Economic Empowerment Survey (2019)

LIFT
LAND INVESTMENT FOR TRANSFORMATION PROGRAMME

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Executive Summary

LIFT's Economic Empowerment Unit (EEU) follows the 'making markets work for the poor' (M4P) approach and innovates new products that apply the second level land certificate (SLLC) in the Access to Finance (A2F), Rural Land Rental (LR), and Environment & Conservation Agriculture (ECA) sectors. This survey evaluates the impact of two specific EEU innovations:

1) **The SLLC-linked loan** introduces an unprecedented financial product to the Ethiopian market, which uses the SLLC as a form of collateral so that rural farmers can access individual credit through MFIs.
2) **The Standard Land Rental Contract (SLRC)** is a formal land rental contract developed by LIFT and introduced to all 4 programme regions in combination with land rental service providers (LRSPs), who support the formal rental market by raising awareness, providing market information, and supporting the completion of the contract. This provides for more secure land rental transactions with fairer prices, especially for the typically more vulnerable renters.

EEU innovations are designed to have an impact on the behaviour of farmers, incentivising investment in land which in-turn should lead to increased productivity and incomes. The primary purpose of this survey is to provide evidence on how farmers change behaviour, their views of EEU interventions and the impact this has on investment, productivity and incomes. To do so, the EEU 2019 impact survey collected a range of household, person and parcel-level data from a sample of 1,382 households across the four LIFT programme areas Amhara, SNNPR, Oromia, and Tigray. 926 of these were direct EEU beneficiaries, meaning they had directly accessed either the SLLC-linked loan or the SLRC. 456 households were non-beneficiaries, which were randomly sampled in the areas where EEU beneficiaries live to be able to compare the profile of beneficiaries with the "average farmer" in the area.

The survey asked detailed, parcel-level questions on increased investment, productivity and income in seasons before and after the EEU intervention was accessed. This allows to estimate the additional and attributable investment and income effects resulting from EEU interventions. The survey also probed demographic and socio-economic characteristics of respondents, as well as knowledge, awareness, perceptions and practices relating to EEU innovations. Key findings are summarised below:

Access to Finance: SLLC-linked loan

Key Finding 1: The SLLC-linked loan provides access to finance, both in terms of higher loan amounts and in terms of offering loans to farmers who did not access formal credit before

Due to the unique nature of the SLLC-linked loan, a lot of new clients are engaging with the MFIs, many of which access formal credit for the first time as a result. Additionally, the average amount available through the SLLC-linked loan **is 2.6 times higher (11,800 vs 30,000)** on average than the amounts accessed by those who attained formal credit in the past through group lending. Out of these loan clients **only 2%** of the respondents reported having ever missed a payment. Most of these rural farmers are smallholders making up 64% of male clients and 73% of female clients. Therefore, the SLLC-linked loan is successfully targeting smallholder farmers and increasing their access to large, more transformational credit amounts when compared to group lending or informal lending.

Key Finding 2: The demand for the SLLC-linked loan is strong, with high satisfaction and a sense of empowerment especially felt by women

As a result, clients are very satisfied with the loan and its features. **69% of clients** stated that the loan amount meets their investment demand and **85% of those who had already completed their loan term** applied for a second loan. Overall, **75% of male clients** expressed their satisfaction while it was **85% for female clients**. Women were specifically asked questions regarding their engagement with the loan as both spouses are required to sign on the loan agreement. **81%** stated joint-decision making increased as a result of the joint signature requirement for accessing the loan. Additionally, **88%** state that they are more actively participating in household finance decisions as a result of the SLLC loan, indicating an empowerment effect for women in male-headed households.

