 percent in the Dry zone ( $p < .001$ ). The proportion selling their produce immediately after the harvest was 70 percent in the Coastal/Delta zone, and just under 60 percent in the other two zones ( $p < .005$ ).

Households with higher incomes were more aware of the price of their produce in the nearest market town compared to the other two income groups. Three quarters of those with an average monthly income of over 100,000 kyat knew the price, compared to 68 percent with an income of 50,000–100,000 kyat, and 59 percent with an income of under 50,000 kyat ( $p < .001$ ). However, there were no significant statistical differences between the three income groups and when and where they sold their produce. Further, there was little difference between those owning and not owning land, in terms of knowing the price at the nearest market town and when and where they sold their produce.

## 4.11. Credit

### 4.11.1. Proportion of households taking out loans and the source for these loans

Survey respondents were asked a series of questions on their use of credit and their level of household indebtedness. Similarly, FGDs discussed the use of credit, sources of credit, and disadvantages and advantages of these sources. The majority of households had taken out a loan in the 12 months prior to the survey, whether they were LIFT or Control households, and whether it was in Round 1 or 2 (Table 50 below). Between the two surveys, there was no statistically significant change in the proportion of households that had taken out a loan.

Although there was no overall change in the number of households taking out loans, there were important differences in the source of those loans, particularly among LIFT households. The main source of credit among the households was family and/or friends, accounting for around half of all sources, whether they were LIFT or Control households. There was no significant change in the use of this source of credit over time.

However, there was a significant change for LIFT households in their use of micro-credit providers, with an interest of 2.5 percent or less. By the second survey, this had become the second most common source of credit for the LIFT households. The proportion using this source increased from 20 to 35 percent ( $p < .001$ ). With no significant change among Control households using this source, DiD between the LIFT and Control households was significant ( $p < .001$ ).

Possibly reflecting the increase in use of micro-credit providers as a source of credit, there was a significant decline in the proportion of LIFT households using village saving and loans associations, declining from 8 to 3 percent ( $p < .001$ ). A lesser decline happened in Control households, making DiD between the two types of households significant ( $p < .05$ ). Officials working on the LIFT programme indicated that it can be both time consuming and difficult to gain a loan from village saving and loans associations, as one has to be a member of the association, attend meetings, keep records of the money loaned, etc.—all for a very small loan. Given these problems, micro-credit schemes may be a better option for the villagers.

Also possibly reflecting the increase in LIFT households using micro-credit schemes, there was a significant decline in the proportion of LIFT households using money lenders and shopkeepers. Both of these declines were significant ( $p < .05$ ) in the LIFT households, but not in the Control households. Nevertheless, DiD between the two types of households was not significant. Between 2011 and 2013, micro-credit schemes had replaced money lenders as the second most common source for money in LIFT households (after family and friends), while in the Control households money lenders stayed as the second most common source of money.

One further statistically significant change in the use of credit was that LIFT households were more likely to use the government as a source of credit compared to the first survey, and that DiD between the two types of households was significant ( $p < .05$ ). The proportion of LIFT households using the government as a source of credit increased from 15 to 26 percent over the two surveys ( $p < .001$ ). There was also a significant change in the proportion of Control households using this source of credit, but not to the extent taking place in LIFT households.

The government agency lending money to rural communities is the Myanmar Agricultural Development Bank. This bank increased its loan size per acre to 50,000 kyat from the 2012 monsoon agriculture season, enabling farmers to take out a maximum loan of 500,000 kyat for 10 acres. In 2011, the loan size was 40,000 kyat, and in 2010 it was 20,000 kyat.<sup>11</sup> LIFT officials suggested that this change may have resulted in an increase of the number of farmers accessing this source of credit. However, it is unclear why this change would be happening to such a greater extent among LIFT households compared to Control households.

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11 LIFT. (2012). "Myanmar Agricultural Development Bank increased loan size." Retrieved 20 March, 2014, from <http://lift-fund.org/lift-in-action/content/myanmar-agricultural-development-bank-increased-loan-size>.

**Table 50: Proportion of households taking out loans and the source for this money**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
<b>Proportion of households that took out a loan in the last 12 months (n=3,328)</b>	85	84.4	-6	83.3	79	-4.3	3.7
<b>The money came from: (n=2,778)</b>							
<b>Private bank</b>	.4	.2	-2	0	0	0	-2
<b>Micro-credit provider (interest, 2.5% or less)</b>	19.6	35.3	15.7***	18.3	20.7	2.4	13.3***
<b>Village Savings and Loans Association</b>	8.4	3.4	-5***	7.9	4.8	-3.1	-1.9*
<b>Family/friend</b>	45.2	48.1	2.9	48.1	54.5	6.4	-3.5
<b>Money lender</b>	39.6	34.3	-5.3*	35.2	33.6	-1.6	-3.7
<b>Shopkeeper</b>	25.5	20.7	-4.8*	22.1	19.6	-2.5	-2.3
<b>Private company</b>	.5	.3	-2	.2	.4	.2	-4
<b>Farmers' Association/ Cooperative</b>	1.5	2.5	1	2.7	.9	-1.8*	2.8*
<b>Presale of product to trader</b>	10.4	7.4	-3*	9.2	8.4	-.8	-2.2
<b>Government</b>	14.7	26.3	11.6***	16.5	22	5.5*	6.1*
<b>2013 data: Based on all 3,200 households interviewed in that year</b>							
<b>By zone and comparison between male- and female-headed households</b>							
	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total	
<b>Proportion of households that took out a loan in the last 12 months (n=3,200)</b>	75.6***	78.3***	90.5***	82.4**	77.5**	81.4	
<b>The money came from: (n=2,605)</b>							
<b>Private bank</b>	.1	.4	.1	.1*	.6*	.2	
<b>Micro-credit provider (low interest, 2.5% or less)</b>	30.2**	26.3**	33.8**	30.5	29.3	30.3	
<b>Village Savings and Loans Association</b>	10.4***	10.6***	2.1***	7.1	8.8	7.4	
<b>Family/friend</b>	36***	53.9***	56.4***	49.1	50.1	49.3	
<b>Money lender</b>	17***	42.8***	37***	33.4	29.5	32.7	
<b>Shopkeeper</b>	9***	23.4***	24.1***	19	19.6	19.2	
<b>Private company</b>	.1	.6	.2	.2	.6	.3	
<b>Farmers' Association/ Cooperative</b>	1.5***	4.8***	0***	1.9	2.4	2	
<b>Presale of product to trader</b>	15.4***	2.5***	4.9***	7.8	5.6	7.4	
<b>Government</b>	13.2***	24.1***	30.3***	24*	18.8*	23	

By average household income and landownership

	<50,000	50,000–100,000	>100,000	Own land	No land	Total
<b>Proportion of households that took out a loan in the last 12 months (n=3,200)</b>	80.4*	83.6*	79.4*	80.2*	83*	81.4
<b>The money came from: (n=2,605)</b>						
<b>Private bank</b>	0	.3	.3	.3	0	.2
<b>Micro-credit provider (low interest, 2.5% or less)</b>	27.2*	32*	31.8*	27.8**	33.6**	30.3
<b>Village Savings and Loans Association</b>	8.9*	5.9*	7.7*	8	6.6	7.4
<b>Family/friend</b>	52***	53***	39.1***	41.4***	59.7***	49.3
<b>Money lender</b>	34.1***	35.9***	25.2***	29.8***	36.5***	32.7
<b>Shopkeeper</b>	21.6***	22.6***	9.9***	12.8***	27.6***	19.2
<b>Private company</b>	.4	.1	.5	.3	.4	.3
<b>Farmers' Association/Cooperative</b>	1*	2.2*	3.1*	2.1	1.9	2
<b>Presale of product to trader</b>	5.2***	6.8***	11.7***	9.5***	4.6***	7.4
<b>Government</b>	13.1***	21.7***	39.4***	37.9***	3.3***	23

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

Table 50 (above) also shows the differences between the three agro-ecological zones, male- and female-headed households, income groups, and land ownership for all interviewed households in 2013 in terms of whether they had taken out a loan, and from what source. In the Coastal/Delta zone, 91 percent of households took out a loan in the last year, compared to 78 and 76 percent of households in the Dry and Hilly zones ( $p < .001$ ). These Coastal/Delta zone households were more likely to use micro credit ( $p < .005$ ), family and friends, shopkeepers, and the government than households from other zones ( $p < .001$ ). Households from the Dry zone were more likely to use village savings and loans associations, money lenders, and farmers' associations ( $p < .001$ ).

A greater proportion of male- than female-headed households had taken out loans in the past 12 months, with 82 percent compared to 78 percent, respectively ( $p < .005$ ). Further, among the households that took a loan out, more male-headed households borrowed from the government, with 24 percent doing so, compared to 19 percent of female-headed households ( $p < .05$ ).

Households with an average monthly income of 50,000–100,000 kkyat were the group most likely to have taken out a loan in the last 12 months, with 84 percent doing so. This compares with 80 percent of households with a lower income, and 79 percent with a higher income ( $p < .05$ ). The group with the highest average income were the least likely to have borrowed from friends, money lenders, and shopkeepers ( $p < .001$ ), but were more likely to use a presale of a product and borrow from the government ( $p < .001$ ).

Landless households were slightly more likely to have taken out a loan in the last 12 months, compared to those with land, with 83 and 80 percent doing so ( $p < .05$ ). Households without land were more likely to use micro-credit ( $p < .005$ ), family and friends, money lenders, and shopkeepers ( $p < .001$ ). However, they were less likely to have used a presale of a product or have borrowed from the government ( $p < .001$ ).

#### 4.11.2. The use of the household loans

There was no significant DiD between the LIFT and Control households over the two surveys on how they used their loans (Table 51). However, there were a number of significant changes occurring in the two types of households, suggesting improvements in the overall livelihoods of the various communities surveyed.

The most common use of loaned money was to purchase food. Importantly, there was a significant decline in LIFT households doing this. The proportion dropped from 43 to 32 percent ( $p < .001$ ). There was also a decline among Control households doing this, falling from 44 to 37 percent ( $p < .05$ ). As mentioned above, DiD was not significant. Another suggestion that the livelihoods of LIFT households was improving was that fewer of them needed to use their loans for health emergencies—this declined from 11 to 7 percent ( $p < .05$ ). No significant change happened in the Control households.

Another positive change in the lives of the households was that a greater proportion of them were using their loans for investments. The proportion of LIFT households using their credit to purchase agricultural inputs rose from 17 to 26 percent ( $p < .001$ ). No significant change happened in the Control households for this. Further, the proportion of households using the money to make business investments increased from 17 to 26 percent in the LIFT households ( $p < .001$ ), and from 17 to 20 percent among the Control households ( $p < .001$ ).

Although there was no significant DiD between the LIFT and Control households between 2011 and 2013, the data from all the interviewed households in 2013 indicate important differences between what the households used the borrowed money for in the three agro-ecological zones, with different income levels, and whether they owned land or not. There was very little difference for how male- and female-headed households used the money that they had borrowed.

In 2013, the three most common uses for the loans were to purchase food, to purchase agricultural inputs, and for business investments—in that order. Of the households that took out a loan, 35 percent of Dry zone households used the money to buy food, compared to 32 and 29 percent of households in the Coastal/Delta and Hilly zones, respectively ( $p < .05$ ). Thirty-eight percent of Hilly zone households used their loans to buy agricultural inputs, compared to 32 and 18 percent in the Dry and Coastal/Delta zones, respectively. Households in the Coastal/Delta zone were more likely to use the money they borrowed to make business investments, with a third of them doing so. In the other two zones, 12 percent of households made such investments ( $p < .001$ ).



Households with the lowest average monthly income were the most likely to use their borrowed money to purchase food, with 46 percent doing so. This compares with 30 percent of households with an income of 50,000–100,000 kyat, and 15 percent for those with an income of more than 100,000 kyat ( $p < .001$ ). However, for the purchase of agriculture inputs and business investments, households with the highest average income were the most likely to use their borrowed money for these purposes, followed by those in the middle income group ( $p < .001$ ).

Households with no land were more likely to have used their borrowed money on food purchases, with nearly half of these households that had borrowed money using it for this purpose, compared to 20 percent of those with land ( $p < .001$ ). For the purchase of agricultural inputs, it was those with land that used their borrowed money for this, with 46 percent doing so, compared to 6 percent of those with no land ( $p < .001$ ). There was no significant difference between the two groups for business investments.

**Table 51: The most important use of the loans taken in the last year (n=2,778)**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
Home improvement, including water supply	.3	1.2	.9*	0	.7	.7	.2
House purchase or construction	.4	.9	.5	1.3	1.8	.5	0
Construction other than house	0	0	0	0	.2	.2	-.2
Land purchase/rent	.6	.1	-.5	.2	.2	0	-.5
Purchase of working tools or equipment	1.7	1.7	0	1.5	.4	-1.1	1.1
Food purchases	43.3	31.6	-11.7***	44.4	37.4	-7*	-4.7
Purchase of agricultural inputs	17.3	25.9	8.6***	16.9	20.2	3.3	5.3
Purchase of animals/medicine for animals	4	2.7	-1.3	3.3	1.5	-1.8	.5
Purchase of other assets	.4	.7	.3	1	.7	-.3	.6
Bride price/wedding	.1	.3	.2	0	0	0	.2
Health emergency	10.5	7.2	-3.3*	10.2	7.7	-2.5	-8
Funeral	.4	0	-.4*	.8	.4	-.4	0
Business investment	16.6	24.5	7.9***	15.2	25.1	9.9***	-2
Repayment of loans	.6	.5	-.1	.6	.7	.1	-.2
School/education fees/costs	2.4	2.5	.1	4.2	3.1	-1.1	1.2

2013 data: Based on all 3,200 households interviewed in that year (n=2,605)

By zone and comparison between male- and female-headed households						
	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total
Home improvement, including water supply	.5	.7	.8	.6	1	.7
House purchase or construction	2.2***	.6***	0***	.9	.6	.9
Construction other than house	0*	.4*	0*	.1	.2	.1
Land purchase/rent	.1	.2	0	.1	0	.1
Purchase of working tools or equipment	.5***	.4***	2.8***	1.5*	.4*	1.3
Food purchases	28.5*	34.9*	32.3*	31.3	34.9	32
Purchase of agricultural inputs	38.1***	31.5***	18.1***	29.6	24.6	28.6
Purchase of animals/medicine for animals	2.5**	5**	2.3**	3	4	3.2
Purchase of other assets	.5***	1.9***	.2***	.9	.8	.8
Bride price/wedding	.2	.1	.2	.1	.4	.2
Health emergency	7.9	7.9	7.5	7.5	8.8	7.8
Funeral	0*	0*	.4*	.2	0	.2
Business investment	12.3***	12.4***	33.6***	20.3	19.6	20.2
Repayment of loans	.5	1.2	.3	.6	.8	.7
School/education fees/costs	6***	2.6***	1.4***	3.1	3.6	3.2

By average household income and landownership

	<50,000	50,000–100,000	>100,000	Own land	No land	Total
Home improvement, including water supply	.8	.7	.6	.5	.9	.7
House purchase or construction	.7	1.2	.6	1.1	.6	.9
Construction other than house	.2	0	.2	.1	.1	.1
Land purchase/rent	.1	.1	.2	.2	0	.1
Purchase of working tools or equipment	1	1.4	1.6	.5***	2.4***	1.3
Food purchases	45.7***	30.4***	15***	19.9***	47.9***	32
Purchase of agricultural inputs	21.3***	27.3***	41.3***	46.1***	5.5***	28.6
Purchase of animals/medicine for animals	2.5	4	3	1.9***	5***	3.2
Purchase of other assets	.9	.9	.6	.4*	1.4*	.8
Bride price/wedding	.2	.1	.3	.2	.2	.2
Health emergency	8.9*	8.1*	5.5*	4.9***	11.5***	7.8
Funeral	.1	.3	0	0*	.4*	.2

<b>Business investment</b>	13.3***	21.6***	27.6***	19.7	20.8	20.2
<b>Repayment of loans</b>	.7	.6	.8	.6	.7	.7
<b>School/education fees/costs</b>	3.4	3.3	2.8	3.8*	2.4*	3.2

\*p-value < 0.05, \*\*p-value <0.005, \*\*\*p-value <0.001

Data from FGDs also reflect the positive impact of access to loans offered by LIFT implementing partners. In many cases, access to loans with low interest rates and more flexible repayment terms had transformed the lives of the poor. General improvements attributed to these loans in FGDs included the following:

- Access to sufficient food
- Debt burden had been relieved
- A reduced need to worry about seeds, labour, and inputs
- Living styles had changed: villagers were wearing better clothes
- Change from thatched roof to corrugated iron sheet roofs
- Parents could send their children to school

FGD respondents appreciated that fact that the micro-credit schemes did not increase their financial burden, unlike with money lenders:

“Private money-lenders collect high interest rates—15 percent per month. If one fails to repay the loan, the lender takes the house, but this was not the case with the LIFT implementing partner”. (Hilly zone)

In the Coastal/Delta zone, one respondent commented:

“Villagers no longer need to rely on private money-lenders and paddy dealers. Previously, villagers sold their paddy in advance to the paddy dealers who kept the prices lower than the spot market prices. For example, while the price of maize is kyat 450 to 500 per *viss* on the market, then the dealer pays only kyat 300”.

In the Dry zone, things also improved as a result of loans:

“Business has changed over the last 3 years. The life of the people is better than before because of the rice bank, microfinance and pig bank established under LIFT”.

The opportunity for the poor, and especially the landless, to gain loans for buying livestock had positive results. One FGD participant explained that his monthly income had increased from 200,000 to 600,000 kyat after he had gained a cow and a loan from a LIFT implementing partner (Hilly zone). FGD participants from a village in the Coastal/Delta (vulnerable women) said that lending cash benefits casual workers because people have the opportunity to increase their income. Casual workers cannot usually afford to buy domestic animals such as pigs and chickens, but with the loans they could buy them for breeding, and the offspring of the animals bred can be consumed or sold.

Although loans were generally seen as positive and useful, in some cases FGD participants expressed concerns about taking a loan, even if it was a low-interest one.

“Loans are not useful for the poor. Taking a loan for raising pigs just leads you to owe more money. Loans are useful to vendors and government employees since they already have an income” (Hilly zone).

“The lending interest rate of the implementing partner is less than that of money lenders in the community, but you still need to repay the debt together with interest at the time of repayment. It is not negotiable. So, some people have got to borrow extra money from money lenders to repay their low interest loan. Sadly, taking out a low interest loan has resulted in them having two debts. Some of the households face deep debt problems” (Hilly zone).

However, despite these concerns, overall, the loans were of benefit to the villagers across the three agro-ecological zones and social classes. Loans appeared frequently in the list of interventions that were ranked as being the most useful, and many poor and landless FGD respondents wanted to see larger loans with more accessibility for the poor and landless.

#### 4.11.3. Value of the debt

Total debt increased from the 2011 to the 2013 survey in both the LIFT and Control households (Table 52 below). In 2011, no household had a debt of over 700,000 kyat. However, by 2013, 20 percent of LIFT and 15 percent of the Control households had a debt greater than this value. In the 2011 survey, the most common level of debt for the LIFT households was between 500,001 and 600,000 kyat, with 17 percent of the households having this debt level. By 2013, the most common level of debt for LIFT households was over 1,000,000 kyat, with 13 percent of households having this debt.

If the rising debt levels are for productive investments, such as for agricultural inputs and business investments, then the debt will not be a serious concern. However, if the increasing debt is for ensuring sufficient food, then high debt levels may present problems.