Key Finding 3: The SLLC-linked loan increases investments to enhance agricultural productivity, leading to increased yields and incomes

The primary purpose of this loan is to increase investments in agricultural, making land more productive. We found that **88% of loan clients** invest the loan to increase agricultural productivity. Especially for the clients who invested the loan into inputs to enhance crop production, the access to additional finance resulted in a **26% increase** in their input investments. As a result of the increased investments in inputs, farmers experienced a **33.6% rise in yields**, when comparing yields before and after the SLLC-linked loan was

taken-out. Overall the SLLC-loan clients had an average **return of investment rate of 42%,** which is significantly higher than the average interest rate of loans taken (17.4%). Due to this high return of investments, loan clients are able to attain an **average additional income increase of 16.6%** as a result of taking out one loan. This evidence depicts a clear picture of how the SLLC-linked loan is catalysing investment and resulting in significant income gains for SLLC farmers.

Rural Land Rental innovation

Key Finding 4: Renters are on average more marginalised and benefit strongly from the security the SLRC offers as shown in a decrease in disputes and increase in rental prices (also Key Finding 7)

A higher proportion of renters are smallholder farmers when compared to rentees. Renters are on average significantly older rentees, and more likely to be female-headed households. Furthermore, renters are more likely to be in the lowest wealth group when compared to rentees and the average farmer as measured through non-beneficiaries. The land rental intervention ensures access to a secure and more lucrative opportunity for renters, while providing affordable and secured access to land for rentees. We found that the SLRC has resulted in increased security with **80% of SLRC clients** reporting that it reduces the risk of disputes. While across the intervention areas the use of the contract has **reduced land rental disputes by 30%** on average.

Key Finding 5: Security of tenure offered through the SLRC incentivises new farmers to rent-in or out for the first time, as well as to increase the land size rented for existing agreements. This leads to an overall expansion of the rural land rental market.

Due to the increase in security, **33% of male renters, 28% of female renters, and 37% of rentees** are entering the land rental market for the first time. Additionally, the use of the contract and the facilitation of LRSPs has on average increased the amount of land rented out by **0.15 ha per transaction**.

Key Finding 6: LIFT's land rental service providers (LRSPs) play a key role in formalising land rental transactions

92% of farmers reported that LRSPs helped them to understand the SLRC and its benefits, and **60% stated** that LRSPs provided them with valuable information about prevailing market price and conditions. As a result of this value addition provided by LRSPs, **70% of renters and 80% of rentees** plan on using their support in future rental transactions.

Key Finding 7: Renters benefit from an increase in rental prices as a result of the SLRC and LRSP support, leading to an increase in available income for household consumption

LRSPs aim to prevent exploitation of the typically more marginalised renters, leading to fairer and higher rental. Renters who rent out to the same rentee as in the past were indeed found to have experienced a **11% price increase**. Renters who switched rentees as a result of formalisation and LRSP facilitation however experienced a much higher average **price increase of 68%**. This is an indication that some renters used to agree to prices that are below the market price, but through the support of the LRSP have a strengthened negotiating position.

Key Finding 8: Rentees use land more productively than renters, leading to a more productive use of land overall

Rentees benefit from an income increase as a result of increasing overall investment in land. Furthermore, rentee use the rented-in land more productive when compared to renters: on average **rentees are 44% more productive than renters** and achieve an average **return on investment rate of 71%.** Thus, the land now under rentee cultivation, approximately 2400 ha, **experiences a 36% yield increase**. These results show how the formalisation of the land rental market, with LRSPs playing an integral role, boosts productivity and facilitates a more efficient allocation of land, while ensuring tenure security.

Introduction

Overview of interventions

The UK Aid-funded Land Investment for Transformation Programme (LIFT) works with the Government of Ethiopia (GoE) to deliver Second Level Land Certificates (SLLC) to smallholder farmers and to create a national database to manage and update SLLC data and land related transactions, the Rural Land Administration System (RLAS). The introduction of SLLC and the RLAS is expected to improve both the administration and management of land in Ethiopia.

A better functioning land system creates multiple opportunities for improving the livelihoods of rural dwellers. Since 2014, through the Economic Empowerment Unit (EEU), LIFT works to leverage these opportunities as shown in the Theory of Change to the right. For this, the programme applies market systems thinking in three main intervention areas: rural land rental (LR), access to finance (A2F) and environment & conservation agriculture (ECA).