The 2013 data from all the interviewed households show that it was the Coastal/Delta households that had the highest levels of debt. Approximately 18 percent of these households had a debt of over 1,000,000 kyat, compared to 9 and 5 percent of Hilly and Dry zone households, respectively ( $p < .001$ ). The debt of male- and female-headed households was very similar. Based on income, it was households with the highest average monthly income that had the highest level of debt. Among these households, 26 percent had a debt of over 1,000,000 kyat, compared to 8 and 3 percent of those with an income of 50,000–100,000 kyat and those with an income less than this, respectively ( $p < .001$ ). Further, those households with land had a larger debt than those without land. Sixteen percent of those with land compared to 3 percent of those without land had a debt of over 1,000,000 kyat ( $p < .001$ ).

**Table 52: Value of the debt in kyat (n=2,778)**

kyat	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
Less than 25,000	5.7	3.6	-2.1*	5.8	5.7	-.1	-2
25,001–50,000	10.8	8.5	-2.3	7.9	7.7	-.2	-2.1
50,001–75,000	6.4	4.5	-1.9	6.3	6.8	.5	-2.4
75,001–100,000	12.9	10	-2.9	14.8	10.5	-4.3	1.4
100,00–150,000	11.6	8.6	-3*	11.7	11	-.7	-2.3
150,001–200,000	8.5	10.8	2.3	11.5	9.5	-2	4.3
200,001–300,000	11.1	11.7	.6	13.8	10.3	-3.5	4.1
300,001–400,000	6.3	6.6	.3	6.9	7.9	1	-.7
400,001–500,000	6.2	5.1	-1.1	4.8	7.7	2.9	-4*
500,001–600,000	17.2	3.9	-13.3***	12.9	3.7	-9.2***	-4.1
600,001–700,000	3.4	2.7	-.7	3.5	2	-1.5*	.8
700,001–800,000	0	1.3	1.3***	0	.9	.9*	.4
800,001–900,000	0	1.5	1.5***	0	.2	.2	1.3*
900,001–1,000,000	0	5	5***	0	4.4	4.4***	.6
Over 1,00,000	0	12.5	12.5***	0	9.2	9.2***	3.3
No debt	0	3.3	3.3***	0	2	2**	1.3

2013 data: Based on all 3,200 households interviewed in that year (n=2,605)

By zone and comparison between male- and female-headed households

kyat	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total
Less than 25,000	3.5	3.3	4.6	3.7	4.6	3.8
25,001–50,000	5.9*	7.7*	9.2*	7.4	9	7.7
50,001–75,000	4.1*	5.5*	6.3*	4.9	7	5.3
75,001–100,000	9.1	11.1	9.7	9.6	11.4	10
100,001–150,000	8	10.4	10.4	9.5	10.2	9.6
150,001–200,000	10.9***	13.1***	7***	9.8	11.6	10.2
200,001–300,000	13.2**	12**	8.2**	11	11	11
300,001–400,000	7.9	7.6	5.5	7.8**	3.4**	6.9
400,001–500,000	6.9**	9.3**	4.8**	6.9	7	6.8
500,001–600,000	5.2*	2.5*	3.6*	3.7	4	3.7
600,001–700,000	3.7*	2.7*	1.7*	2.8	2	2.6
700,001–800,000	2	1.3	2.1	1.9	1.2	1.8
800,001–900,000	.9	.7	1.2	1	.6	.9
900,001–1,000,000	5.1***	2.3***	6.3***	4.9	3.2	4.6

<b>Over 1,00,000</b>	8.9***	4.9***	17.6***	11.3	8.8	10.8
<b>No debt</b>	4.8**	4.6**	1.8**	3.5	4.4	3.6

**By average household income and landownership**

kyat	<50,000	50,000–100,000	>100,000	Own land	No land	Total
<b>Less than 25,000</b>	6.2***	3.8***	.6***	2***	6.2***	3.8
<b>25,001–50,000</b>	10.2***	7.9***	3.8***	4.3***	12.2***	7.7
<b>50,001–75,000</b>	6.8**	5.7**	2.7**	2.9***	8.6***	5.3
<b>75,001–100,000</b>	13***	10.3***	5.2***	7.7***	13***	10
<b>100,001–150,000</b>	10.1*	10.9*	6.8*	7.3***	12.8***	9.6
<b>150,001–200,000</b>	12.4**	10.1**	7.1**	8.5**	12.4**	10.2
<b>200,001–300,000</b>	11.3	12.2	8.5	11.3	10.5	11
<b>300,001–400,000</b>	6.3	7.1	7.7	7.8*	5.8*	6.9
<b>400,001–500,000</b>	6.5	7.5	6.5	8.3**	5.1**	6.8
<b>500,001–600,000</b>	4	3	4.6	4.7**	2.4**	3.7
<b>600,001–700,000</b>	2.1	2.9	3	3.6***	1.3***	2.6
<b>700,001–800,000</b>	1.2*	1.6*	3*	2.4*	1.1*	1.8
<b>800,001–900,000</b>	.4	1	1.4	1.2	.5	.9
<b>900,001–1,000,000</b>	2.8***	4.7***	7.1***	7***	1.4***	4.6
<b>Over 1,00,000</b>	3.4***	8***	26***	16.4***	3.3***	10.8
<b>No debt</b>	3.2*	2.9*	5.5*	4.1	3	3.6

\*p-value < 0.05, \*\*p-value <0.005, \*\*\*p-value <0.001

#### 4.11.4. Comparison of household indebtedness with the previous year

Over 40 percent of both LIFT and Control households believed that their indebtedness was increasing (Table 53 below). Nevertheless, there was a significant decline in the proportion of LIFT households stating this ( $p < .005$ ). The proportion stating this fell from 51 percent to 44 percent among LIFT households. Although there was no significant change among Control households stating this, DiD for the two types of households was not significant.

Simultaneously, there was a significant increase in the number of households indicating their indebtedness was decreasing. The proportion of LIFT households stating this increased from 12 to 29 percent ( $p < .001$ ). Among Control households, the increase was from 11 to 25 percent ( $p < .001$ ). DiD between the two types of households was not significant.

Data from all the interviewed households from 2013 imply perceived and possibly real levels of indebtedness had increased most among households in the Coastal/Delta zone and for households that had the lowest average monthly income. Among Coastal/Delta zone households, 52 percent indicated that their level of debt had increased over the last year, compared to 40 percent of Hilly zone households, and 33 percent for Dry zone households

( $p < .001$ ). Among households earning less than 50,000 kyat per month, 45 percent indicated that their level of debt had increased over the last 12 months. In households with an average income of 50,000–100,000 kyat, the proportion indicating their debt had increased was 42 percent, and it was 36 percent for those with an average income more than this ( $p < .001$ ). Male- and female-headed households had similar views of their debt level compared to the previous year, and there was no significant difference between households with and without land.

**Table 53: Comparison of households' current level of indebtedness with previous years (n=3,328)**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
<b>Increasing</b>	50.7	43.8	-6.9**	44.8	41.3	-3.5	-3.4
<b>Staying much the same</b>	19.2	25.2	6**	24.7	33	8.3**	-2.3
<b>Decreasing</b>	12.2	28.6	16.4***	10.6	25	14.4***	2

**2013 data: Based on all 3,200 households interviewed in that year**

<b>By zone and comparison between male- and female-headed households</b>						
	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total
<b>Increasing</b>	39.5***	32.6***	51.8***	41.7	39.4	41.2
<b>Staying much the same</b>	24.2***	39***	22.9***	27.8*	32.3*	28.7
<b>Decreasing</b>	35***	23.8***	23.9***	28.2	25	27.6

<b>By average household income and landownership</b>						
	<50,000	50,000–100,000	>100,000	Own land	No land	Total
<b>Increasing</b>	44.8***	41.5***	35.6***	40	42.9	41.2
<b>Staying much the same</b>	27.4	30	28.5	30.1	26.9	28.7
<b>Decreasing</b>	25.2***	26.2***	33***	27.6	27.5	27.6

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001  
 Note: Table excludes "don't knows."

## 4.12. Household assets and wealth

### 4.12.1. Ownership of livestock

Livestock are 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 fertilisation (through manures), even pest control (ducks), and can make valuable use of crop residues.

However, to date, the LIFT programme has not significantly increased animal ownership, at least among the LIFT households that were interviewed (Table 54 below). Similarly, no such changes took place in the Control households. The most common livestock owned by the householders were chickens (55 and 45 percent of LIFT and Control households in the second survey), followed by pigs (40 and 34 percent), and cattle (22 and 25 percent).

Although there were no significant changes between LIFT and Control households over the two surveys in terms of animal ownership, there were differences between households in the three agro-ecological zones, between male- and female-headed households, between different income groups, and between household with and without land, as based on data from all the interviewed households in 2013.

Households from the Hilly zone were more likely to have horses and buffalo than households in the other zones. Further, these households were just as likely to have pigs as households in the Coastal/Delta zone, but far more likely than households in the Dry zone ( $p < .001$ ). Households in the Dry zone were more likely to have cattle and goats and/or sheep ( $p < .001$ ). Coastal/Delta zone households were more likely to have chickens and goats, and—along with Hilly zone households—pigs ( $p < .001$ ).

Male-headed households were more likely to own farm animals than were female-headed households. This was the case for pigs, ducks ( $p < .001$ ), buffalo, and chickens ( $p < .005$ ). Households with an average monthly income of over 100,000 kyat were more likely to have cattle, chickens, ducks ( $p < .05$ ), buffalo, and pigs ( $p < .001$ ) than households with a lower average income. Households with land were more likely to have horses ( $p < .005$ ), cattle, buffalo, and chickens ( $p < .001$ ). However, households without land were more like to have ducks than those with land ( $p < .005$ ).

**Table 54: Proportion of households owning animals (n=3,328)**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
<b>Cattle</b>	21.6	22.2	.6	29.5	25.2	-4.3	4.9
<b>Horses</b>	1.9	1.2	-.7	1.7	1.6	-.1	-.6
<b>Goats and/or sheep</b>	6.1	4.4	-1.7	3.3	2.1	-1.2	-.5
<b>Buffalo</b>	12.6	12.6	0	9.7	8	-1.7	1.7
<b>Pigs</b>	36.9	40.3	3.4	31.8	34	2.2	1.2
<b>Chickens</b>	58.5	55.1	-3.4	47.7	45	-2.7	-.7
<b>Ducks</b>	14.2	11.5	-2.7	9	8.2	-.8	-1.9

2013 data: Based on all 3,200 households interviewed in that year

By zone and comparison between male- and female-headed households



	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total
<b>Cattle</b>	20.4***	54.8***	6***	26.8	28.7	27.2
<b>Horses</b>	3***	.4***	0***	1.2	.8	1.1
<b>Goats and/or sheep</b>	3.9***	7.9***	.6***	3.9	5.3	4.2
<b>Buffalo</b>	23.9***	.1***	11.6***	12.7**	8.5**	11.8
<b>Pigs</b>	41.8***	25.1***	42.2***	38***	29.7***	36.3
<b>Chickens</b>	52.8***	42.4***	55***	51.6**	44.1**	50.1
<b>Ducks</b>	2.1***	1***	23.6***	9.9***	4.5***	8.8

**By average household income and landownership**

	<50,000	50,000– 100,000	>100,000	Own land	No land	Total
<b>Cattle</b>	25.7*	26.3*	30.5*	39.8***	9.9***	27.2
<b>Horses</b>	2**	.7**	.5**	1.6**	.4**	1.1
<b>Goats and/or sheep</b>	4	4.8	3.4	4.9*	3.2*	4.2
<b>Buffalo</b>	7.9***	10.2***	20.1***	19.4***	1.6***	11.8
<b>Pigs</b>	32.3***	37.1***	40.9***	35	38.1	36.3
<b>Chickens</b>	47*	50.2*	54.1*	54***	44.7***	50.1
<b>Ducks</b>	6.7*	9.8*	10.3*	7.6**	10.5**	8.8

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

For the households owning livestock, there was also no statistically significant increase in the average number of animals that they owned (Table 55 below). This was the case for both LIFT and Control households, and for DiD between these two types of households.

Nevertheless, there were differences between the three agro-ecological zones, between male- and female-headed households, based on income and landownership, as based on the data from all the interviewed households in 2013. Households in the Hilly zone on average had a greater number of buffalo and pigs, while Hilly zone households had a greater number of cattle and goats and/or sheep, and Coastal/Delta households had a greater number of ducks ( $p < .001$ ). Male-headed households compared to female-headed households had on average more pigs ( $p < .001$ ), buffalo, and ducks ( $p < .005$ ). Households with an average monthly income of over 100,000 kyat and those with land were more likely to have on average more animals than those households with a lower income and without land.

**Table 55: Average number of animals owned (n=3,328)**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
<b>Average number of cattle owned</b>							
	.9	.83	-.07	.96	.78	-.18	.11
<b>Average number of horses owned</b>							
	0	0	0	0	0	0	0
<b>Average number of goats/sheep owned</b>							
	.46	.33	-.13	.47	.36	-.11	-.02
<b>Average number of buffalo owned</b>							
	.4	.41	.01	.23	.18	-.05	.06
<b>Average number of pigs owned</b>							
	.64	.73	.09	.63	.64	.01	.08
<b>Average number of chickens owned</b>							
	5	5.12	.12	5.08	6.23	1.15	-1.03
<b>Average number of ducks owned</b>							
	5.49	4.25	-1.24	1.5	1.57	.07	-1.31
<b>2013 data: Based on all 3,200 households interviewed in that year</b>							
<b>By zone and comparison between male- and female-headed households</b>							
	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total	
<b>Average number of cattle owned</b>							
	.67***	1.83***	.3***	.93	.96	.93	
<b>Average number of horses owned</b>							
	0	0	0	0	0	0	
<b>Average number of goats/sheep owned</b>							
	.1***	.98***	0***	.38	.33	.37	
<b>Average number of buffalo owned</b>							
	.51***	0***	.44***	.36**	.19**	.32	
<b>Average number of pigs owned</b>							
	.86***	.48***	.74***	.74***	.5***	.69	
<b>Average number of chickens owned</b>							
	5.92	5.13	5.15	5.63	4.48	5.4	
<b>Average number of ducks owned</b>							
	.11***	0***	8.23***	3.26**	.88**	2.78	
<b>By average household income and landownership</b>							
	<50,000	50,000–100,000	>100,000	Own land	No land	Total	

<b>Average number of cattle owned</b>						
	.7***	.93***	1.28***	1.45***	.23***	.93
<b>Average number of horses owned</b>						
	0	0	0	0	0	0
<b>Average number of goats/sheep owned</b>						
	.27	.41	.44	.36	.38	.37
<b>Average number of buffalo owned</b>						
	.17***	.27***	.65***	.54***	0***	.32
<b>Average number of pigs owned</b>						
	.55***	.66***	.94***	.72	.66	.69
<b>Average number of chickens owned</b>						
	3.3***	5.36***	8.43***	6.51*	3.89*	5.4
<b>Average number of ducks owned</b>						
	1.33***	2.56***	5.18***	3.11	2.33	2.78

\*p-value < 0.05, \*\*p-value <0.005, \*\*\*p-value <0.001

Although no significant changes in livestock ownership took place according to the quantitative data, the opportunity for the poor and the landless to own livestock was one of the most important changes discussed in FGDs, whether made possible through the provision of loans or through the direct provision of livestock. Participants from an FGD of vulnerable men in the Hilly zone said the following:

“Taking loans for raising pigs is useful and now there are over 100 pigs in the village”.

The same participants believed that raising a cow was the best long-term investment, as it would increase income by 200,000 or 300,000 kyat per year because a female cow gives birth to one calf per year (Hilly zone). They also said

“... providing cows led the poor households including widows to own a cow and that this was a significant change” (Hilly zone).

Also, in both Dry and Coastal/Delta zones, participants indicated the benefits of livestock ownership:

“Breeding pigs provides the most benefit to the poorest people” (Dry zone).

“Pig and cow raising are the activities that increase people’s income” (Coastal/Delta zone).

#### 4.12.2. Ownership of agricultural equipment and machinery

In the household survey, the participants were asked if they owned 11 different types of agriculture equipment and machinery (Table 56). Between the first and second surveys, household ownership increased significantly for four of these items for LIFT households, but not for any item for the Control households. For one of these items, the ownership of

an improved crop storage bin or silo, DiD was also significant ( $p < .05$ ). For this item, the proportion of households owning this increased from 8 to 12 percent ( $p < .001$ ). Among Control households there was also an increase in this item, but the change was not significant.

The proportion of LIFT households owning ploughs/tillage equipment for use with draught animals significantly increased, rising from 28 to 33 percent ( $p < .005$ ). There was no significant increase of ownership of this item in Control households. However, once comparing DiD between the two types of households, this was not statistically significant.

Ownership of power tillers among LIFT households also increased significantly, rising from 4 to 7 percent over the two surveys ( $p < .05$ ). In Control households there was a slight decline over the two surveys of people owning this item.

The final item for which there was a statistically significant increase in household ownership for LIFT households was backpack sprayers. This increased from 6 percent in the 2011 baseline survey to 9 percent in the 2013 household survey ( $p < .05$ ). There was also an increase in ownership among Control households for this item, but the increase was not significant.

In both the LIFT and Control households, the most common agricultural item owned was tillage equipment for animal traction, followed by tarpaulins/seed dry nets, and animal drawn carts. Mechanised equipment (power tillers, power threshers, irrigation pumps, and tractors) were rarely owned. Backpack sprayers for pest control were also rare among the sampled households. This low level of investment in agricultural equipment and machinery suggests that considerable gains in productivity and crop quality could be made with irrigation and pest control equipment and possibly post-harvest equipment.

Further, there was little shared ownership of agricultural equipment and machinery. Of the 11 agricultural equipment and machinery items detailed in Table 56, the most common item that was shared was power tillers—for this, only 1.2 percent of Control households shared it.

Nevertheless, there were significant differences between households in the three agro-ecological zones, between male- and female-headed households, income groups, and based on land ownership and whether they owned a range of agricultural equipment, as based on all the interviewed households in 2013. Hilly zone households were more likely to have backpack sprayers, improved crop storage bins or silos, tarpaulins or seed drying nets, and trailers drawn by vehicles. Dry zone households were more likely to have ploughs/tillage equipment for use with draft animals and animal-drawn carts, while Coastal/Delta households were more likely to have power tillers and power threshers ( $p < .001$ ).

There were two items in which a greater proportion of male-headed households possessed when compared to female-headed households. These items were power tillers ( $p < .005$ ) and ploughs/tillage equipment for use with draught animals ( $p < .05$ ). For all the other items, there were no significant differences.

Households with an average monthly income of more than 100,000 kyat and those households with land were more likely to have a whole range of agricultural equipment and machinery when compared to those with an income less than this, and those without land. These differences were significant at the  $p < .001$  level. This was the case for all items listed in Table 56, except for seeders, which were owned by very few households.

**Table 56: Proportion of households owning the following agricultural equipment and machinery (n=3,328)**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
<b>Ploughs/tillage equipment for use with draught animals</b>	27.8	32.9	5.1**	32.5	34.9	2.4	2.7
<b>Power tiller</b>	4.4	6.6	2.2*	3	2.6	-.4	2.6
<b>Tractor</b>	1.3	1	-.3	1	.7	-.3	0
<b>Power thresher</b>	1.5	1.7	.2	.7	.5	-.2	.4
<b>Backpack sprayer</b>	5.9	8.6	2.7**	6.8	8	1.2	1.5
<b>Improved crop storage bin or silo</b>	7.7	12.1	4.4**	7.1	9	1.9	2.5*
<b>Tarpaulin or seed-drying net</b>	24.1	21.9	-2.2	22.9	25.3	2.4	-4.6
<b>Irrigation pump</b>	2.6	3.1	.5	1.9	2.6	.7	.2
<b>Animal-drawn cart</b>	10.9	11.7	.8	16.7	16.7	0	.8
<b>Trailer (drawn by vehicle)</b>	.6	1.1	.5	.2	1.9	1.7**	-1.2
<b>Seeder</b>	.1	.2	.1	.2	.2	0	.1

2013 data: Based on all 3,200 households interviewed in that year

By zone and comparison between male- and female-headed households						
	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total
<b>Ploughs/tillage equipment for use with draught animals</b>	40.4***	44.1***	23.3***	37.4*	30.6*	36
<b>Power tiller</b>	6.3***	1.5***	7.2***	5.6**	2.6**	5
<b>Tractor</b>	.6*	.4*	1.4*	.8	.6	.8
<b>Power thresher</b>	.7***	.2***	3.6***	1.7	.8	1.5
<b>Backpack sprayer</b>	14.3***	12.4***	3.6***	10.5	8.5	10.1
<b>Improved crop storage bin or silo</b>	15.5***	11***	7.4***	11.6	10.2	11.3
<b>Tarpaulin or seed-drying net</b>	42.2***	21***	15.5***	26.3	26.2	26.3
<b>Irrigation pump</b>	2.4*	4.7*	3**	3.4	3.1	3.4
<b>Animal-drawn cart</b>	8.9***	41.1***	2.7***	17.5	18.2	17.7

Trailer (drawn by vehicle)	2.8***	1***	.5***	1.6	.9	1.4
Seeder	.3	0	.2	.2	.2	.2

**By average household income and landownership**

	<50,000	50,000–100,000	>100,000	Own land	No land	Total
Ploughs/tillage equipment for use with draught animals	28.6***	34.8***	48.3***	57***	7.2***	36
Power tiller	1.1***	3.8***	12.5***	8.5***	.1***	5
Tractor	0***	.2***	2.8***	1.4***	0***	.8
Power thresher	.1***	1***	4.3***	2.6***	0***	1.5
Backpack sprayer	7.1***	8***	17.9***	16.8***	1***	10.1
Improved crop storage bin or silo	5.6***	9.5***	22.4***	18.7***	1.2***	11.3
Tarpaulin or seed-drying net	20.6***	22.5***	40.4***	42***	4.7***	26.3
Irrigation pump	.5***	3.2***	7.8***	5.5***	.5***	3.4
Animal-drawn cart	13.3***	17.5***	24.1***	28.6***	2.6***	17.7
Trailer (drawn by vehicle)	.1***	.9***	4.3***	2.5***	0***	1.4
Seeder	.1	.2	.3	.3	0	.2

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

#### 4.12.3. Source of household lighting

Table 57 (below) suggests important shifts have taken place in rural Myanmar in terms of what source of power households are using to light their homes. These changes have taken place in both LIFT and Control households.

There was only one case in which DiD between the two types of households was significant. That was for the use of electricity from hydro power. However, this is unrelated to LIFT activities. In 2011, no household used this power, but by 2013, approximately 9 percent of LIFT and 4 percent of Control households used this source of power. Even though the increase in both types of households was significant, the rate of change in LIFT households was greater, making the difference of changes significant at  $p < .05$ .

The most common form of power for lighting in 2011 was kerosene/oil lamps. However, in both LIFT and Control households, the use of this fell significantly. In LIFT households, the use of this product fell from 38 to 17 percent ( $p < .001$ ), while in the Control households the decline was from 33 to 13 percent ( $p < .001$ ). The use of generators—both village and shared ones—also significantly decreased. In LIFT villages, the proportion of households using a village generator fell from 11 to 5 percent, from the first to the second survey ( $p < .001$ ). In the Control households, the proportion of households using this source of power fell from 8 to 6 percent ( $p < .05$ ). The use of shared generators fell from 6 percent of LIFT households to 2 percent ( $p < .001$ ). At the same time, the proportion of Control households using these generators fell from 4 to 2 percent ( $p < .05$ ).

Apart from hydro power (as noted above), villagers replaced the use of kerosene/oil lamps and generators with solar power with a battery and with table lamps with a dry battery. Solar power with the use of batteries in 2013 had replaced kerosene/oil lamps as the most common source of house lighting. It grew from 12 to 29 percent in LIFT households ( $p < .001$ ), and from 17 to 33 percent in the Control households ( $p < .001$ ). Table lamps with dry batteries grew from 4 to 14 percent in both LIFT and Control households ( $p < .001$ ).

In several FGDs, participants said that providing electricity to their village would be one of the three priority interventions they would recommend to improve the lives of the community members (Dry and Coastal/Delta zones). Dry batteries and solar panels were also mentioned as important sources of lighting (Dry and Coastal/Delta zones).

Data from all the interviewed households in 2013 reveal important differences between the three agro-ecological zones, male- and female-headed households, different income groups, and between those with and without land and the type of lighting they were using. Coastal/Delta zone households were the least likely to be connected to the electric grid, with less than 1 percent of them receiving this service. In the other two zones, around 10 percent of households were connected ( $p < .001$ ). These Coastal/Delta households were more likely to use kerosene/oil lamps, with nearly a third doing so, compared to under 5 percent in the other two zones ( $p < .001$ ). In both the Hilly and Coastal/Delta zones, over 30 percent of households were using solar power, while in the Dry zone only 24 percent of households were using this source of power ( $p < .001$ ).

Female-headed households were more likely than male-headed households to use as their source of lighting a table lamp with a dry battery and a village generator ( $p < .05$ ). Male-headed households were more likely than female-headed households to use a solar system with a battery to light their homes ( $p < .05$ ).

Households with a monthly average income of over 100,000 kyat, compared to those with a lower income, were more likely to be connected to the electric grid, have their own generator, to share a generator with another household, and to use solar power ( $p < .001$ ). Households in the lowest income group were the most likely to use kerosene/oil lamps and candles to light their residences ( $p < .001$ ).

Households with land were more likely than those without land to use a village generator; to use solar; and to have power from a hydro generator ( $p < .001$ ). Landless households were more likely than those with land to use kerosene/oil lamps and candles to light their residences ( $p < .001$ ).

**Table 57: Proportion of households with the following source of lighting (n=3,328)**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
<b>Electricity from the grid</b>	3.7	5.1	1.4	4.7	4.7	0	1.4
<b>Village generator</b>	10.6	4.8	-5.8***	7.5	5.9	-1.6*	-4.2
<b>Own generator</b>	2.6	3	.4	2.6	1.7	-.9	1.3
<b>Shared generator with other household(s)</b>	6	2.2	-3.8***	4.2	2.1	-2.1*	-1.7
<b>Lamp (kerosene/oil)</b>	37.9	16.8	-21.1***	32.6	13	-19.6***	-1.5
<b>Candle</b>	17.6	13.8	-3.8*	21	18.9	-2.1	-1.7
<b>Table lamp with dry battery</b>	3.7	14	10.3***	3.8	13.7	9.9***	.4
<b>Solar with battery</b>	11.9	28.7	16.8***	16.7	33.2	16.5***	.3
<b>Hydro generator</b>	0	8.6	8.6***	0	4.9	4.9***	3.7*

2013 data: Based on all 3,200 households interviewed in that year

**By zone and comparison between male- and female-headed households**

	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total
<b>Electricity from the grid</b>	11.4***	9.8***	.6***	6.9	8.7	7.3
<b>Village generator</b>	3.5***	15.9***	.8***	6.3*	8.5*	6.7
<b>Own generator</b>	1.5***	.7***	3.4***	2	1.4	1.8
<b>Shared generator with other household(s)</b>	.6***	2.8***	2.9***	2.2	1.7	2.1
<b>Lamp (kerosene/oil)</b>	4.7***	1.5***	32.3***	13	11.5	12.7
<b>Candle</b>	14***	11.3***	17.2***	14.2	14	14.2
<b>Table lamp with dry battery</b>	2.4***	33.1***	7.7***	13.5**	18**	14.4
<b>Solar with battery</b>	34.8***	24.2***	31***	30.8*	26.6*	30
<b>Hydro generator</b>	25***	.5***	.1***	8.9	7.1	8.6

**By average household income and landownership**

	<50,000	50,000–100,000	>100,000	Own land	No land	Total
<b>Electricity from the grid</b>	4.6***	6.1***	12.9***	8	6.3	7.3
<b>Village generator</b>	5.6	6.7	8.4	8.4***	4.4***	6.7
<b>Own generator</b>	.3***	.9***	5.5***	2.2	1.4	1.8
<b>Shared generator with other household(s)</b>	.9**	2.7**	2.9**	1.8	2.5	2.1
<b>Lamp (kerosene/oil)</b>	15.6***	14.3***	6.1***	7.6***	19.7***	12.7
<b>Candle</b>	16.3***	15.4***	9.1***	11.9***	17.2***	14.2
<b>Table lamp with dry battery</b>	15.9***	16***	9.9***	13.5	15.8	14.4



<b>Solar with battery</b>	27.1**	29.5**	34.9**	33.2***	25.6***	30
<b>Hydro generator</b>	11.8***	6.7***	7***	11.8***	4.1***	8.6

\*p-value < 0.05, \*\*p-value <0.005, \*\*\*p-value <0.001

#### 4.12.4. Source of cooking fuel

The main source of fuel for cooking was wood (Table 58 below). Over 90 percent of households, in both surveys and in both LIFT and Control households, used this to cook with. There were no statistically significant changes in the use of this fuel over the two surveys, or between the LIFT and Control households.

Given the importance of wood, it is interesting to note that there was a significant increase in the use of stoves using paddy husk for fuel as a source of cooking fuel. This source of fuel would be either free or very cheap compared with the purchase of wood. In the LIFT households, the proportion of households using these stoves rose from 0.2 to 3 percent ( $p < .001$ ). In the Control households, the proportion using these stoves rose from 0 to 1 percent ( $p < .05$ ). DiD between the two types of households was statistically significant ( $p < .05$ ). This suggests that implementing partners promoting these stoves are having a significant, yet small impact. Table 60 indicates that there has been an uptake of fuel-efficient wood stoves. Ownership of these stoves jumped from 12 to 43 percent in the LIFT households, and from 9 to 39 percent in the Control households; this increase of 30 percent in both types of households was statistically significant ( $p < .001$ ).

The 2013 data from all the interviewed households also indicated the importance of wood for cooking. The average use of wood in every type of household was 90 percent or higher—no matter which zone they came from, whether it was a male- or female-headed household, what income level they had, or whether they owned land or not.

**Table 58: The proportion of households with the following sources of cooking fuel (n=3,328)**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Differ- ence in differ- ences
<b>Electricity</b>	.3	1.4	1.1*	1.2	1.4	.2	.9
<b>Charcoal</b>	1.1	1	-.1	.7	1	.3	-.4
<b>Kerosene</b>	0	.1	.1	.2	0	-.2	.3
<b>Wood</b>	95.1	93.3	-1.8	96.2	96.2	0	-1.8
<b>Dung</b>	0	.3	.3	0	0	0	.3
<b>Stove using paddy husk for fuel</b>	.2	3.4	3.2***	0	1.4	1.4*	1.8*

2013 data: Based on all 3,200 households interviewed in that year

**By zone and comparison between male- and female-headed households**

	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total
<b>Electricity</b>	3.4***	2.5***	0***	2	2	2
<b>Charcoal</b>	2.8***	.8***	1.1***	1.6	1.4	1.6
<b>Kerosene</b>	.1	.2	0	.1	0	.1
<b>Wood</b>	93.6***	96.2***	91.7***	93.5	95	93.8
<b>Dung</b>	0	.1	.3	.2	0	.2
<b>Stove using paddy husk for fuel</b>	0***	.2***	6.5***	2.4	1.6	2.2

**By average household income and landownership**

	<50,000	50,000–100,000	>100,000	Own land	No land	Total
<b>Electricity</b>	.8***	1.4***	4.5***	2.3	1.6	2
<b>Charcoal</b>	.6***	1.3***	3.5***	1.1*	2.3*	1.6
<b>Kerosene</b>	.2	.1	0	.1	.1	.1
<b>Wood</b>	95.4***	95***	89.6***	94.9**	93.2**	93.8
<b>Dung</b>	.2	.2	0	.1	.2	.1
<b>Stove using paddy husk for fuel</b>	2.6	2	2.1	1.4***	3.3***	2.2

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

#### 4.12.5. Ownership of other household assets

In addition to questions regarding ownership of livestock, agricultural equipment and machinery, and the sources of lighting and cooking, the interviewees were asked in both the 2011 and 2013 surveys if they owned other household assets, which included 25 items as a means to assess household wealth (Tables 59 and 60).

The households interviewed in 2013 had more other household assets than those in 2011. This was the case for both LIFT and Control households. Table 59 shows the score that households had for the 25 items; if a household owned all 25, it scored 25. If it owned 7 different assets it scored 7, and if it owned none it scores 0, thus creating a possible score that ranges from 0 to 25. These assets were not weighted for their different values.

The mean score of assets increased from 3.6 items to 5.2 items for LIFT households ( $p < .001$ ), and from 3.7 to 5 items in the Control households ( $p < .001$ ). Given that both types of households increased their ownership of assets significantly from Round 1 to Round 2, DiD was not significant.

Based on all the households interviewed in 2013 in the 150 LIFT and 50 Control households, the mean asset ownership was highest in households in the Hilly zone, with 5.8 assets, and lowest in households in the Coastal/Delta zone, with 4.5 assets ( $p < .001$ ). Male-headed households had 5.3 assets on average, compared to 5 assets for female-headed households

( $p < .05$ ). Households with an average monthly income of 100,000 kyat had the highest mean number of assets, with 7.3, compared to 4.1 for those with an income of less than 50,000 kyat ( $p < .001$ ). Those households owning land had a mean asset score of 5.9, compared to 4.3 for landless households ( $p < .001$ ).

**Table 59: Asset ownership score (n=3,328)**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
0	8.2	2	-6.5***	8.2	1.7	-6.5***	.3
1	14.6	8.2	-6.4***	13.7	6.4	-7.3***	.9
2	16.5	12.2	-4.3*	15.6	11.6	-4*	-.3
3	17.7	12.6	-5.1**	14.6	17.2	2.6	-7.7**
4	14.8	13.4	-1.4	12.5	14.5	2	-3.4
5	8.4	10.8	2.4	9.6	10.6	1	1.4
6	7.2	11.6	4.4***	9.4	9.7	.3	4.1
7	4	8	4***	6.1	7.1	1	3
8	2.8	5.7	2.9**	3.6	5.7	2.1	.8
9	2	3.9	1.9*	2.8	3.3	.5	1.4
10	1.1	3.8	2.7***	1	4.2	3.2**	-.5
11	1.5	3.3	1.8*	.5	2.4	1.9*	-.1
12	.6	1.9	1.3*	.5	2.3	1.8*	-.5
13	.2	.6	.4	.5	.9	.4	0
14	.1	1	.9**	.3	.7	.4	.5
15	.1	.5	.4	0	.3	.3	.1
16	.1	.3	.2	0	0	0	.2
17	0	.1	.1	0	0	0	.1
18	.1	.2	.1	0	0	0	.1
<b>Mean score</b>	3.6	5.2	1.6***	3.7	5	1.3***	.3

2013 data: Based on all 3,200 households interviewed in that year

By zone and comparison between male- and female-headed households

	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total
0	1.8*	1.5*	3.1*	2.1	2.3	2.1
1	4.9***	7.8***	9.8***	7*	9.8*	7.5
2	7.6***	8.2***	14.8***	10	10.9	10.2
3	13.2**	11.4**	16.8**	13.5	14.6	13.8
4	13.5	12.9	15	14	13	13.8
5	11	12.2	10.7	11.3	11.2	11.3

6	13*	12.9*	9*	11.6	11.8	11.6
7	7.8**	10.4**	6**	8.3	7.5	8.1
8	7.4***	7.6***	3.9***	6.4	5.7	6.3
9	4.9	3.5	3.4	4	3.7	4
10	5.1*	3.8*	2.5*	4.1	2.6	3.8
11	3.5	3	2.1	2.9	2.8	2.9
12	2.7	2	1.2	2	1.7	2
13	2.1*	1.5*	.5*	1.4	1.1	1.3
14	.9	.9	.6	.9	.6	.8
15	.4	.3	.4	.4	.3	.3
16	.2	.1	.1	.1	.3	.2
17	0	0	.1	0	0	0
18	0	0	.2	.1	0	.1
<b>Mean score</b>	5.8***	5.5***	4.5***	5.3*	5*	5.2

**By average household income and landownership**

	<50,000	50,000–100,000	>100,000	Own land	No land	Total
0	3.1**	2**	.9**	1.4***	3.2***	2.1
1	11.3***	7.3***	2.5***	4.9***	11.1***	7.5
2	14.3***	9.9***	4.8***	7***	14.4***	10.2
3	17.3***	14.5***	7.5***	11.4***	17***	13.8
4	15.2**	15**	9.9**	12.4*	15.6*	13.8
5	11.8	11.9	9.6	12.2	10.1	11.3
6	10.8*	13.4*	10*	13*	9.8*	11.6
7	5.7**	9.5**	9.4**	9.5**	6.1**	8.1
8	4.7**	6.2**	8.6**	7.9***	4***	6.3
9	1.9***	3.5***	7.6***	5.1***	2.4***	4
10	1.6***	2.8***	8.5***	4.9***	2.3***	3.8
11	1.5***	1.5***	7***	4.3***	1***	2.9
12	.4***	1.3***	5.3***	2.6**	1.1**	2
13	.3***	1***	3.4***	1.9**	.5**	1.3
14	0***	.2***	3***	.9	.7	.8
15	0***	0***	1.4***	.4	.3	.3
16	0	.1	.4	.2	.1	.2
17	0	0	.1	.1	0	0
18	0	0	.3	.1	.1	.1
<b>Mean score</b>	4.1***	4.9***	7.3***	5.9***	4.3***	5.2

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

Reviewing the other household assets as items rather than on a scale of 0 to 25, there were three items in which there were statistically significant results for DiD between the two types of households ( $p < .05$ ) (Table 60 below). This was for radio/cassettes, boats without motors, and household savings. The change in ownership of boats without motors resulted from a significant reduction in ownership among Control households, rather than a statistically significant increase among LIFT households.

For radio/cassette and household savings, there was a statistically significant change among LIFT households, but no such change for Control households. Among the LIFT households owning a radio/cassette, the proportion rose from 36 percent in 2011, to 49 percent in 2013 ( $p < .001$ ), while those with household savings rose from 4 to 9 percent ( $p < .001$ ). It is important to note that the most common project activity in which LIFT households participated, as noted above, was savings and credit groups and the provision of credit, suggesting that this was having an impact on LIFT households.

Apart from the items mentioned above, there were highly significant increases in ownership of a range of assets, but this took place in both LIFT and Control households. This was the case for motorcycles, fuel-efficient wood stoves, chairs, tables, gold/jewellery, TV/satellite dishes, DVD players, mobile phones, and solar panels. Further, in LIFT households, but not in Control households, there was a significant increase in ownership of sewing machines and boats with motors. Nevertheless, there was no significant DiD between the two types of households for these two items.

This significant reduction in ownership by Control households of boats without motors mentioned above was the only such reduction for all the 25 assets measured by the survey. This is suggesting a marked increase in household possessions has taken place in the surveyed communities between 2011 and 2013. As with other findings of this study, this seems to indicate that a marked improvement in the standard of living of villagers in rural Myanmar has taken place during these 2 years.