Rural Land Rental Sector

The rural land rental system in Ethiopia is still largely informal, resulting in ineffective performance, distorted pricing, and conflict. The majority of land rental transactions are short-term, inefficient crop sharing arrangements between family and community members. Farmers have traditionally been reluctant to engage in formal rental transactions (particularly cash rentals) outside of family or close friends – the primary reason for this remains the real and perceived risk around engaging in rental transactions, particularly uncertainty around the recovery of the land at the end of the rental period. Additionally, farmers have limited access to information on the rural land market (particularly land availability and rental procedures) and an uncertain regulatory environment. The improved tenure security provided by SLLC provides an opportunity to improve the functioning of the rural land rental system, by doing the following:

Improve land rental processes and procedures. The key components of this include the use of the standard land rental contract (SLRCF) developed by LIFT in all rental transactions; the registration of these contracts at the local kebele office; and the kebele office submitting these contracts to the woreda land office for registration in RLAS. These steps provide both parties to the rental transaction with the assurance that the transaction is legal and secure.

Develop a sustainable system for information on land rental demand and availability to flow so that smallholder farmers and particularly vulnerable groups can rent in/out their land for fair and competitive prices.

Continue building awareness among all relevant stakeholders (e.g. Rural Land Administration and Use (RLAUs) offices, woreda land offices, kebeles, smallholder farmers, vulnerable groups) that renting in/out land is legal, culturally acceptable and safe through proper formalisation of such transactions. Formalised land rental can bring significant benefits through improved access to productive land for landless young people and increased rental income for women and elderly people who may not have the resources to farm the land effectively.

Improve the legal and regulatory framework so that smallholder farmers and vulnerable groups are able to rent in/out their land confidently, can formalise their land rental agreements speedily, and experience the benefits of formally registering the rental agreements.

Continue supporting the development of a transparent and sustainable land rental service provision system that is instrumental in assuring continuous development of a formalised land rental market and its benefits to both renters and rentees.

By April 2019, land rental service providers (LRSPs) have facilitated 15,207 rental transactions, with an estimated reach of 26,460 rural households across 32 woredas in the Amhara, Oromia, SNNP and Tigray regions. The breakdown of renters and rentees is 78% males and 22% females, although females make up about 40% of renters.

Access to Finance Sector

Enhancing **access to finance** for SLLC-holders is key to allow them to invest productively in their land. For example, increased access to finance gives smallholder farmers timely access to short-term finance for inputs (e.g. seeds, fertiliser, pesticides, herbicides, machine services, transport, labour, and fuel) and allows them to smooth cash flows. Being able to increase the productivity of land also makes the rental market more attractive, leading to higher rental prices (which disproportionately benefits vulnerable groups) and increasing the amount of land available to rent out/in. Overall, this supports a more efficient allocation of land.

Most farmers, however, have limited access to credit from financial institutions, and those that do generally rely on group loans from MFIs. A number of informational asymmetries and institutional failures limit the supply of credit in rural areas, leaving many SLLC beneficiaries unable to access credit. To the extent that loans are available, they are limited in size, which restricts farmers' ability to invest productively in their land and escape the poverty trap. In addition, farmers lack access to insurance products that could make their investments lower risk.

On the supply side, micro finance institutions face institutional and capacity constraints that limit their ability to offer individual based loan products to their clients in rural areas. In addition, liquidity constraints hamper their ability to grow their loan portfolio. This should be compensated by a higher emphasis on growing their savings base.

In this sector LIFT aims to leverage second level land certificates to improve farmer access to a range of financial services, specifically credit and micro-insurance. LIFT's main intervention has aimed to promote development of new agricultural individual loan linked to SLLC.