The 2013 data from all the interviewed households show important differences between households in the three agro-ecological zones, male- and female-headed households, between income groups, and based on land ownership for owning household items. Coastal/Delta zone households were the least likely to have land-based forms of transport, but far more likely to have boats with and without motors ( $p < .001$ ). These households were more likely than households from the other two zones to own assets connected to the fishing industry, such as nets and fish/aquaculture ponds ( $p < .001$ ). Hilly zone households were more likely to have motorcycles, trawlarjees, mattresses, stoves (gas or electric), fuel-efficient wood stoves, tables (equal with Dry zone households), TV/satellite dishes, DVD players, watches, and solar panels compared to households in the other two zones ( $p < .001$ ). Dry zone households compared to households in the Hilly and Coastal/Delta zones were more likely to have bicycles, beds, chairs, gold/jewellery, and radio/cassettes ( $p < .001$ ).

A greater proportion of male-headed households compared to female-headed households owned watches, boats with and without motors, fishing nets ( $p < .001$ ), motorcycles, TV/satellite dishes, DVD players, and solar panels ( $p < .05$ ). Female-headed households were more likely to have beds ( $p < .001$ ) and gold/jewellery ( $p < .005$ ) when compared with male-headed households.

Based on income, it was the households that had an average monthly income of over 100,000 kyat that were most likely to have these assets. The exception to this rule was those households with the lowest average income were the most likely to have fuel-efficient wood stoves ( $p < .001$ ) and boats without motors and fishing nets, which were more likely to be owned by households with an average income of 50,000–100,000 kyat ( $p < .001$ ).

Comparing households with and without land, it was the households with land that were more likely to have these household assets. Once again, there was an exception, and that was assets connected to the fishing industry—namely boats without motors and fishing nets, which the landless were more likely to own ( $p < .001$ ).

**Table 60: Proportion of households owning the following assets (n=3,328)**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
<b>Bicycle</b>	13.8	15.8	2	21.9	21.7	-.2	2.2
<b>Motorcycle</b>	15.1	22.5	7.4***	19.6	30	10.4***	-3
<b>Trishaw</b>	.3	.1	-.2	0	0	0	-.2
<b>Trawlarjee</b>	1.2	2	.8	2.3	2.8	.5	.3
<b>Car</b>	.2	.3	.1	.2	0	-.2	.3
<b>Truck</b>	.4	.6	.2	0	.5	.5	-.3
<b>Bed (wooden or steel)</b>	24.8	29	4.2*	33	31.9	-1.1	5.3
<b>Mattress</b>	12.3	13.9	1.6	9.5	12.3	2.8	-1.2
<b>Stove (gas or electric)</b>	.6	1.7	1.1*	1.4	2.1	.7	.4
<b>Fuel-efficient wood stove</b>	11.6	43	31.4***	8.5	38.7	30.2***	1.2
<b>Chair</b>	35	43.9	8.9***	38.4	45	6.6*	2.3
<b>Table</b>	56.7	64.2	7.5***	58.7	72.7	14***	-6.5
<b>Gold/jewellery</b>	32.4	47.5	15.1***	33.7	42.5	8.8**	6.3
<b>Radio/cassette</b>	36.4	48.8	12.4***	41	43.9	2.9	9.5*
<b>TV/satellite dish</b>	12.7	23.9	11.2***	13.2	23.1	9.9***	1.3
<b>DVD player</b>	11.5	23.3	11.8***	13.5	22.9	9.4***	2.4
<b>Sewing machine</b>	4	8.5	4.5***	5	7.1	2.1	2.4
<b>Mobile phone</b>	2.5	13	10.5***	1.2	11.5	10.3***	.2
<b>Watch</b>	45.	48.9	3.9	41.5	42.4	.9	3

Solar panel	2.6	16.8	14.2***	1.9	19.6	17.7***	-3.5
Boat without motor	14.2	16.4	2.2	12.5	8.9	-3.6*	5.8*
Boat with motor	3.6	7	3.4***	4.2	4.7	.5	2.9
Fishing net	16.3	19.1	2.8	13	14.4	1.4	1.4
Fish/aquaculture pond	.3	.6	.3	.2	.3	.1	.2
Household savings	4	8.7	4.7***	4.3	5	.7	4*

2013 data: Based on all 3,200 households interviewed in that year

**By zone and comparison between male- and female-headed households**

	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total
Bicycle	8.8***	36***	13.4***	19.8	18	19.4
Motorcycle	47.8***	37.9***	4.8***	31.3*	26.1*	30.3
Trawlerjee	5.6***	.5***	.7***	2.5	1.2	2.3
Car	.7*	.2*	0*	.3	.3	.3
Truck	.8	.9	.2	.7	.3	.7
Bed (wooden or steel)	37***	60.5***	5.6***	33***	40.5***	34.5
Mattress	34.3***	3.5***	6.3***	14.6	15.5	14.8
Stove (gas or electric)	4.9***	3.4***	.2***	2.8	2.8	2.8
Fuel-efficient wood stove	47.9***	34.4***	42***	41.6	40.7	41.4
Chair	43.5***	62.5***	30.3***	44.7	48.8	45.5
Table	72.2***	72.2***	57.9***	67.2	68.6	67.5
Gold/jewellery	32***	58.7***	46.5***	44.3**	51.2**	45.7
Radio/cassette	29.7***	57.1***	51.2***	46.7	43.2	46
TV/satellite dish	35.8***	22.2***	19.2***	26.6*	22.4*	25.8
DVD player	35.8***	21***	17.9***	25.9*	21.1*	24.9
Sewing machine	10.9**	9.7**	6.5**	8.6	11	9.1
Mobile phone	12.9*	13.2*	9.8*	12.3	10.4	11.9
Watch	64.3***	30.2***	47.6***	49.1***	40.5***	47.4
Solar panel	37.4***	15.2***	8***	21.1*	16.8*	20.3
Boat without motor	1.2***	.4***	28.1***	11.3***	3.7***	9.8
Boat with motor	.4***	.5***	12.6***	5.1***	1.9***	4.4
Fishing net	2.5***	.5***	33***	14***	3.7***	11.9
Fish/aquaculture pond	.2**	0**	.9**	.4	0	.3
Household savings	9.2*	5.9*	6.6*	7.3	7.1	7.3

**By average household income and landownership**

	<50,000	50,000–100,000	>100,000	Own land	No land	Total
Bicycle	11.2***	20.1***	29.9***	20.8*	17.6*	19.4
Motorcycle	20.2***	26.6***	50.3***	39.9***	17***	30.3

<b>Trawlarjee</b>	1.1***	1***	5.9***	3.8***	.1***	2.3
<b>Car</b>	.1**	.2**	.9**	.3	.3	.3
<b>Truck</b>	.3	.7	1.1	.8	.4	.7
<b>Bed (wooden or steel)</b>	31.1***	31.7***	43.9***	41.9***	24.4***	34.5
<b>Mattress</b>	15.4***	9.7***	21.9***	18.5***	9.6***	14.8
<b>Stove (gas or electric)</b>	1.1***	1.7***	6.9***	3.5*	1.9*	2.8
<b>Fuel-efficient wood stove</b>	48.8***	38***	36.5***	42.1	40.5	41.4
<b>Chair</b>	36.4***	44.1***	60.5***	52.2***	36.4***	45.5
<b>Table</b>	61.2***	67.1***	76.9***	73.4***	59.3***	67.5
<b>Gold/jewellery</b>	33.7***	46.9***	60.9***	50.3***	39.5***	45.7
<b>Radio/cassette</b>	32.9***	49.6***	58.6***	48.3**	42.8**	46
<b>TV/satellite dish</b>	14.1***	22.1***	48.1***	32.9***	16***	25.8
<b>DVD player</b>	14.5***	21.1***	45.8***	31.7***	15.6***	24.9
<b>Sewing machine</b>	4.4***	7.5***	18.1***	11.5***	5.8***	9.1
<b>Mobile phone</b>	4.6***	7.8***	28.9***	15***	7.8***	11.9
<b>Watch</b>	41.3***	43.3***	62.5***	52.5***	40.4***	47.4
<b>Solar panel</b>	18.1***	16.3***	29.5***	27.5***	10.4***	20.3
<b>Boat without motor</b>	7.3***	12.4***	9.4***	6.9***	13.8***	9.8
<b>Boat with motor</b>	1.3***	4.8***	8.3***	4	5	4.4
<b>Fishing net</b>	9.1***	15.6***	10***	5.5***	20.7***	11.9
<b>Fish/aquaculture pond</b>	.1	.5	.5	.4	.3	.3
<b>Household savings</b>	4.2***	5.4***	14.5***	8.5**	5.6**	7.3

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

#### 4.12.6. House ownership and the quality of housing

The proportion of households owning their own houses increased significantly in the LIFT households from the first to the second surveys ( $p < .005$ ) (Table 61 below). The proportion rose from 90 to 94 percent. At the same time, there was no significant change in home ownership among the Control households. DiD between the LIFT and Control villages was significant ( $p < .05$ ).

The data from all the interviewed households in 2013 also show high home ownership in all three agro-ecological zones, for male- and female-headed households, in all income groups, and whether the household owned land or not. For each group, the proportion owning their own homes was over 90 percent.

Over the two surveys, there was a marked increase in the use of zinc sheets or corrugated iron for roofs and a corresponding decrease in the use of palm or thatch. Despite this shift, there was a small majority of households that had palm or thatch roofing. This change was



statistically significant, but happened in both LIFT and Control villages, thus there was no statistically significant result for DiD between the two types of villages.

In FGDs, many participants talked about the improvements in housing, in particular the change in roofing with more households able to afford corrugated iron. For example, one woman in the Dry zone explained that as a result of gaining a low-interest loan from one of the implementing partners, she was able to grow beans, and with the profits she was able to change her roof from thatch to corrugated iron (Dry zone).

Over the two surveys, there was one statistically significant change in the use of materials for the households' walls. That case was among Control households; the proportion using bricks, cement, cement block, or cement and stone increased from 7 to 10 percent ( $p < .05$ ). Nevertheless, there was no significant DiD in the use of this material between the two types of households. The most common material to make walls was bamboo, palm frond, or thatch, with over 70 percent of all households in both surveys having such walls.

For the floors of the respondents, over the two surveys the proportion of LIFT households using bamboo increased from 28 to 32 percent. No such significant change took place in Control households, but DiD between these two types of households was not significant. The most common forms of floors were timber, accounting for around half of all households. This was followed by bamboo, earth, and cement floors.

**Table 61: House details (n=3,328)**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
<b>Proportion of households owning their house</b>	90.4	94.4	4**	95.7	95.3	-.4	4.4*
<b>The proportion of households that have their roof made from:</b>							
<b>Zinc sheets or corrugated iron</b>	34.2	42.8	8.6***	38	48.4	10.4***	-1.8
<b>Palm frond or thatch</b>	61.4	53.5	-7.9***	60.8	50.9	-9.9**	2
<b>The proportion of households that have their walls made from:</b>							
<b>Zinc sheets or corrugated iron</b>	1.2	1.5	.3	1.2	.7	-.5	0.8
<b>Tarpaulin or plastic sheet</b>	2.6	1.7	-.9	1.4	1	-.4	-0.5
<b>Bamboo, palm frond, or thatch</b>	72.2	70.9	-1.3	74.1	71.7	-2.4	1.1
<b>Timber</b>	20.4	20.8	.4	15.3	16.1	.8	-0.4
<b>Bricks, cement, cement block, or cement and stone</b>	3.6	4.6	1	7.1	10.4	3.3*	-2.3

The proportion of households that have their floors made from:							
Timber	59	56.6	-2.4	46.2	45.8	-.4	-2
Bamboo	28.4	32.4	4*	32.3	34.5	2.2	1.8
Earth	8	6.9	-1.1	16	13.9	-2.1	1
Cement	3.5	3.6	.1	5	5.4	-.4	-3

2013 data: Based on all 3,200 households interviewed in that year

By zone and comparison between male- and female-headed households						
	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total
Proportion of households owning their house	97***	96.5***	91.7***	94.6*	97.2*	95.1

The proportion of households that have their roof made from:

Zinc sheets or corrugated iron	80.8***	59.7***	16***	51.5	55.6	52.3
Palm frond or thatch	16.2***	33.4***	84***	45.5*	39.6*	44.3

The proportion of households that have their walls made from:

Zinc sheets or corrugated iron	1.2*	.3*	.9*	.9	.5	.8
Tarpaulin or plastic sheet	.1***	.5***	2.1***	.9	.6	.9
Bamboo, palm frond, or thatch	50.9***	86***	81.2***	73.2	70.3	72.7
Timber	32.3***	3.5***	15***	16.6	18	16.9
Bricks, cement, cement block, or cement and stone	15.5***	8.4***	.9***	7.8*	10.4*	8.3

The proportion of households that have their floors made from:

Timber	48***	21.9***	75.1***	49.3*	43.8*	48.2
Bamboo	38.5***	44.8***	22***	35.1	35.2	35.2
Earth	1.9***	26.6***	1***	9.4	11.6	9.9
Cement	11.6***	6.7***	.9***	5.7**	9.2**	6.4

By average household income and landownership

	<50,000	50,000–100,000	>100,000	Own land	No land	Total
Proportion of households owning their house	93.9*	95.1*	96.8*	98.5***	90.4***	95.1

The proportion of households that have their roof made from:

Zinc sheets or corrugated iron	51.1***	46.8***	62.9***	65.7***	34.1***	52.3
Palm frond or thatch	44.6***	50***	35***	31.2***	62.3***	44.3

The proportion of households that have their walls made from:

Zinc sheets or corrugated iron	.6	.9	.9	.8	.7	.8
Tarpaulin or plastic sheet	.7	1	.9	.5*	1.3*	.9
Bamboo, palm frond, or thatch	72.7***	79.8***	61.3***	64.8***	83.4***	72.7
Timber	20***	11.8***	20.6***	21.1***	11.1***	16.9

<b>Bricks, cement, cement block, or cement and stone</b>	5.3***	6***	16.3***	12.3***	2.8***	8.3
<b>The proportion of households that have their floors made from:</b>						
<b>Timber</b>	45***	47.1***	54.5***	48.3	48.1	48.2
<b>Bamboo</b>	43***	35.9***	22.9***	33**	38.1**	35.2
<b>Earth</b>	9.5*	11.4*	8*	9.9	9.8	9.9
<b>Cement</b>	2***	5.1***	14.6***	8.6***	3.3***	6.4

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

Note: Not all of the proportions in the above table add up to 100, as "other" materials have not been included.

#### 4.12.7. Change in total assets

The majority of the respondents believed that their total household assets had stayed much the same as the year before (Table 62 below). This was the case for over half of those who participated in the survey. In both LIFT and Control households, the proportion holding this view increased significantly ( $p < .05$ ). At the same time, there was a significant increase in those believing that their total household assets had increased, rising from 17 to 25 percent in LIFT households, and from 14 to 19 percent in Control households. Given that the proportion increased significantly for both types of households, DiD was not significant.

Among all the interviewed households in 2013, it was households in the Hilly zone, those with the largest average income, and those owning land that perceived that their total assets were increasing. A third of Hilly zone households stated that their total assets were increasing, compared to around 20 percent in the other two zones ( $p < .001$ ). Among the households with an average monthly income of over 100,000 kyat, 40 percent perceived that their total assets were improving, compared to around 20 percent for the other two groups ( $p < .001$ ). Of the households owning land, 28 percent said their total assets were improving, compared to 21 percent of households without land ( $p < .001$ ). There was no significant difference between male- and female-headed households.

**Table 62: Proportion of households who think total assets are: (n=3,328)**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
<b>Increasing</b>	16.8	24.6	7.8***	14.4	19.4	5*	2.8
<b>Staying much the same</b>	52.6	58	5.4*	57.5	65.3	7.8*	-2.4
<b>Decreasing</b>	30.6	17.4	-13.2***	28.1	15.3	-12.8***	-4

2013 data: Based on all 3,200 households interviewed in that year

By zone and comparison between male- and female-headed households						
	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total

<b>Increasing</b>	33.3***	19.7***	21.4***	25	24.2	24.8
<b>Staying much the same</b>	51.2***	68.5***	58.2***	59.3	59.3	59.3
<b>Decreasing</b>	15.5***	11.8***	20.4***	15.7	16.5	15.9

**By average household income and landownership**

	<50,000	50,000–100,000	>100,000	Own land	No land	Total
<b>Increasing</b>	18.7***	20.5***	40.4***	27.8***	20.7***	24.8
<b>Staying much the same</b>	60.7***	64.6***	48.9***	58.1	61	59.3
<b>Decreasing</b>	20.6***	14.9***	10.8***	14.2**	18.2**	15.9

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

### 4.13. Training

The two household surveys asked the respondents if they or a member of the household had attended four different types of trainings: crop production, livestock, fishery, and other vocational/livelihood trainings. As to be expected, given that the LIFT programme provides trainings to help poor households and communities to be more self-reliant, DiD between the two types of surveys were statistically significant for each type of training measured (Table 63 below).

However, for only two trainings—crop production and for other vocational/livelihood skills—were there significant increases in the proportion of LIFT households indicating they were trained. Among LIFT households, 9 percent in 2011 received crop production training, while in 2013 the proportion had increased to 16 percent ( $p < .001$ ). At the same time, the number of Control households receiving such training declined significantly, from 3 to .5 percent ( $p < .005$ ).

For other vocational/livelihood skill training, there was an increase from 4 to 7 percent of LIFT households receiving this training ( $p < .05$ ), while it decreased from 3 to 0.2 percent in the Control households ( $p < .001$ ).

Although the change of difference for livestock and fisheries training was statistically significant, the difference was caused not by any increases among LIFT households, rather by significant reductions among Control households.

The 2013 data from all the interviewed households reveal that a greater proportion of Coastal/Delta zone households attended the crop production training compared to households from the other two zones. From this zone, 15 percent of households had a member who was trained, compared to 11 percent from households in the Hilly zone, and 4 percent from Dry zone households ( $p < .001$ ). Fifteen percent of households with an average income of over 100,000 kyat attended crop production trainings, compared to under 9 percent of households in the other two income groups ( $p < .001$ ). Once again, 15 percent of households with land, compared to 3 percent of those without land, attended crop production trainings ( $p < .001$ ). There was no

significant difference between male- and female-headed households and whether a member from the household attended the various trainings.

**Table 63: Proportion of households being trained (n=3,328)**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
<b>Crop production</b>	8.9	15.6	6.7***	3	.5	-2.5**	9.2***
<b>Livestock</b>	6.5	7.4	.9	4.5	.7	-3.8***	4.7*
<b>Fisheries</b>	.7	.7	0	1.6	.2	-1.4*	1.4*
<b>Other vocational/livelihood skill</b>	4.3	6.7	2.4*	2.8	.2	-2.6***	5**
<b>2013 data: Based on all 3,200 households interviewed in that year</b>							
<b>By zone and comparison between male- and female-headed households</b>							
	Hilly	Dry	Coastal / Delta	Male headed	Female headed	Total	
<b>Crop production</b>	11.3***	4***	14.6***	10.3	8.4	9.9	
<b>Livestock</b>	5.3*	3.5*	5.9*	5.2	3.7	4.9	
<b>Fisheries</b>	.3**	0**	1**	.5	0	.4	
<b>Other vocational/livelihood skill</b>	3.1***	2.4***	5.6***	3.8	3.3	3.7	
<b>By average household income and landownership</b>							
	<50,000	50,000–100,000	>100,000	Own land	No land	Total	
<b>Crop production</b>	7.6***	8.7***	15.3***	14.7***	3.4***	9.9	
<b>Livestock</b>	4	5.3	5.5	4.9	4.8	4.9	
<b>Fisheries</b>	.2	.5	.8	.2**	.8**	.4	
<b>Other vocational/livelihood skill</b>	2.6*	4.3*	4.3*	3*	4.7*	3.7	

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

The respondents were asked if they sent a household member to one of the above-mentioned training, and who was sent: a male, a female, or both a male and a female. The majority of the training participants were males (Table 64 below). This was the case for all but for the other vocational/livelihood training, in which female members were more likely to attend. There was no statistically significant difference in the changes between the LIFT and Control households and the sex of the training participants over the two surveys.

**Table 64: Sex of the household participants in the training**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
<b>Proportion of households that sent a member to the crop production training: n=267 for LIFT and 20 for control households</b>							
<b>Male members</b>	66	77.1	11.1	70.6	100	29.4	-18.3
<b>Female members</b>	32	20.6	-11.4*	29.4	0	-29.4	18
<b>Both male and female members</b>	2.1	2.4	0.3	0	0	0	0.3
<b>Proportion of households that sent a member to the livestock training: n=151 for LIFT and 30 for control households</b>							
<b>Male members</b>	57.7	66.3	8.6	69.2	75	5.8	2.8
<b>Female members</b>	39.4	32.5	-6.9	26.9	25	-1.9	-5
<b>Both male and female members</b>	2.8	1.3	-1.5	3.8	0	-3.8	2.3
<b>Proportion of households that sent a member to the fishery training: n=16 for LIFT and 10 for control households</b>							
<b>Male members</b>	62.5	87.5	25	55.6	100	44.4	-19.4
<b>Female members</b>	37.5	12.5	-25	44.4	0	-44.4	19.4
<b>Proportion of households that sent a member to the other vocational/livelihood skills training: n=120 and 17 for control households</b>							
<b>Male members</b>	46.8	32.9	-13.9	50	0	-50	36.1
<b>Female members</b>	53.2	60.3	7.1	50	100	50	-42.9
<b>Both male and female members</b>	0	6.8	6.8	0	0	0	6.8

\*p-value < 0.05, \*\*p-value <0.005, \*\*\*p-value <0.001

The respondents were also asked a family member had been trained if they had used their newly gained skills or not. Positively, among LIFT households who had a member attending crop production, livestock, and fishery trainings, 80 percent or more stated that they had used their new skills (Table 65). For other vocational/livelihood skills, the proportion indicating that they had used their news skills was less than 70 percent.

**Table 65: Whether the household trained members used their new skill**

	LIFT 2011	LIFT 2013	Change in LIFT villages	Control 2011	Control 2013	Change in Control villages	Difference in differences
<b>For crop production n=267 for LIFT and 20 for Control households For livestock training n=151 for LIFT and 30 for Control households For fishery skills n=16 for LIFT and 10 for Control households For other vocational/livelihood skills n=120 and 17 for Control households</b>							
Used crop production skills	81.4	82.9	1.5	70.6	66.7	-3.9	5.4

Used livestock skills	76.1	80	3.9	53.8	25	-28.8	32.7
Used fishery skills	87.5	87.5	0	55.6	0	-55.6	55.6
Used other vocational/ livelihood skills	57.4	65.8	8.4	56.3	100	43.7	-35.3

\*p-value < 0.05, \*\*p-value <0.005, \*\*\*p-value <0.001

FGD participants generally viewed the training provided by LIFT partners as useful and successful, regardless of geographical location and economic status:

“Because of the trainings, the villagers get better result in agriculture and livestock. At first, only those who attended the training use the new method. Now, most of the villagers use the new method by imitating the method used by the trained members” (Hilly zone).

Both agricultural training and vocational training provided important opportunities to improve productivity and income for those involved. FGD participants found training useful because of the link to higher incomes, improved education, and increased knowledge. In a village in the Hilly Zone, one FGD participant said that his

“... plants yielded three times more than before since he was using the method from the training and had enough water in his farm”.

In a village in the Dry Zone, farmers found that training in agriculture increased knowledge and capacity to use new technologies. Using the new methods brought an increase in production and therefore they had more food to eat. In villages where planting was extended to new areas as a result of new agricultural methods, more casual jobs were provided, which meant that casual labourers were able to stay in the village rather than seeking work elsewhere.

In addition, some villagers changed jobs as a result of training:

“Careers have changed in the village. In the past there were 10 people working in sewing or mechanics and now there are 19 or 20” (Dry zone).

Changing jobs sometimes brought with it better working conditions. For example, in the Dry zone, FGD participants who received sewing training found it

“... useful for the long-term because those who earn by sewing are getting kyat 1500–2000 per day and they do not need to work in the sun”.

Training for those breeding livestock was considered to be very useful:

“In livestock training, people did not know how to take care of pigs before. After attending the training, people got knowledge and they can take care of their pigs” (Coastal/Delta zone).

In a village in the Coastal/Delta zone, where training for fishermen was conducted, participants who received the training for fish farming and making fish-related products (dried fish or fish paste) said it was successful and that villagers could share their technical knowledge with

other households, thereby helping others to increase their incomes and standard of living.

In a few cases, FGD participants were critical of the training, either because no one implemented the new methods taught or because the training was not available for all villagers. For example, in a village in the Coastal/Delta zone, agricultural training for terrace cultivation was not considered appropriate for the village, and FGD participants said that it was not implemented. Other complaints regarding training were focused on availability of training for certain groups (mostly farmers) to the exclusion of others (fishermen, landless) (all three zones). An example was training sessions for breeding pigs, in which participants had to have past experience in this field to be enrolled. FGD participants felt this criterion excluded the poorest and as one person stated:

“The projects do not help the poorest households. Instead, those with some resources benefit” (Hilly zone).

#### **4.14. Household water supply and usage**

No questions about household water supply and usage existed in the 2011 household questionnaire, but this information was perceived to be important to understand the living conditions of the villagers. Thus, an additional section focusing on this issue was added to the 2013 household questionnaire.

Given that it is not possible to make comparisons between the two rounds of data, the following information about household water supply and usage is baseline information, which will be used to make comparisons once the end-line survey is completed. For this reason, the data presented are based on all households interviewed in the 2013 survey, whether they had been interviewed in 2011 or not. As such, it is also possible to provide information about the three agro-ecological zones.

It must be noted that it is not possible to determine if differences between LIFT and Control households in how they sourced and used water existed in the past or whether present differences are as a result of the LIFT programme.

##### **4.14.1. Main source of drinking water**

Table 66 indicates the main sources of drinking water in the past 12 months in the rain season for the households. The main source was collected rainwater; this was the case for close to a third of both LIFT and Control households. However, great variation existed between the three agro-ecological zones; it was the main source of water for over 80 percent of Coastal/Delta households, but less than 10 percent of Hilly and Dry households ( $p < .001$ ).

The second most common source of drinking water for the study's households was tube well/boreholes, with 16 percent of the households using this source during the monsoon. LIFT households were more likely to have this as their main source of drinking water than Control households, with 17 and 12 percent doing so, respectively ( $p < .001$ ). For Dry zone households, this was the most important source of drinking water, with 42 percent of these households



indicating this to be the case. However, not one household in the Coastal/Delta zone used such a source for drinking water.

**Table 66: The households' main source of drinking water in the past 12 months in the rainy season (n=3,200)**

	Hilly	Dry	Coastal/ Delta	LIFT	Control	Total
Piped water into dwelling	10.9***	.5***	.1***	4.4*	2.3*	3.8
Piped water to yard/plot	9.7***	1.9***	0***	3.4*	5.3*	3.9
Tube well/borehole	4.7***	42.4***	0***	17.2***	11.5***	15.8
Protected dug well	20.6***	13.6***	7.2***	13.4	15.1	13.8
Unprotected dug well	5.2***	2.1***	.5***	2.3*	3.6*	2.6
Protected spring	25.7***	2.6***	.3***	9.3	10.5	9.6
Unprotected spring	9***	.6***	.2***	4***	1.3***	3.3
Rainwater collection	6.2***	8.1***	82.5***	31.8	32.8	32
Surface water	2.8***	25.9***	9.3***	11.8*	15.5*	12.7

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

During the winter season, collected rainwater was no longer the most important source of drinking water, accounting for only 2 percent of households (Table 67). "Surface water" (river, dam, lake, pond, stream, canal, irrigation channels) was the most important source during this period, being so for 38 percent of all households. Control households (41 percent) were more likely to use this as a drinking water source than were LIFT households (37 percent) ( $p < .05$ ). Reflecting the climatic and geographic variation between the three agro-ecological zones, there were differences between the households in these zones and whether they used this source of drinking water. In Coastal/Delta zone, close to 90 percent of households used this source during the winter season, compared to close to a quarter of households in the Dry zone, and 4 percent in the Hilly zone ( $p < .001$ ).

The second most common source of drinking water during the winter season was tube well/boreholes as was the case during the monsoon season. One in five LIFT households used this source during the winter, compared to 15 percent of Control villages ( $p < .001$ ). Further, as during the monsoon season, this water source was far more likely to be used by Dry zone households, with over half of them using this source, compared to households in both the Hilly and Coastal/Delta zone households where less than 5 percent of households used this source ( $p < .001$ ).

**Table 67: The households' main source of drinking water in the past 12 months in the winter season (n=3,200)**

	Hilly	Dry	Coastal/ Delta	LIFT	Control	Total
<b>Piped water into dwelling</b>	8.9***	.5***	0***	3.7**	1.5**	3.1
<b>Piped water to yard/plot</b>	8***	2***	0***	2.6***	5.5***	3.5
<b>Public tap/standpipe</b>	3.5***	2.1***	0***	2.3*	.9*	1.9
<b>Cart with small tank/drum</b>	.1	.3	.3	.3	0	.2
<b>Tanker/truck</b>	.3	.5	0	.3	0	.3
<b>Tube well/borehole</b>	4.7***	50.2***	1.5***	20.3***	14.6***	18.9
<b>Protected dug well (Brick-lined well)</b>	22.2***	13.5***	7.7***	14.2	15.5	14.5
<b>Unprotected dug well</b>	6.7***	2.9***	.8***	3.3	4	3.5
<b>Protected spring</b>	27.4***	2.2***	.2***	9.1**	12.6**	10.1
<b>Unprotected spring</b>	9.5***	.5***	0***	3.9**	1.6**	3.3
<b>Rainwater collection</b>	2.6***	.8***	3.7***	2.9***	.8***	2.4
<b>Bottled purified water (Purchased)</b>	1.9***	.1***	0***	.3***	1.6***	.7
<b>Surface water (river, dam, lake, pond, stream, canal, irrigation channels)</b>	4.2***	24.4***	85.9***	36.8*	41.4*	37.9

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

The main source of drinking water during the summer season was similar to the winter season (Table 68 below). The most common source was surface water (river, dam, lake, pond, stream, canal, irrigation channels), accounting for 37 percent of all households. LIFT households, like during the winter season, were less likely to have this as their main source than were Control households ( $p < .05$ ). Also, households in the Coastal/Delta zone were more likely to use this source, with nearly 90 percent of them doing so, compared to under 20 percent in Dry zone households, and 6 percent of Hilly zone households ( $p < .001$ ).

As during the winter season, the second most common source of drinking water during the summer season was tube well/boreholes, with 21 percent of households using this source. Further, as during the winter season, LIFT households were more likely to use this source than Control households ( $p < .005$ ), and Dry zone households were far more likely to use this source than households in the other two zones ( $p < .001$ ).

**Table 68: The households' main source of drinking water in the past 12 months in the summer season (n=3,200)**

	Hilly	Dry	Coastal/ Delta	LIFT	Control	Total
Piped water into dwelling	7.7***	.5***	0***	3.3**	1.1**	2.8
Piped water to yard/plot	7.6***	1.9***	0***	2.5***	5.4***	3.2
Public tap/standpipe	3.9***	2.3***	0***	2.3	1.5	2.1
Cart with small tank/drum	.1	.4	.5	.4	0	.3
Tanker/truck	.5**	1.1**	0**	.7*	0*	.5
Tube well/borehole	4.8***	57.5***	1.5***	22.6**	17.6**	21.3
Protected dug well (Brick-lined well)	22.2***	14.6***	7.8***	14.4	16.3	14.9
Unprotected dug well	6.7***	3***	.7***	3.3	4	3.5
Protected spring	26.2***	.8***	.2***	8.6	10.8	9.1
Unprotected spring	10.4***	.1***	0***	4.1**	1.6**	3.5
Rainwater collection	2.3***	.2***	2.2***	2.1***	0***	1.6
Bottled purified water (Purchased)	2***	.1***	.1***	.4***	1.6***	.7
Surface water (river, dam, lake, pond, stream, canal, irrigation channels)	5.6***	17.6***	87.1***	35.3*	40.1*	36.5

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

#### 4.14.2. Treatment of drinking water

LIFT households were more likely to clean their drinking water before consuming it than were the Control households ( $p < .005$ ) (Table 69 below). Over 90 percent of LIFT households cleaned their drinking water, compared to 88 percent of Control households. There was also a significant statistical difference between households treating their drinking water and whether they were Hilly, Dry or Coastal/Delta households ( $p < .001$ ). Close to 100 percent of Coastal/Delta and Dry zone households were cleaning their water before drinking it, but less than three-quarters were doing so in the Hilly zone households. It is not clear from the data whether Hilly zone households are drinking unclean water, or that their source of drinking water is cleaner and therefore did not need to be treated.

Households used a number of methods to ensure their drinking water was clean, with many using more than one method. The main method was straining the water through a cloth. Control households were far more likely to use this method, with over three-quarters of them doing so, than were LIFT households, as only 64 percent used this method ( $p < .001$ ). The second most common method of treating the drinking water was to boil it, with two-thirds of all households using this method. There was no statistically significant difference between the LIFT and Control households for this method. However, such a difference did exist between the three agro-ecological zones; just over three-quarters of the households in both the Hilly and

Dry zones used this method, compared to less than 50 percent in the Coastal/Delta zone.

A possible impact of the LIFT intervention is that twice as many LIFT households were using water filters than were Control households; 13 percent of LIFT households were doing so compared to 6 percent of the Control households ( $p < .001$ ). As noted above, without earlier data to compare, it is not possible to determine if it is the LIFT intervention that is causing this difference. However, one implementing partner has distributed ceramic water filters to its beneficiary households.

**Table 69: Cleaning the water**

	Hilly	Dry	Coastal/ Delta	LIFT	Control	Total
<b>Proportion of households treating water to make it drinkable (n=3,200)</b>	74***	97.9***	99.1***	91.3**	87.5**	90.3
<b>How they clean the water (n=2,890)</b>						
<b>Boil</b>	76.9***	75.5***	47.9***	65.5	67	65.9
<b>Add bleach/chlorine/iodine</b>	.1***	.3***	1.5***	.9*	.1*	.7
<b>Strain it through a cloth</b>	33.2***	71.2***	88.1***	64.1***	75.6***	66.9
<b>Use a water filter</b>	1.3***	22.9***	6.8***	12.6***	6.4***	11.1
<b>Let it stand and settle</b>	23.2***	4.3***	24.5***	17.1	15.7	16.8
<b>Aluminium</b>	0***	.8***	3.9***	2.1**	.3**	1.7

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

Improving access to water was a common theme that emerged in FGDs. Respondents across the three agro-ecological zones indicated that the LIFT interventions had improved the quality of their lives significantly regarding access to water. Examples of this include the following quotes:

“The villagers took water from stream before. But now the village has 30 tube wells because of LIFT” (Dry zone).

“People now have adequate drinking water because there are now more wells and ponds” (Dry zone)

“Building a water tank is a great asset for the villagers, because it was very difficult for us villagers to carry water from the river” (Dry zone).

The increased availability of water was perceived to have contributed to an increased income:

“A significant change for us is that vegetables can be grown in summer because of the new water tank. The water tank is useful, because of it our income has increased from selling vegetables” (Hilly zone).

## 5. Nutrition and anthropometry findings

This section of the report is based on the nutrition and anthropometry survey, which was given to every selected household that had a child of less than 5 years of age. It was not administered in the first round, and as such provides a baseline of the health and well-being of children. Being a baseline, details below are shown for both LIFT and Control households and also for the three agro-ecological zones.

In total, there were 3,296 children of this age in the selected households (Table 70 below). There was no significant difference between LIFT and Control households and whether they had children less than 5, with 37 and 35 percent of these households doing so. However, there was a significant difference between the households in the three agro-ecological zones, with 45 percent of Hilly zone households have children of this age, compared to 35 percent for Coastal/Delta and 29 percent for Dry zone households.

**Table 70: Proportion of households with children**

	Hilly	Dry	Coastal/ Delta	LIFT	Control	Total
<b>Proportion of households with children age under 5</b>	45.4***	28.5***	34.9***	36.9	34.5	36.3
<b>Number of children aged under 5</b>	1,219	984	1,093	2,461	835	3,296

\*p-value < 0.05, \*\*p-value <0.005, \*\*\*p-value <0.001

### 5.1. Stunting, underweight, and wasting

Anthropometric indicators for children under 5 years of age provide outcome measures of nutritional status. Height (length) and weight measurements are taken using standardised procedures and compared with the 2006 WHO Child Growth Standards, which are based on an international sample of ethnically, culturally, and genetically diverse healthy children living under optimum conditions conducive to achieving a child's full genetic growth potential. Use of the 2006 WHO Child Growth Standards is based on the finding that well-nourished children of all population groups for which data exist follow similar growth patterns before puberty.

Weight-for-age takes into account both chronic and acute malnutrition, and is often used to monitor nutritional status on a longitudinal basis. Children who are less than two standard deviations (SDs) below the median of the WHO Standards population in terms of weight-for-age may be considered underweight.

The height-for-age index provides an indicator of linear growth retardation (stunting) among children. Children who are less than two SDs below the median of the WHO Standards population in terms of height-for-age may be considered short for their age ("stunted") or chronically malnourished. Severe linear growth retardation ("stunting") reflects the outcome of a failure to receive adequate nutrition over a number of years, and is also affected by recurrent

and chronic illness. Height-for-age, therefore, represents a measure of the long-term effects of malnutrition in a population and does not vary appreciably according to the season of data collection.

Weight-for-height is a measure of acute malnutrition or wasting, a predictor of child mortality. Children who are less than two SDs below the median of the WHO Child Growth Standards population in terms of weight-for-age are considered wasted.

Valid height and weight measurements were obtained for a total of 3,972 children ages 0–59 months; 2,978 from LIFT and 994 from Control villages. These measurements were used to calculate three indicators:

- Prevalence of underweight children ages 0–59 months (weight-for-age)
- Prevalence of stunted children ages 0–59 months (height-for-age)
- Prevalence of wasted children ages 0–59 months (weight-for-height)

Table 71 (below) provides the results for these anthropometric indicators. A total of 22 percent of children under 5 years of age in the survey population showed signs of being moderately or severely underweight (less than two SDs below the median). Figure 3 (below) shows that the proportion of underweight children is lowest among children ages 0–5 months (6.5 percent), and highest among those ages 48–60 months (28 percent). The proportion of underweight children was the same for both LIFT and Control households.