LIFT has developed an SLLC-linked individual loan product which is being piloted by six MFIs. The loan product has been very positively received by both MFIs and farmers. MFIs have developed strong ownership of the product, demonstrated by their willingness to invest in it, adjusting product features and revising product manuals to respond to clients' demands. Additionally, they are incorporating the product in their recording and management information systems (MIS) and expanding the availability of the loan product to non-LIFT woredas. Based on findings from the field, demand for SLLC loans remains very strong and community awareness of the product is rising. Portfolio growth is healthy and MFIs are pleased with the product and its overall performance.

By April 2019, 10,793 SLLC-linked loans have been extended across 43 woredas in the Amhara, Oromia, and SNNP regions. The breakdown of A2F is 65% of loans disbursed to males while 35% are disbursed to females. Notice that female borrowers may be women in male-headed households or female heads in female-headed households. This split is investigated in Section 3.

Research questions

This report analyses the EEU 2019 Impact Survey results and aims to respond to the following research questions:

Demographics and socio-economics of beneficiaries and non-beneficiaries

What are the profiles of direct A2F and LR beneficiary households compared to non-beneficiary households across demographic and socio-economic characteristics, including poverty status (PPI score – extreme poor, absolute poor, food poor), household size, age, education, income-generating activities, financial inclusion status, and other vulnerability criteria?

This research question is discussed throughout Section 3.

Knowledge, awareness, practices and perceptions

What is the awareness and understanding of the second level land certificate (SLLC), the standard land rental contract (SLRC) and the SLLC-linked loan for beneficiaries and non-beneficiaries, including for relevant sub-groups?

This research question is discussed in sections 4.1.2 and 5.1.2 for A2F and LR respectively.

What are the main practice and perception changes that resulted from A2F and LR interventions for beneficiaries and non-beneficiaries, including for relevant sub-groups?

This research question is discussed in sections 4.1.1 and 5.1.1 for A2F and LR respectively.

What is the evidence that SLLC and rental formalisation leads to increased perceived security of tenure, including for relevant sub-groups?

This research question is discussed in section 5.1.3.

GESI and adverse effects (discussed throughout sections 4 and 5)

What is the impact of rental formalisation on vulnerable groups, including female-headed households and women in male-headed households?

What is the impact of the SLLC-linked loan on vulnerable groups, including female-headed households and women in male-headed households?

What are potential adverse effects of the SLLC-linked loan and the standard land rental contract (SLRC), including for relevant sub-groups?

Investment and income changes

What is the evidence that the standard land rental contract (SLRC) leads to increased investment in land, including for relevant sub-groups? What is the evidence that this has an impact on farmers' incomes?

This research question is discussed in sections 5.2 and 5.3

What is the evidence that the SLLC-linked loan increases investment in agriculture and thereby increases yields and incomes for rural households, including for relevant sub-groups?

This research question is discussed in sections 4.2 and 4.3

Methodology

Evaluation and Survey design

The EEU 2019 impact survey collected a range of household, person and parcel-level data from a sample of 926 EEU beneficiaries and 456 non-beneficiaries. The survey focused on probing the effects of the A2F and LR interventions experienced by beneficiaries through a process of behavioural change, practice change, and investments on land and income-generating activities. The survey also collected demographic and socio-economic data in an effort to profile EEU beneficiaries and benchmark them to non-beneficiaries.

The results were analysed following a contribution analysis approach, by which changes in target indicators associated to EEU interventions are mapped along the interventions' results chains. Factual changes in target quantitative indicators were compared and contrasted with self-reported knowledge, awareness, perceptions and practices of the respondents. In order to get an indication of investment and income changes in the short term, the survey asked respondents to recall historical data before and after the SLLC-linked loan or formal land rental contract were accessed. The survey will be repeated in 2020 by following up with the same respondents in order to test further changes in behaviour and investments.

In terms of investments, the survey methodology focused on changes in three key dimensions: 1) the choice of income-generating activities carried out by the household; 2) the use of and expenditures in inputs for cropping, livestock rearing and non-farm economic activities; 3) land investments on water and conservation structure at parcel level. The main measure of investment is the total cost in Birr of inputs used across all the income-generating activities.