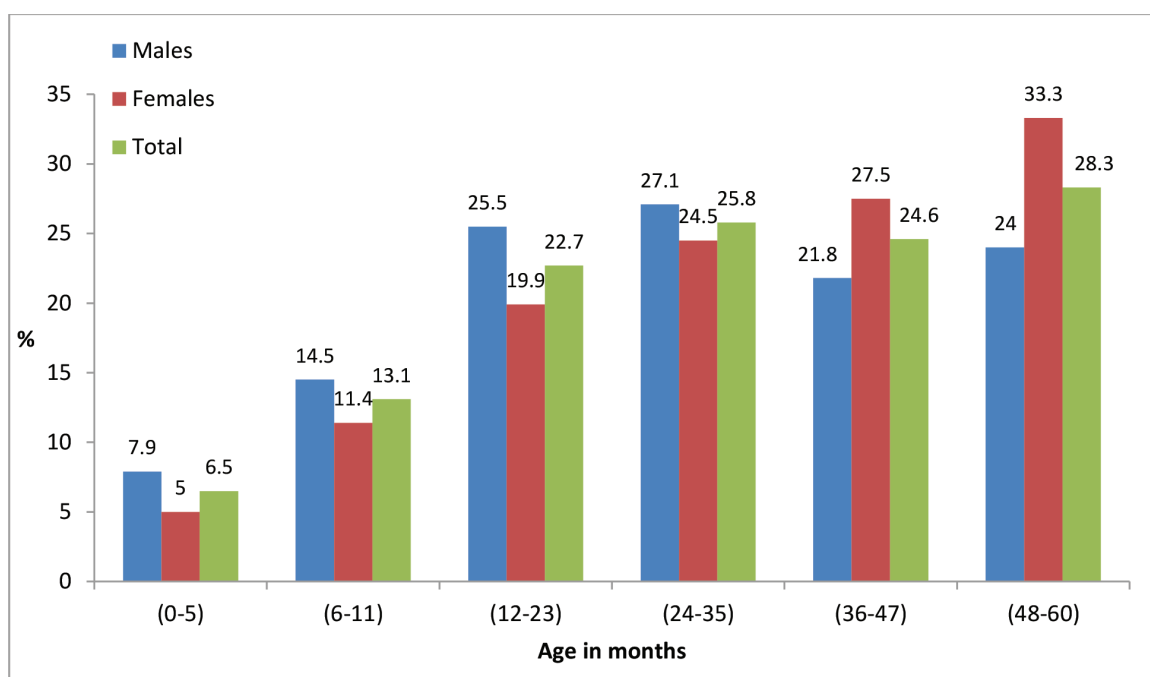
Slightly under a third of the children (32 percent) under 5 years of age in the survey population showed signs of moderate and severe stunting (less than two SDs below the median). Figure 4 (below) shows that the age group with the lowest proportion of stunting was those aged 0–5 months, with 9.5 percent of them suffering from this. Those aged 36–47 months had the highest proportion, with 42 percent of them showing signs of moderate and severe stunting. Rates of stunting were the same in the LIFT and Control households.

Finally, 8 percent of children under 5 years of age in the survey population showed signs of moderate and severe wasting (less than two SDs below the median). There was a slight difference of prevalence of wasting in LIFT and Control households, with the rates being 7 and 9 percent, respectively.

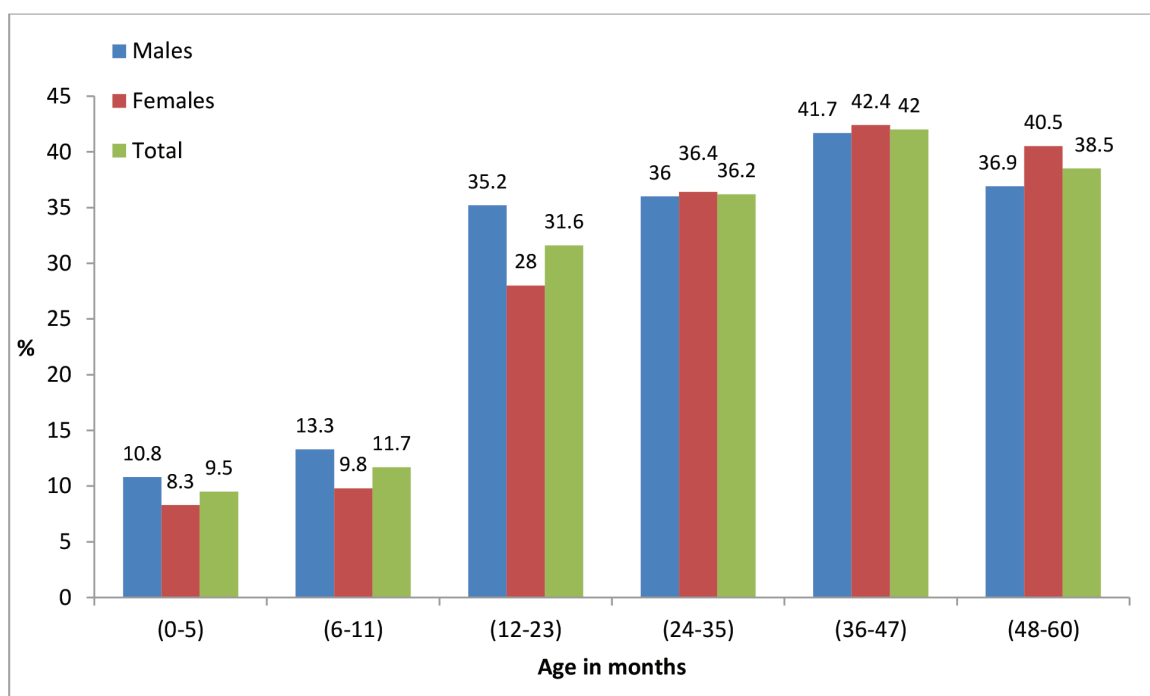
**Table 71: Children’s nutrition status (0–60 months) (n=3,972)**

	Total	Males	Females	LIFT	Control	Hilly	Dry	Coastal/ Delta
<b>Prevalence of underweight children (weight-for-age)</b>								
<b>Total</b>	22.2	21.9	22.6	22.1	22.7	19.4	26.5	22
<b>Prevalence of stunted children (height-for-age)</b>								
<b>Total</b>	31.9	32.4	31.3	32.1	31.5	38.9	27.5	27
<b>Prevalence of wasted children (weight-for-height)</b>								
<b>Total</b>	7.4	7.9	7.9	6.8	9	3.8	10.2	9.4

**Figure 3: Prevalence of underweight children aged 0–60 months by age groups**



**Figure 4: Prevalence of stunted children aged 0–60 months by age groups**



## 5.2. Breastfeeding

Breastfeeding is an important factor in predicting the future health of children. Research indicates a strong link between breastfeeding and the development of a child's immune

system.<sup>12</sup> United Nations Children’s Fund and WHO recommend that children be exclusively breastfed (no other liquid or solid food or plain water) during the first 6 months of life, and that children be given solid/semi-solid complementary food in addition to continued breastfeeding beginning when the child is 6 months old, and continuing to 2 years and beyond.

Introducing breast milk substitutes to infants before 6 months of age can contribute to limiting breastfeeding, which has negative implications for a child’s health and development. Substitutes such as formula, other kinds of milk, and porridge are often watered down and provide too few calories. Lack of appropriate complementary feeding may lead to malnutrition, frequent illnesses, and possibly death.

There was a statistically significant difference between the proportion of LIFT and Control babies—aged 6 months or less—and whether they were being breastfed or not (Table 72 below). Among the babies in LIFT households, 99 percent were being breastfed, compared to 96 percent in Control households ( $p < .05$ ). There was no significant difference between the Hilly, Dry, and Coastal/Delta households with babies and whether they were breastfeeding or not.

There was little difference between households with babies and whether they were breastfed with no solids.<sup>13</sup> Apart from babies aged 1 month old, there was no significant difference between LIFT and Control households and between households in the three agro-ecological zones and whether they were breastfeeding or not. For babies of 1 month old, 96 percent of the babies in the LIFT households and 77 percent of them in the Control households were being breastfed without receiving solids ( $p < .05$ ).

**Table 72: Children 6 months and under being breastfed (n=489)**

	Hilly	Dry	Coastal/ Delta	LIFT	Control	Total
<b>Is being breastfed</b>	98.5	100	97.2	99.4*	96.2*	98.6
<b>Breastfeeding with no solids</b>						
<b>0 months</b>	95.7	100	100	97.4	100	97.9
<b>1 month</b>	88	90.9	92	96*	77.3*	90.3
<b>2 months</b>	89.5	78.3	82.6	86.7	75	83.1
<b>3 months</b>	80	76	88.9	78.9	85.7	80.8
<b>4 months</b>	54.1	54.2	78.6	64.2	45.5	58.7

12 See the following for more information on breast milk and the immune system: Slade, H. B., & Schwartz, S. A., [Mucosal immunity: The immunology of breast milk](#), *J Allergy Clin Immunol* 1987 Sep;80(3 Pt 1):348-58; Cunningham, A. S., Jelliffe, D. B., & Jelliffe, E. F. [Breast-feeding and health in the 1980s: A global epidemiologic review](#), *J Pediatr* 1991 May;118(5):659-66; and Goldman, A. S., [The immune system of human milk: Antimicrobial, anti-inflammatory and immunomodulating properties](#). *Pediatr Infect Dis J* 1993 Aug; 12(8):664-71.

13 In the questionnaire, there was no question asking whether the children were exclusively breastfed or not. From the survey, it is possible to determine who was being breastfed without solids, but it is not possible to determine if the babies were given other liquids or not.



<b>5 months</b>	52.8	42.9	63.6	55.4	42.9	53.2
<b>6 months</b>	40	30.4	20.8	32	27.3	30.6
<b>Total proportion of babies 0–6 months being breastfed without solids</b>	68.7	64.6	73.2	71.1	62.6	68.8

\*p-value < 0.05, \*\*p-value <0.005, \*\*\*p-value <0.001

### 5.3. Children with diarrhoea

Dehydration caused by severe diarrhoea is a cause of morbidity and mortality among young children, although the condition can be easily treated with oral rehydration therapy. Exposure to diarrhoea-causing agents is frequently related to the use of contaminated water and to unhygienic practices in food preparation and disposal of excreta. Caretakers were asked whether any children under age 5 had diarrhoea at any time during the 2-week period preceding the survey.

In both the LIFT and Control households, 15 percent of children aged less than 5 had diarrhoea in the 2 weeks before the survey (Table 73 below). Children in Hilly zone households were the most likely to have diarrhoea, with 20 percent of them doing so. In the Dry and Coastal/Delta zones households, 12 percent of the children had diarrhoea ( $p < .001$ ).

Overall, there was a significant relationship between whether households cleaned their drinking water and whether their children had diarrhoea or not ( $p < .005$ ). However, this relationship between cleaning drinking water and children having diarrhoea took place only in LIFT households (also  $p < .005$ ). There was no such relationship for Control, Hilly, Dry, or Coastal/Delta zone households.

**Table 73: Proportion of children with diarrhoea in the last 2 weeks (n=4,067)**

	Hilly	Dry	Coastal/ Delta	LIFT	Control	Total
<b>Children with diarrhoea in the last 2 weeks</b>	19.8***	12***	11.9***	15.1	15.2	15.1
<b>Children with diarrhoea in households that did clean their water</b>	19.6	11.8	11.9	14.6**	14.5	14.5**
<b>Children in households that did NOT clean their water</b>	20.4	16.3	12.5	19.8**	19.4	19.7**

\*p-value < 0.05, \*\*p-value <0.005, \*\*\*p-value <0.001

## 5.4. Individual Dietary Diversity Score

A more diversified diet is an important outcome in and of itself.<sup>14</sup> A more diversified diet is associated with a number of improved outcomes in areas such as birth weight, child anthropometric status, and improved haemoglobin concentrations.

The nutrition survey results shows just over a third of households had an acceptable Individual Dietary Diversity Score (IDDS) (Table 74). Further, there were significant differences between LIFT and Control Households and the households in the three different zones. A third of LIFT households had an acceptable diversified diet, compared to 38 percent of Control households ( $p < .05$ ). In the Coastal/Delta zone, 43 percent of Coastal/Delta households had such a diet, compared to 36 percent in Dry zone households, and only 26 percent of Hilly zone households ( $p < .001$ ).

**Table 74: IDDS for 6- to 23-month-old children (n=3,701) based on seven food groups**

Number of food groups	Hilly	Dry	Coastal/ Delta	LIFT	Control	Total
<b>Poor (3 or less)</b>	73.6***	63.7***	57.1***	66.9*	61.8*	65.6
<b>Acceptable (greater than 4)</b>	26.4***	36.3***	42.9***	33.1*	38.2*	34.4

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

Note: Excludes children who were still being breastfed without solids.

Grains were the most common IDDS food group consumed in the 24 hours before the interview, with nearly every child consuming them (Table 75 below). This was followed by vitamin A fruits and vegetables (46 percent), other fruits and vegetables (44 percent), and flesh foods (44 percent). There was a statistically significant difference between LIFT and Control households in their consumption of legumes and nuts, with 30 percent of children in LIFT households and 41 percent of Control households eating these items in the last 24 hours ( $p < .05$ ). Also, such a difference existed for the consumption of other fruits and vegetables, with 42 and 51 percent of children from LIFT and Control households, respectively, eating these items ( $p < .05$ ).

There were differences between the IDDS between the three agro-ecological zones. Statistical significant differences existed for each IDDS food group, except for grains, roots, and tubers for which nearly 100 percent of children aged 6–23 consumed. Children from the Hilly zone were far more likely compared to children from the other zones to be eating vitamin A fruits and vegetables. Children from the Dry zone were more likely to be eating legumes and nuts, and eggs, but less likely to be consuming other fruits and vegetables than children in the other two zones. Children from the Coastal/Delta zone were far more likely to be eating flesh foods and dairy products compared to the other children.

14 Swindale, and 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.

**Table 75: IDDS food group consumption (excluding breast milk) of 6- to 23-month-old children in the 24 hours before the survey (n=861)**

IDDS Food Groups	Hilly	Dry	Coastal/ Delta	LIFT	Control	Total
<b>Percent of children</b>						
<b>Grains, roots, and tubers</b>	100	99.6	99.6	99.8	99.5	99.8
<b>Vitamin A fruits and vegetables</b>	63.9***	36.8***	30***	45.3	49.5	46.3
<b>Other fruits and vegetables</b>	49.7***	33.5***	47***	42.2*	50.9*	44.4
<b>Flesh foods</b>	23.5***	36.4***	70.8***	40.2	43.5	41
<b>Legumes and nuts</b>	26.5***	57.4***	19.4***	30.4**	41.2**	33.1
<b>Eggs</b>	18.6*	28.5*	19.8*	22.3	19.9	21.7
<b>Dairy products</b>	13.4*	16.9*	22.9*	17.2	17.1	17.2
<b>Other food groups</b>						
<b>Cooking oils and fats</b>	86.3***	96.3***	82.2***	86.8	91.2	87.9
<b>Sugary foods</b>	37.7***	60.7***	62.8***	51.2	52.8	51.6
<b>Salty foods</b>	9.8***	9.5***	22.9***	13.5	13.9	13.6

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

Note: Excludes children who were still being exclusively breastfed.

## 6. Expenditure findings

This section of the report is based on the household expenditure survey, which was given to every eighth LIFT and Control household that was interviewed in the second data collection round. It was not administered in the first round, and as such provides a baseline of the level of consumption of the selected households. For this reason, data are presented for both the LIFT and Control households and also for the three agro-ecological zones.

The World Bank defines poverty as whether households or individuals have enough resources or abilities today to meet their needs. Poverty is usually measured based on consumption levels rather than other measures, such as income. Actual consumption is more closely related to a person's well-being in the sense of having enough to meet current basic needs. Also, in poor agrarian economies, income may be difficult to estimate—it may be seasonal and erratic, and it may be difficult to estimate particularly for agricultural households whose income may not be monetised.

In this study, the prevalence of household poverty was measured using information on household expenditures to compute a household consumption aggregate. The consumption aggregates was constructed following guidelines from Deaton & Zaidi (2002)<sup>15</sup> and Grosh

15 Deaton, A. and S. Zaidi (2002), A Guide to Aggregating Consumption Expenditures, Living Standards Measurement Study, Working Paper 135. Available at: <http://siteresources.worldbank.org/INTPA/Resources/429966-1092778639630/deatonZaidi.pdf>.

& Muñoz (1996)<sup>16</sup> by adding together the various goods and services consumed by each household during a period of 12 months. The various components of consumption were grouped together into the following categories:

- Food consumption expenditures in the last 7 days consumed at home
- Other food consumption expenditures in the last 7 days
- Food consumption expenditures in the last 30 days
- Non-food consumption expenditures in the last 30 days
- Non-food consumption expenditures in 6 months
- Value of assets bought in the last 12 months

Expenditure was calculated by adding the value in Myanmar kyat of the items consumed by the household, as reported by household informants. These items were collected according to different time periods, but were then transformed into daily per capita consumption.

## 6.1. Food consumption

Computation of food consumption is complex because it involves products that are purchased in the market, where price information is available, and products that are home produced or received as a gift, where price information is not available. Even when products are purchased, it is often difficult for household informants to report the precise market value of the amounts consumed by the household over the reference period, which often results in missing data. The value of non-purchased food was imputed by transforming the amounts consumed by the household by a common reference unit for each zone, and multiplying the local median value of that unit times the amount consumed. The following tables (Tables 76–89) detail the per capita spending on food items of the LIFT and Control households, and for the households in the three agro-ecological zones.

**Table 76: Average daily per capita consumption in kyat of pulses, beans, nuts, and seeds**

	LIFT	Control	Hilly	Dry	Coastal/ Delta	Total
<b>Pulses, beans, nuts and seeds</b>	44.29	41.91	50.83***	55.19***	24.78***	43.69
<b>Pegyi (lablab beans)</b>	2.24	.83	2.16	2.63	.87	1.89
<b>Pegya</b>	1.39	1.53	2.38*	1.82*	0*	1.42
<b>Pepyin</b>	.34	.57	1.15***	0***	0***	.4
<b>Pe poke</b>	2.54	1.44	6.72***	0***	0***	2.26
<b>Sadawpe (green peas)</b>	2.54	2.1	1.01*	2.95*	3.33*	2.43
<b>Gram (Chick pea)</b>	11.89	11.4	14.47***	17.73***	2.99***	11.77
<b>Green gram (Pedesane)</b>	1.38	.19	.42**	2.78**	0**	1.08

16 Margaret Grosh and Juan Muñoz (1996). A Manual for Planning and Implementing the Living Standards Measurement Study Surveys. LSMS Working Paper #126, The World Bank. Available at: <http://documents.worldbank.org/curated/en/1996/05/438573/manual-planning-implementing-living-standards-measurement-study-survey>.

<b>Black gram (Matpe)</b>	.43	0	.98*	0*	0*	.34
<b>Penilay (Peyaza)</b>	3.5	4.88	2.71***	1.37***	7.51***	3.84
<b>Butter Bean</b>	1.13	.53	.24*	2.27*	.45*	.99
<b>Boiled Pea (any kind of peas)</b>	2.15	2.5	2.32	1.83	2.56	2.24
<b>Sesame</b>	.39	.29	0**	.5**	.58**	.36
<b>Groundnut without shell</b>	12.24	12.55	14.69***	19.2***	2.91***	12.31
<b>Coconut</b>	.96	1.71	.36***	.56***	2.54***	1.15
<b>Other pulses/beans/nuts/seeds</b>	1.16	1.32	1.2	1.47	.93	1.2

**Table 77: Daily per capita consumption in kyat of meat, dairy, eggs**

	LIFT	Control	Hilly	Dry	Coastal/ Delta	Total
<b>Meat, dairy, eggs</b>	103.05	91.13	111.67***	73.9***	114.87***	100.07
<b>Chicken</b>	31.9	24.84	35**	19.62**	35.87**	30.14
<b>Duck</b>	3.46	6.21	1.3***	.18***	11.05***	4.15
<b>Beef</b>	14.24	13.85	13.46	18	10.92	14.14
<b>Pork</b>	35.18	29.5	44.38***	20.47***	36.47***	33.76
<b>Mutton</b>	.12	.12	0	0	.27	.10
<b>Frogs</b>	0	.19	0	.14	0	.19
<b>Rats</b>	.15	.15	0	0	.25	.15
<b>Dogs</b>	0	0	0	0	0	0
<b>Dried Meat</b>	.39	.84	1.24		.27	.5
<b>Chicken eggs</b>	11.64	10.29	14.03***	13.96***	5.83***	11.3
<b>Duck eggs</b>	4.83	5.01	.55***	1.16***	13.03***	4.88
<b>Quail eggs</b>	.15	0	0	.15	0	.11
<b>Other meats</b>	.47	.15	.91*	0*	.26*	.39
<b>Fresh milk</b>	.48	.2	.61	.17	.46	.41

**Table 78: Daily per capita consumption in kyat of fish and other seafood**

	LIFT	Control	Hilly	Dry	Coastal/ Delta	Total
<b>Fish and other seafood</b>	76.98*	98.41*	40.91***	54.35***	152.8***	82.33
<b>Ngamyitchin</b>	.83	.5	.3*	1.65*	.28*	.75
<b>Ngagyin</b>	5.44*	2.58*	6.36***	7.74***	0***	4.72
<b>Ngayant</b>	7.32*	11.31*	5.19***	2***	17.91***	8.32
<b>Ngakhu</b>	3.02	3.75	.58***	.14***	8.97***	3.2
<b>Ngagyee</b>	0*	.63*	0*	0*	.6*	.22
<b>Ngapyayma</b>	2.34	1.92	.34***	.38***	6.04***	2.24

Ngaton/Ngamyinn	2.08	2.43	.74***	1.3***	4.5***	2.17
Ngathalauk	2.31*	5.82*	.12***	.16***	9.36***	3.18
Fish meat	.58*	1.69*	1.56	.19	.81	.85
Other small river fishes (<= 4")	6.87	8.75	6.01*	6.13*	9.93*	7.34
Other medium river fishes (5"-10")	2.27	4.36	1.69	2.17	4.56	2.8
Other large river fishes (11+")	0	.17	.21	0	.13	.11
Eel	.21	.44	0**	0**	.76**	.27
Kakatit	4.54	6.86	0***	0***	15.42***	5.12
Ngamoke	.48	.13	0	.32	.87	.39
Ngashwe	.15	.64	0	0	.75	.27
Ngapokethin	1.16	1.11	.21*	1.52*	1.71*	1.15
Sardine (All Kinds)	1.1	.37	2.06	.63	0	.91
Pazun Kyawt	6.11	7.55	0***	1.15***	18.38***	6.47
Pazun Doke	1.42	1	0***	0***	3.91***	1.31
Shellfish	0	.36	0*	0*	.43*	.14
Other small sea water fishes (<=4")	1.3*	4.05*	.11**	.9**	5**	1.99
Other medium sea water fishes (5"-10")	1.55	.67	.26	.7	3.06	1.33
Other large sea water fishes (11+")	.34	0	0	0	.78	.26
Nga Yantchawk	.71	2.06	2.11	.55	.49	1.05
Other dried small river fish (<=4")	2.81	3.38	2.84	3.65	2.36	2.95
Other dried medium and above river fish (5+")	1.04	2.06	1.68	1.94	.23	1.29
Ngakunshutchauk	.36	0	0	0	.71	.27
Other dried small sea water fish (<=4")	1.38	2.68	1.52	2.36	1.23	1.7
Other dried medium and above sea water fish (5+")	.53	.66	0	.28	1.36	.56
Dried prawns	3.55	4.1	1***	1.86***	8.29***	3.69
Shrimp paste	5.51	7.04	2.38***	7.41***	8.92***	5.89
Fish/shrimp sauce	1.66	1.69	.21***	1.57***	3.23***	1.66
Ngapiyae	3.87	2.54	.31***	1.53***	8.85***	3.54
Nagpikaung/salted fish	2.97	3.79	2.23	4.12	3.18	3.17
Other fish products Specify	0	0	.13	0	0	0
Ar Bye Gyauk	.6	.81	.51	1.24*	.2*	.65*
Dried prawn powder	.31	.45	.12	.35	.55	.34

**Table 79: Daily per capita consumption in kyat of roots and tubers**

	LIFT	Control	Hilly	Dry	Coastal/ Delta	Total
<b>Roots and tubers</b>	13.65	14.63	22.24***	6.48***	12.95***	13.89
<b>Sweet potatoes</b>	1.32	.95	2.18*	.2*	1.31*	1.23
<b>Potatoes</b>	8.09	7.21	10.32***	5.79***	7.49***	7.87
<b>Yams</b>	0	0	.11	0	0	.01
<b>Radish (small, medium, large)</b>	.36	.24	.57	0	.34	.33
<b>Taro</b>	2.48	2.77	6.12***	.4***	1.11***	2.55
<b>Other roots/tubers</b>	.52	2.3	2.76*	0*	.13*	.967
<b>Pemyit</b>	0	.2	.18	0	0	.01
<b>Palawpenan</b>	.81	.96	0***	0***	2.56***	.84

**Table 80: Daily per capita consumption in kyat of vegetables**

	LIFT	Control	Hilly	Dry	Coastal/ Delta	Total
<b>Vegetables</b>	93.41	87.21	118.33***	91***	65.87***	91.86
<b>Gourd</b>	3.51	2.23	5.70**	3.08**	.74**	3.19
<b>Pumpkin</b>	8.71	9.31	19***	6.54***	.92***	8.86
<b>Ash pumpkin</b>	1.02	1.28	1.13	1.55	.57	1.09
<b>Brinjal/eggplant</b>	5.73	5.67	5.52***	8.88***	2.72***	5.72
<b>Tomato</b>	10.82	9.52	12.53***	15.68***	3.16***	10.49
<b>Cabbage</b>	3.06	2.78	3.35***	1.36***	4.27***	2.99
<b>Cauliflower</b>	2.56	.62	6.05*	.11*	0*	2.07
<b>Chayote</b>	4.77	4.94	10.61***	.75***	3.06***	4.81
<b>Water leaf small, medium, large</b>	7.83	7.07	5.81**	7.59**	9.53**	7.63
<b>Roselle leaf small, medium, large</b>	6.27	5.78	0***	12.51***	5.94***	6.14
<b>Horseradish leaf small, medium, large</b>	0.56	.18	.21	.8	.39	.47
<b>Radish leaf small, medium, large</b>	0.85	.55	1.41**	.11**	.82**	.78
<b>Pumpkin leaf small, medium, large</b>	3.86	3.34	7***	4.09***	0***	3.73
<b>Cucumber</b>	5.34	3.65	6.71***	.52***	7.56***	4.92
<b>Horseradish</b>	0	0	0	0	0	0
<b>Bean/long bean small, medium, large</b>	4.47	5.35	5.37	3.05	5.67	4.69
<b>Bamboo shoots</b>	4.4	5.34	2.07***	6.84***	5***	4.63
<b>Bean sprouts</b>	1.2	.68	.83	1.12	1.27	1.07
<b>Carrots</b>	.23	0	.29	.23	0	.19
<b>Lettuce</b>	0	0	0	0	0	0

Fresh chillie	7.09	8.24	8.31**	5.53**	8.31**	7.38
Lime	1.45	2.43	2.25*	.59*	2.24*	1.69
Other vegetables	.98	1.09	.49	1.59	.93	1
Mustard leaf small, medium, large	2.93	3.28	8.87***	0***	0***	3.02
Kinmoon small, medium, large	.51	.29	.13*	.88*	.36*	.46
Subok small, medium, large	1.08	.77	0***	2.8***	.12***	1
Gourd leaf small, medium, large	.92	.8	.88***	1.74***	0***	.89
Fresh pepper/sweet pepper	.57	.46	.24	.81	.57	.54
Cat tongue	.57	.33	.14*	.81*	.58*	.51
Kha We	1.15	.49	2.04**	.88**	0**	.98
Citrics	.83	.65	1.27	.29	.80	.79

**Table 81: Daily per capita consumption in kyat of fruits**

	LIFT	Control	Hilly	Dry	Coastal/ Delta	Total
<b>Fruits</b>	26.6	26.39	23.26**	24.44**	32.03**	27
Banana	12.71	13.88	6.84***	13.87***	18.38***	13
Papaya	.82	.84	.73	.84	.91	.83
Guava	4.88	3.99	5.17***	1.8***	7.04***	4.66
Grapefruit	.17	.53	.76**	0**	0**	.26
Watermelon	.49	.11	.17	.85	.16	.4
Pineapples	0	.11	.11	.14	0	.01
Mangoes	0	0	0	0	0	0
Custard apple	1.45	1.79	0***	4.41***	.15***	1.53
Apple	3.49	2.72	3.62	2.27	4.01	3.3
Pear	.27	0	.63*	0*	0*	.22
Other fruits	.47	.14	.89*	0*	.23*	.38
Pomelo	0	0	0	0	0	.01
Oranges	1*	2.2*	3.11***	0***	.7***	1.3
Sunkist	0	0	.13	0	0	0
Grapes	.67	0	1.02	.15	.33	.5

**Table 82: Daily per capita consumption in kyat of spices and condiments**

	LIFT	Control	Hilly	Dry	Coastal/ Delta	Total
<b>Spices and condiments</b>	64.59*	71.61*	65.82***	59.06***	74.27***	66.34
Dried chillies	11.92	14.1	6.74***	10.12***	20.66***	12.47
Chilli powder	3.13	4.03	4.27	3.21	2.58	3.36



Lemon grass	.46	0	0	0	1.01	.37
Onions	14.68	14.2	13.93	14.72	15.02	14.56
Garlic	11.25	11.98	14.68***	9.51***	10.07***	11.43
Turmeric powder	4.01	4.32	3.86	4.02	4.38	4.08
Ginger	2.45	2.42	5.88***	.87***	.55***	2.44
Salt	4.88*	5.62*	6.08***	3.73***	5.38***	5.06
Seasoning powder	10.86*	13.59*	10.03*	12.42*	12.19*	11.54
Black pepper	.3	.24	.17***	0***	.64***	.29
Gloves	0	0	0	0	0	0
Mustard seeds	0	0	0	0	0	0
Masala	.64*	1.04*	.13***	.35***	1.76***	.74

**Table 83: Daily per capita consumption in kyat of other food products**

	LIFT	Control	Hilly	Dry	Coastal/ Delta	Total
Other food products	23.18	22.04	24.83***	12.77***	31.22***	22.9
Dried rice noodle	4.05	3.09	4.12*	2.09*	5.23*	3.81
Dried wheat noodle	4.28	5.26	4.93	3.57	5.09	4.52
Rice vermicelli	1.12	1.42	.35***	.79***	2.45***	1.19
Bread number	2.69	3.84	4.33***	.68***	3.92***	2.97
Cake number	4.84	4.49	5.3**	.74**	8.26**	4.75
Biscuits—packets	3	2.67	2.46**	1.95**	4.36**	2.91
Pone Ye Gyi—packets	.53*	0*	0**	.39**	.84**	.42
Bean curd (white)	.47	.17	.31	.37	.5	.39
Tofu Number	1.31	.94	2.5***	1.09***	0***	1.22
Soy bean paste	.36	0	.18	.48	.19	.28
Vermicelli (bean)—bundles	.55	0	.31	.62	.35	.43

**Table 84: Daily per capita consumption in kyat of alcoholic beverages consumed at home or outside of home**

	LIFT	Control	Hilly	Dry	Coastal/ Delta	Total
Alcoholic beverages	15.07	20.42	27.61	11.8	9.7	16.4
Beer	3.84	2.56	5.45	1.59	3.52	3.52
Toddy/nipa palm alcohol	0	0	0	.20	0	0
Local liquors/alcohol	4.17*	17.38*	17.24**	1.43**	3.68**	7.47
Imported liquors/alcohol	6.97	.19	4.7	8.57	2.51	5.28
Rice wine (Khaung Ye)	0	.29	.21	0	0	0

**Table 85: Daily per capita consumption in kyat of food and beverages taken outside home**

	LIFT	Control	Hilly	Dry	Coastal/ Delta	Total
<b>Food and beverages</b>	19.46	13.93	14.74***	5.19***	34.54***	18.08
Fried rice	.92	.5	.58	.67	1.22	.82
Fried bean curd (Tofu)	.63	.64	1.88***	0***	0***	.64
Fried vermicelli	0	0	0	0	.13	0
Butter spread nan/bread	0	.14	.14	0	0	0
Palata (parala—an Indian pancake)	.15	0	.16	0	.26	.14
Ekyarkway	.21	0	.43*	0*	.11*	.18
Samosa	0	0	0	0	0	0
Mohingar/Nhyat noodle	8.57	8.51	.31***	2.38***	23.18***	8.55
Rice-based traditional snacks	.74	.16	0*	.13*	1.64*	.59
Pauksi (Chinese steamed bun with stuffing)	0	.12	.16	0	.14	0
Rice noodle/vermicelli salad/soup	.67	.42	0***	0***	1.8***	.61
Wheat noodle salad/soup	.52	.45	.44	.24	.84	.51
Fried noodle/Cutkyikite	.74	.3	1.23	0	.66	.63
Shan noodle/Mie Shay	2.49	.72	6.03*	0*	0*	2.05
Hot tofu	.10	0	.23	0	0	0
Fried snack (gourd/pulses, etc.)	.8	.37	.12*	.7*	1.26*	.69
Other food taken outside home	.4	0	.13	.7	0	.30
Brewed tea/coffee taken outside	1.59	.97	2.52*	0*	1.73*	1.43
Soft drinks and/or juices taken outside home	.51	.34	.16**	0**	1.26**	.47

**Table 86: Daily per capita consumption in kyat of rice and cereals**

	LIFT	Control	Hilly	Dry	Coastal/ Delta	Total
<b>Rice and cereals</b>	200.42	213.91	222.6***	190.72***	198***	203.8
Rice (Ngasein)	54.33	54.64	32.8***	57.45***	73.25***	54.41
Rice (Emata)	36.61*	53.2*	15.82***	50.02***	56.66***	40.76
Rice (Medone)	23.09***	46.91***	36.78	24.94	25.36	29.04
Rice (Nga kywe)	24.10	18.35	27.48*	14.42*	26.15*	22.67
Kaukhnyin (sticky rice)	1.17	.23	2.64*	0*	.15*	.93
Maize seeds (dry)	3.36	1.84	8.89***	0***	0***	2.98
Flour rice	0	0	0	0	0	0
Flour wheat	0	0	0	0	0	0

Other rice (local variety)	57.44*	38.73*	97.59***	43.74***	16.41***	52.76
Sorghum	.26	0	.58	0	0	.2
Wheat	0	0	0	.14	0	0

**Table 87: Daily per capita consumption in kyat of oil and fats**

	LIFT	Control	Hilly	Dry	Coastal/ Delta	Total
<b>Oil and fats</b>	46.23	42.15	43.51***	58.24***	33.71***	45.21
Groundnut oil	21.18***	12.47***	27.46***	19.7***	9.7***	19
Sesame oil	8.6	8.12	4.01***	20.65***	.65***	8.48
Palm oil	11.4*	14.64*	1.62***	13.73***	21.41***	12.21
Mustard oil	2.63	2.87	7.17***	.87***	0***	2.69
Sunflower oil	.68*	2.07*	2.72***	.36***	0***	1.03
Ghee	0	0	0	.13	0	0
Other cooking oil and fat	1.64	1.98	.44*	2.8*	1.95*	1.73
Pork fat	0	0	0	0	0	0

**Table 88: Daily per capita consumption in kyat of milk products**

	LIFT	Control	Hilly	Dry	Coastal/ Delta	Total
<b>Milk products</b>	10.58	2.03	21.26	.44	3.56	8.44
Milk powder	0	0	0	0	0	0
Branded condensed milk	.64	.59	.55*	0*	1.26*	.63
Domestic condensed milk	1.06	.59	1.12*	.24*	1.46*	.94
Formula milk for infants	.34	.13	0	0	.75	.29

**Table 89: Daily per capita consumption in kyat of other food items**

	LIFT	Control	Hilly	Dry	Coastal/ Delta	Total
<b>Other food items</b>	30.31	30.68	23.64***	17.23***	50.63***	30.4
Green tea leaves	.83**	1.76*	0.27***	1.17***	1.75***	1.06
Coffee (grinded or beans)	0	0	0	0	0	0
Sugar	1.46	1.03	1.83***	0.39***	1.85***	1.35
Palm jaggery	1.29	1.05	0.46***	1.69***	1.56***	1.23
Cane jaggery	0	0	0	0.16	0	0
Pickled tea—packets	1.92	2.42	0.36	3.06	2.71	2.04
Betel leaves	7.11	7.75	2.85***	3.02***	16.06***	7.27
Betel nuts	6.41	6.51	2.92***	2.69***	13.79***	6.43

Coffee mix or tea mix	5.59	5.98	6.7***	1.92***	8.46***	5.68
Cereal mix	2.47	1.26	3.66***	1.51***	1.32***	2.17
Ovaltine, horlick, etc.	2.48	1.56	3.29	1.45	2	2.25
Potato chips	0	0	0	0	0	0
Other	.16	0	0.11*	0.15*	0.13*	.13

## 6.2. Non-food consumption expenditures in the last 30 days

The expenditure survey asked the respondents about their expenditure on non-food consumption over the last 30 days. The following tables (Table 90–95) detail the households' consumption for energy use, water, personal apparel, medicines, local transport, and other non-food items.