In terms of income, the survey methodology allows us to generate evidence to estimate an additional and attributable income effect that directly relates to the additional investment that was made due to the EEU intervention. The survey was not designed to derive a robust measure of the total household income before and after the intervention, taking into account a comprehensive list of all income sources[1].

Sampling Framework

Two distinct sample frames were required in this study. For those reached by EEU, the sample frame was all those reached by A2F or LR in kebeles identified in a listing process conducted by the EEU team in Addis Ababa. Within those kebele, each household had an equal opportunity to appear in the sample frame. For the non-beneficiary comparison group, households for interview came from the same kebele as the beneficiaries. The sample frame in this regard is all non-reached households in these kebele.

To obtain a sample of EEU beneficiaries, firstly, for each of the A2F and LR interventions areas, 3 woredas were purposefully selected in each of the 4 LIFT regions where A2F and LR interventions have been undergoing since before July 2017. To streamline logistics of data collection, within the selected woredas, kebeles were also identified to have reached an adequate number of loans and LR transactions[2]. Secondly, from complete lists of beneficiaries, the sample was drawn by the systematic random sampling[3]. To ensure the short-term investment and income impacts may be observable, beneficiaries who joined the programme before March 2017 or after July 2018 were excluded from the sample. These cut-off dates were determined by, respectively, the start of the 2017 Belg (short rains) season and the start of the 2018 Mehr (long rains) seasons. Also, specific quotas were reserved to female respondents in specific regions-groups where number of female beneficiaries are lower.

Non-beneficiaries were sampled by random walk in the communities/kebeles where sampled EEU beneficiaries live. The non-beneficiary surveys were carried out with the head of the household, provided that he or she was a land holder who had received an SLLC. This allows comparing EEU beneficiaries with the population of land holders who have benefitted from SLLC but not directly from A2F and LR interventions.

This process generated a final valid sample of 1,382 respondents disaggregated in Figure 1 below.

Figure 1 - EEU 2019 Impact Survey Sample Sizes

	Renter		Rentee		A2F		Non-beneficiary		
Region	Males	Females	Males	Females	Males	Females	Males	Females	Total
Tigray	34	37	66	1	N/A	N/A	36	20	194
Amhara	39	30	63	3	98	28	108	31	400
Oromia	46	15	59	1	100	38	122	19	400
SNNP	49	11	57	1	134	16	100	20	388

[1] Further details on the survey methodology can be found in a detailed concept note shared with DFID in December 2018.

[2] For LR, 2-5 kebeles were selected; for A2F, 1-4 MFI branches were selected.

[3] Lists of beneficiaries at woreda level are compiled by partner MFIs and LRSPs and aggregated centrally in the LIFT office.

Grand Total	168	93	245	6	332	82	366	90	1382

In order to report results representative of the population of A2F and LR beneficiaries, the data are weighted according to the regional and gender breakdown of the EEU populations active in the March 2017-July 2018 period. Notice that due very low number of female rentees in the LR population and ensuing low sample size, in the following we report and discuss results for the rentee group as a whole.

Challenges and limitations

CAPI issues and bulky questionnaire routing led to a delayed start of the survey. Due to complicated CAPI routing requirements, the finalisation of the CAPI version of the questionnaire took longer than expected. The issues were mostly due to the complicated routing of recall questions in the investment and incomes modules. The first week of data collection was therefore devoted to additional testing and updating of the CAPI tool. A sample top-up was agreed upon to make-up for some erroneous data points recorded in the first week of data collection.

Recall bias and respondent fatigue affected the reporting of investment and income data. The questionnaire, built applying tried-and-tested design approaches, was reported to be mostly clear and uncomplicated to respond to for both enumerators and respondents. However, during the review of the raw data, several data inconsistencies were identified, specifically with questions relating to investment and income in the season after the intervention had taken place. More specifically, instances were found where respondents had stated investments had increased in the year after the SLLC-linked loan or standard land rental contract, but the actual calculated total cost of inputs in Birr had not increased. Furthermore, some data appeared to be missing where the respondents had first stated to be involved in an income-generating activity, but had not reported any inputs used.