**Table 90: Daily per capita consumption in kyat for energy for household use**

	LIFT	Control	Hilly	Dry	Coastal/ Delta	Total
<b>Energy for household use</b>	75.5	65.27	85.61***	36.25***	97.35***	72.95
<b>Firewood</b>	48.57	41.35	57.46***	22.92***	60.1***	46.76
<b>Charcoal</b>	1.24	0.36	1.25	.48	1.34	1.02
<b>Kerosene</b>	3.01	1.91	1.15***	.34***	6.77***	2.73
<b>Diesel</b>	7.78	6.37	11.47**	.68**	10.17**	7.42
<b>Gas (propane or other gases)</b>	0	0	0	0	0	0
<b>Public electricity</b>	1.54	1.74	2.74***	1.86***	.16***	1.59
<b>Electricity from private source</b>	2.03	1.25	1.54	1.21	2.77	1.84
<b>Candles</b>	4.38	5.76	4.65***	3.01***	6.54***	4.72
<b>Battery charging</b>	3.16	4.24	.9***	2.08***	7.37***	3.43
<b>Other energy sources</b>	3.78	2.28	4.4*	3.67*	2.13*	3.41

**Table 91: Daily per capita expenditure in kyat for water**

	LIFT	Control	Hilly	Dry	Coastal/ Delta	Total
<b>Water</b>	8.66*	5.46*	2.69***	7.87***	13.1***	7.86
<b>Drinking water</b>	5.27	4.28	2.11***	3.37***	9.65***	5.02
<b>Water for other use (cooking, washing)</b>	3.39*	1.18*	0.58***	4.5***	3.45***	2.84

**Table 92: Daily per capita consumption in kyat for personal apparel**

	LIFT	Control	Hilly	Dry	Coastal/ Delta	Total
<b>Personal apparel</b>	40.16	37.53	39.37	37.02	42.15	39.5
<b>Thanakha (solid)</b>	8.74	7.86	4.18***	10.97***	10.46***	8.52
<b>Thanakha (ready-made)</b>	1.72	2.08	2.54***	.69***	2.22***	1.81
<b>Toothpaste</b>	4.45	4.52	4.91**	3.78**	4.71**	4.47
<b>Personal soap</b>	4.5	4.25	4.76*	4.01*	4.55*	4.44
<b>Cleaning materials and laundry supply</b>	10.43	9.6	11.66**	9.28**	9.73**	10.23
<b>Shampoo</b>	5.03	5.06	5.53***	3.77***	5.82***	5.04
<b>Haircut, hair dressing, beauty parlour services</b>	3.77	2.01	4.07	2.47	3.44	3.33
<b>Other expenditures for personal care</b>	1.5	2.14	1.71	2.05	1.23	1.67

**Table 93: Daily per capita consumption in kyat for medicines**

	LIFT	Control	Hilly	Dry	Coastal/ Delta	Total
<b>Medicines</b>	48.02	45.97	28.23***	44.59***	70.05***	47.51
<b>Traditional medicines</b>	6.2	6.34	2.2***	5.11***	11.47***	6.23
<b>Medicines obtained with voucher (prescription from doctor or other health professional)</b>	31.01	27.94	12.48**	33.66**	44.82**	30.25
<b>Other medicines/drugs (cold remedies, vitamins, etc.)</b>	9.85	10.81	13.31**	5.43**	11.55**	10.09
<b>Other health care non-durables (bandages, birth spacing methods, etc.)</b>	0.96	0.88	0.24***	0.39***	2.22***	0.94

**Table 94: Daily per capita consumption in kyat for local transport**

	LIFT	Control	Hilly	Dry	Coastal/ Delta	Total
<b>Local transport</b>	23.9	26.58	26.07**	14.58**	33.21**	24.57
<b>Local bus/boat/trawlargee daily travel</b>	3.48	3.58	2.14	3.14	5.26	3.5
<b>Inter-city bus/boat/trawlargee (for same-day travel)</b>	7.76	6.09	4.03*	6.25*	11.8*	7.34
<b>Taxi/boat (for same-day travel)</b>	2.53	2.25	0.12***	0.2***	7.13***	2.46
<b>Trishaw/horse cart/boat/trawlargee/motorcycle (for same-day travel)</b>	7.95	7.47	15.52***	3.75***	4.17***	7.83
<b>Motor vehicle permanent rental for family use</b>	0	0	0	0	0	0

<b>Petrol/diesel for family cars</b>	1.47	1.38	3.48*	0.76*	0*	1.45
<b>Maintenance and repairs for transportation vehicles (car, bicycle)</b>	0.25	0	0.41	0	0	0.188
<b>Other daily transportation costs</b>	0.47	5.8	0.36	0.4	4.7	1.8

**Table 95: Other non-food items**

	LIFT	Control	Hilly	Dry	Coastal/ Delta	Total
<b>Other non-food items</b>	27.94	24.76	19.77***	18.7***	43.21***	27.15
<b>Telephone line services (including rental and repair fees from other)</b>	3.3	2.19	1.62*	4.65*	2.79*	3.02
<b>Mobile phone services (including rental and repair fees from other)</b>	5.02	6.57	5.92	4.07	6.24	5.41
<b>Computer services (including rental and repairs fees from other)</b>	0	0	0	.12	0	0
<b>Internet/email services</b>	0	0	0	0	0	0
<b>Satellite services</b>	.27	0	.12	0	.49	.2
<b>Newspapers or journal or magazines or non-text books (purchased or rent)</b>	.34	.16	.46	.11	.32	.3
<b>Garbage disposal services</b>	0	0	0	0	0	0
<b>Postal services</b>	0	0	0	0	0	0
<b>Cinema, video house, video tape (purchased or rent)</b>	1.36	.57	1.47	.59	1.44	1.16
<b>Cigarettes, cigars</b>	.94	2.27	1.63	.57	1.61	1.27
<b>Cheroot</b>	5.18	6.12	4.52***	3.66***	8.11***	5.42
<b>Betel quid</b>	3.85	4.98	1.88***	3.73***	6.82***	4.13
<b>Sporting activities</b>	0	0	0	0	0	0
<b>Other entertainments</b>	0	0	0	0	0	0
<b>Lottery expense (any)</b>	2.18	1.41	1.44**	1.13**	3.4**	1.99
<b>Gambling</b>	5.42	.467	.69	0	11.98	4.19

### 6.3. Non-food consumption expenditures in 6 months

In the expenditure survey, information was collected on non-food consumption expenditures in the last 6 months. The following tables (Tables 96–101 below) detail the household expenditure for clothing, home equipment, health (excluding medicines), education, travel (excluding local trips), and other major non-food items.

**Table 96: Clothing and other apparel**

	LIFT	Control	Hilly	Dry	Coastal/ Delta	Total
<b>Clothing and other apparel</b>	50.43*	32.04*	45.28	43.58	48.7	45.84
Various types of ready-made clothing (e.g., shirts, sport shirt, men/women longyi, pants, underwear [excluding for school uniforms])	18.38	17.45	20	16.48	17.97	18.15
<b>Shoes, slippers</b>	5.26	4.69	5.87	4.99	4.48	5.12
<b>Cloth, fabric and materials (excluding for school uniforms)</b>	1.24	.72	.91**	.59**	1.84**	1.11
<b>Tailoring including clothing repairs (excluding for school uniforms)</b>	.73*	.31*	.39*	.53*	.95*	.62
<b>School uniforms</b>	4.29	4.82	5.05**	2.98**	5.25**	4.42
<b>Umbrella</b>	1.92	1.76	2.29***	.72***	2.64***	1.88
<b>Gold jewellery, gems, and precious stones</b>	17.69*	1.66*	9.95	17.01	14.1	13.68
<b>Watch</b>	.92	.65	.83***	.27***	1.47***	.85
<b>Other clothing and apparel</b>	0	0	0	0	0	0

**Table 97: Home equipment**

	LIFT	Control	Hilly	Dry	Coastal/ Delta	Total
<b>Home equipment</b>	6.5	4.19	5.25	4.82	7.72	5.92
Blankets, linen, bedclothes, curtains, table clothes	1.59	1.44	1.77	1.18	1.71	1.55
Crockery, pots, pans, glasses, dishes	1.24	.62	1.01	1	1.25	1.08
Mosquito nets	.58*	.12*	.25	.54	.59	.46
Insecticides/products that kill mosquitoes	.35	.2	.12***	.19***	.63***	.31
Mattress, sleeping mats	.5	.29	.34	.32	.68	.45
Household equipment repairs	1.65	1.48	1.29	.69	2.86	1.61
Other home equipment	.6	0	.48	.89	0	.46

**Table 98: Health (Including traditional medicine)**

	LIFT	Control	Hilly	Dry	Coastal/ Delta	Total
<b>Health</b>	36.45	40.54	29.89	42.75	39.82	37.47
Personal health/accident insurance	.25	0	0	.54	0	.19

<b>In-patient stay/long-term care in public hospital (include all costs)</b>	9.3	8.06	6.14	12.13	8.7	8.99
<b>In-patient stay/long-term care in private clinic (include all costs)</b>	5.47	.56	2.47	7.38	2.85	4.24
<b>Outpatient care at public hospital/health centre/clinic</b>	8.22*	16.68*	9.58	10.9	10.53	10.33
<b>Outpatient care at private hospital/health centre/clinic</b>	6.95	9.48	8.66*	2.93*	11.21*	7.58
<b>Home visit by doctor or other health professional</b>	3.31	2.51	.84*	5.32*	3.15*	3.11
<b>Dental care</b>	.24	0	0	.45	0	.19
<b>Care from traditional healer</b>	1.04	.12	.75	1.5	.16	.81
<b>Medical devices (eye glasses, hearing aids, etc.)</b>	.31	1.27	.148	.27	1.25	.55
<b>Other health care (excluding medicines, vaccinations)</b>	0	0	0	0	0	0
<b>Health-related transportation cost</b>	1.33	1.85	1.26	1.3	1.81	1.46

**Table 99: Education (including pre-school and adult education)**

	LIFT	Control	Hilly	Dry	Coastal/ Delta	Total
<b>Education</b>	26	27.77	37.69*	17.26*	24.35*	26.45
<b>School (including training) transportation costs</b>	1.48	2.56	2.68	.97	1.61	1.75
<b>School (including training) fees (admission and monthly fees)</b>	3.52	1.95	6.76*	.44*	2.16*	3.12
<b>Contributions to the school</b>	1.29	1.19	1.35	1.08	1.37	1.27
<b>Textbooks</b>	2.26	1.36	2.83*	1.47*	1.8*	2.03
<b>School stationeries (school bags, exercise books, pencils/pen, erasers, etc.)</b>	3.84	3.88	4.58*	2.65*	4.34*	3.85
<b>Private tutoring</b>	5.23	4.53	4.93	3.18	7.08	5.05
<b>Boarding</b>	8.05	11.88	14.32	7.27	5.37	9.01
<b>Other education costs (e.g., student festival activities)</b>	.1	0	0	.11	.13	0
<b>Other education costs (exam fees)</b>	.23	.35	.18*	0*	.51*	0.26

**Table 100: Travel/trips (overnight travel excluding health and education)**

	LIFT	Control	Hilly	Dry	Coastal/ Delta	Total
<b>Travel/trips</b>	7.29	4.05	4.72**	3.76**	11.02**	6.48
<b>Long distance bus/ship travel</b>	4.14	2.98	1.84***	2.08***	7.69***	3.85



<b>Railway fare (for overnight travel)</b>	.29	0	.27	.31	.15	.25
<b>Plane fare</b>	0	0	0	0	0	0
<b>Lodging and meal expenses (during travel)</b>	1.18	.77	.62*	.63*	2*	1.08
<b>Other travelling expenses in overnight travel</b>	1.67	.2	1.99	.75	1.18	1.31

**Table 101: Other non-food items**

	LIFT	Control	Hilly	Dry	Coastal	Total
<b>Other non-food items</b>	17.55	19.75	5.41**	32.7**	16.15**	18.1
<b>Household worker services (e.g., maid, carpenter, electrician, plumber, etc.)</b>	16.57	19.75	5.41***	32.7***	13.93***	17.36
<b>Other</b>	.98	0	0	0	17.36	.73

#### 6.4. Assets

Purchases of durable goods represent large and relatively infrequent expenses. While almost all households incur relatively large expenditures on these at some point, only a small proportion of all households are expected to make such expenditures during the reference period covered by the survey. As indicated by Deaton & Zaidi (2002), "From the point of view of household welfare, rather than using expenditure on purchase of durable goods during the recall period, the appropriate measure of consumption of durable goods is the value of services that the household receives from all the durable goods in its possession over the relevant time period" (p. 33). Table 102 details the equivalent per capita daily expenditure of assets that were purchased by the households over the previous 12 months.

**Table 102: Per capita daily expenditure on assets over the last 12 months**

	LIFT	Control	Hilly	Dry	Coastal/ Delta	Total
<b>Total assets</b>	137.11	117.87	204.31**	85.75**	106.29**	132.26
<b>Bicycle</b>	.97	1.46	.23***	1.88***	1.16***	1.09
<b>Motorcycle</b>	35.26	30.70	52.35***	45.34***	4.21***	34.12
<b>Trawlerjee</b>	10.29	3.79	25.03**	.21**	.62**	8.66
<b>Car</b>	9.60	0	16	5.49	0	7.2
<b>Bed (wooden or steel)</b>	1.94*	.71*	1.65***	2.85***	.37***	1.63
<b>Mattress</b>	1.70	.73	4.07***	.17***	.10***	1.46
<b>Stove (gas or electric)</b>	.17	.28	.45*	.15*	0*	.20
<b>Fuel-efficient wood stove</b>	.28	.21	.30	.22	.27	.26
<b>Chair</b>	3.36	2.32	5.63*	2.16*	1.48*	3.10

<b>Table</b>	1.58	.88	1.09*	2.05*	1.06*	1.40
<b>Radio/cassette</b>	1.40	1.02	.81*	1.12*	1.98*	1.30
<b>TV/satellite dish</b>	5.46	4.83	9.05***	3.35***	3.48***	5.31
<b>DVD player</b>	1.85	1.28	2.41*	1.23*	1.47*	1.70
<b>Cell phone</b>	7.81	14.50	12.54	8.07	7.80	9.48
<b>Watch</b>	1.42	1.12	1.65**	.78**	1.60**	1.34
<b>Solar panel</b>	3.24	4.56	7.88**	1.52**	1.27**	3.57
<b>Boat without motor</b>	3.16	2.01	.40***	0***	8.29***	2.87
<b>Boat with motor</b>	20.67	11.34	.33***	.25***	54.97***	18.33
<b>Other buildings besides house</b>	1.42	2.79	4.32	.38	.58	1.76
<b>Household appliances (e.g., kettle, etc.)</b>	24.67	32.50	57.60***	8.53***	13.56***	26.63
<b>Generators</b>	.86	.84	.52	0	2.02	.85

The case of housing is similar to other durable goods, in that it is better measured as an annual consumption of housing services, either annual rent expenditures for renters, or as an annual rental equivalent for non-renters. Table 103 details the average daily consumption on housing.

**Table 103: Per capita daily expenses on housing**

	LIFT	Control	Hilly	Dry	Coastal/ Delta	Total
<b>Home rent and repair</b>	106.62	112.14	155.28***	106.93***	61.09***	108
<b>If you sold this dwelling today, how much would you receive for it?</b>	93.17	73.82	129.42***	90.65***	44.27***	88.33
<b>House repairs</b>	12.84*	37.48*	25.86	16.28	14.8	19
<b>Rent—four households were renting</b>	.61	.84	0	0	2.02	.67

## 6.5. Prevalence of poverty

The prevalence of poverty, or poverty headcount ratio, is the proportion of the population in the survey area living in extreme poverty, defined as having average daily consumption of less than US\$1.25 per capita,<sup>17</sup> converted into Myanmar kyat at 2010 Purchasing Power Parity (PPP) exchange rates. This was done by the following steps:

- Inflation data for Myanmar is only available after 2010. The \$1.25 line was therefore converted into a 2010 US dollar equivalent, using the cumulative inflation between 2005 and 2010 in the United States (111.656).

17 See World Bank (2008) "Dollar a day revisited". Available at: [http://www-wds.worldbank.org/external/default/WDSContentServer/IW3P/IB/2008/09/02/000158349\\_20080902095754/Rendered/PDF/wps4620.pdf](http://www-wds.worldbank.org/external/default/WDSContentServer/IW3P/IB/2008/09/02/000158349_20080902095754/Rendered/PDF/wps4620.pdf).

- The resulting figure ( $\$1.25 \times 1.11656 = 1.3957$ ) was converted to a 2010 kyat equivalent at PPP by using the 2010 PPP conversion rate of 535.61.<sup>18</sup>
- The resulting figure ( $\$1.3957 \times 535.61 = 747.5509$ ) was adjusted for cumulative price inflation since 2010. The adjustment was done using 2010 as the base inflation factor,<sup>19</sup> and the inflation at the time of the survey as the numerator. Inflation 2010 = 224.562. Inflation 2013 quarter 4 (the time the data was collected) = 259.253.  $259.253 / 235.888 = 1.1544 \times 747.5509 = 862.97$ .

Using the poverty line of 862.97 kyat per person per day, the majority of households in the survey were living above the poverty line (Table 104). For all households, 71 percent were living above the poverty line. There was no statistically significant difference between the LIFT and Control households. However, there was such a difference for the three agro-ecological zones, with fewer than two-thirds of the Dry zone households living above the poverty line, compared to around three-quarters of households in the Hilly and Dry/Coastal zones ( $p < .05$ ).

**Table 104: Proportion of households with a daily per capita consumption of more than 862.97 kyat**

	Hilly	Dry	Coastal/ Delta	LIFT	Control	Total
<b>More than 862.97 per day</b>	75.8*	64.2*	73.6*	71.7	69.6	71.2

\*p-value < 0.05, \*\*p-value < 0.005, \*\*\*p-value < 0.001

## 6.6. Average daily per capita expenditures

The final consumption aggregate is expressed as an average daily per capita expenditure in Myanmar kyat, and is detailed in Table 105. For the total average daily per capita expenditure, there was no significant difference between LIFT and Control households. However, there was a difference between household expenditure in the three agro-ecological zones. Households in the Hilly zone were spending on average 3,630 kyat daily for each household member, while in the Dry and Coastal/Delta zones the households were spending around 2,450 kyat ( $p < .001$ ).

**Table 105: Overall average per capita costs per unit by region**

	LIFT	Control	Hilly	Dry	Coastal/ Delta	Total
Total (kyat)	1,379.93	1,340.37	1,500.82	1,157.4	1,453.13	1,370.04
Pulses, beans, nuts, and seeds	3.2	3.1	3.4	4.8	1.7	3.2
Meat, dairy, eggs	7.5	6.8	7.4	6.4	7.9	7.3
Fish and other seafood	5.6	7.3	2.7	4.7	10.5	6.0

18 Global Purchasing Power Parities and Real Expenditures, 2005 International Comparison Program. Available at: <http://data.worldbank.org/indicator/PA.NUS.PRVT.PP?page=1>.

19 CPI data for Myanmar was obtained from <http://elibrary-data.imf.org>.

Roots and tubers	1.0	1.1	1.5	0.6	0.9	1.0
Vegetables	6.8	6.5	7.9	7.9	4.5	6.7
Fruits	1.9	2.0	1.5	2.1	2.2	2.0
Spices and condiments	4.7	5.3	4.4	5.1	5.1	4.8
Other food products	1.7	1.6	1.7	1.1	2.1	1.7
Alcoholic beverages	1.1	1.5	1.8	1.0	0.7	1.2
Food and beverages	1.4	1.0	1.0	0.4	2.4	1.3
Rice and cereals	14.5	16.0	14.8	16.5	13.6	14.9
Oil and fats	3.4	3.1	2.9	5.0	2.3	3.3
Milk products	0.8	0.2	1.4	0.0	0.2	0.6
Other food items	2.2	2.3	1.6	1.5	3.5	2.2
Energy for household use	5.5	4.9	5.7	3.1	6.7	5.3
Water	0.6	0.4	0.2	0.7	0.9	0.6
Personal apparel	2.9	2.8	2.6	3.2	2.9	2.9
Medicines	3.5	3.4	1.9	3.9	4.8	3.5
Local transport	1.7	2.0	1.7	1.3	2.3	1.8
Other non-food items	2.0	1.8	1.3	1.6	3.0	2.0
Clothing and other apparel	3.7	2.4	3.0	3.8	3.4	3.3
Home equipment	0.5	0.3	0.3	0.4	0.5	0.4
Housing	7.7	8.4	10.3	9.2	4.2	7.9
Health	2.6	3.0	2.0	3.7	2.7	2.7
Education	1.9	2.1	2.5	1.5	1.7	1.9
Travel/trips	0.5	0.3	0.3	0.3	0.8	0.5
Other	1.3	1.5	0.4	2.8	1.1	1.3
Assets	9.9	8.8	13.6	7.4	7.3	9.7

## 6.7. Mean depth of poverty

This indicator is useful to understand the average, over all people, of the gaps between poor people's living standards and the poverty line. It indicates the extent to which individuals fall below the poverty line (if they do).

Mean depth of poverty is computed based on the poverty gap index (PGI). This index is defined as the ratio of the Poverty Gap (PG) to the poverty line. PG is computed as the average of the differences between an individual's total daily per capita consumption and the poverty line, divided by the poverty line, with individuals over the poverty line having a PG = 0. PGI is given by the following formula:

$$PGI = \left( \frac{1}{N} \sum_{i=1}^q \left( \frac{z - y_i}{z} \right) \right) \times 100$$

Where  $N$  is the total number of individuals in the population,  $Y_i$  is the poverty line and  $y_i$  is the daily per capita consumption of individual  $i$ . For individuals above the poverty line,  $y_i > Y_i$ . Using this formula, the mean depth of poverty among the study participants was 5.9 percent. Placing this in context, the mean depth of poverty indicator ranges from 0 (“extremely shallow poverty”) to 100 (“extremely deep poverty”). In this case, a score of 5.9 percent represents shallow poverty. More specifically, it means that those below the poverty line have an average consumption that is just 5.9 percent less than the poverty line. In other words, if the poverty line were 100, those below the poverty line would have an average consumption of 94.1.

**The Household Survey 2013 Annex Booklet is available at [www.lift-fund.org](http://www.lift-fund.org)**



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