After extensive consultations with field managers and enumerators, including a short survey and interviews conducted with enumerators, the inconsistencies were attributed to recall bias, fatigue and sequencing issues experienced by the respondents. Questions relating to the season before the intervention were asked first in one batch, followed by questions relating to the season after the intervention. Some respondents felt that they had already told enumerators about their farming activities when responding to the year before questions, and then felt less motivated to respond to the same questions again for the season after.

To manage some of these inconsistent data and missing values, some observations were excluded from the analysis and some missing values imputed. A detailed note on how cleaning of investment and income data was managed can be found in Annex 1 of this report.

Safety concerns in Wenberema woreda led to replacing the sample with another woreda. The Amahra enumerator team encountered a political unrest leading to safety risks while traveling in direction of the Wenberema woreda in Amhara. A number of roads had been blocked by local youth in protest with the government. To avoid any further risk, the sample for Wenberema was therefore replaced in the Jabi Tehnan woreda.

Demographics and Socio-economic Characteristics of EEU Beneficiaries

Household demographics

Analysis of household demographics in terms of size of the household, age of household members, and education levels allows to draw the following profiles for the EEU beneficiaries and non-beneficiaries:

Rentees are the youngest and renters the oldest sub-group: Rentees are on average the youngest group in the survey. The average age of male rentees and of their household members is 40.3 and 21.1 years respectively. By contrast, the oldest group are renters, for whom the average age is 49.2 years for men and 46.4 years for women. The A2F group is somewhat in-between renters and rentees in terms of age profile (men average: 46.9; women average: 44.1). In turn, A2F women are younger than their non-beneficiary peers (44.1 v. 49.6) (see Table A1 in Annex 4 and Figure 2 below).

Across the groups considered, women have relatively smaller households than men. The sub-group with the smallest average and median household size is the one of female renters (mean: 3.1 people). Interestingly, the household size profile of the women renters is very close to the profile of women heads of the households in the non-beneficiary population. The mean size of the household ranges from 4.7 (male renters) to 5.1 people (male A2F) across the male heads of the households (see Table A1 in Annex 4 and Figure 2 below).

Across the four groups (A2F, renters, rentees and non-beneficiaries), female household heads are less likely than men to be able to read and write. In addition, in women-headed households, also the educational attainment of household members is on average lower than for male-headed households. In

terms of group differences, educational levels of renters are in-line with the non-beneficiary population, while A2F beneficiaries and rentee beneficiaries are significantly more educated than their non-beneficiary counterparts (for example, proportion of women who cannot read nor write is 78.3% among A2F women and 93.4% among the non-beneficiary women) (see Table A2 and A3 in Annex 4 and Figure 2 below).

Figure 2 – Age, HH size and literacy of EEU beneficiaries and non-beneficiaries

	Renter		Rentee		A2F		Non-beneficiary	
Variable	Males	Females	Males	Females	Males	Females	Males	Females
Age	49.2	46.4	40.3	40.5	46.9	44.1	46.6	49.6
HH size	4.7	3.1	5.1	3.3	5.3	5.1	5.1	3.0
HH head can read and write	38.4%	16.7%	57.2%	25.8%	57.7%	18.0%	39.6%	6.6%

Interpretations of findings

Rental transactions seem to shift land from the old to the young: On average, rental transactions shift land from older and smaller households to younger and larger households, and from women-headed households to male-headed households. As expected, age and household size differences between EEU renters and rentees suggest that availability of labour to farm land is critical to the decision to rent land in or out.

A2F and rentee beneficiaries are more educated: The educational advantage of rentees and A2F beneficiaries over the non-beneficiary population suggests better educated people might find it easier to engage with formal contracts. However, the large share of beneficiaries who are illiterate indicate low educational attainment is not a barrier to benefit from EEU.

As the range of household demographic profiles of A2F, renters and rentees partly overlap, it is found that age, household size and education are important but not necessarily sufficient conditions to determine land rental and financial behaviour.

Land holdings

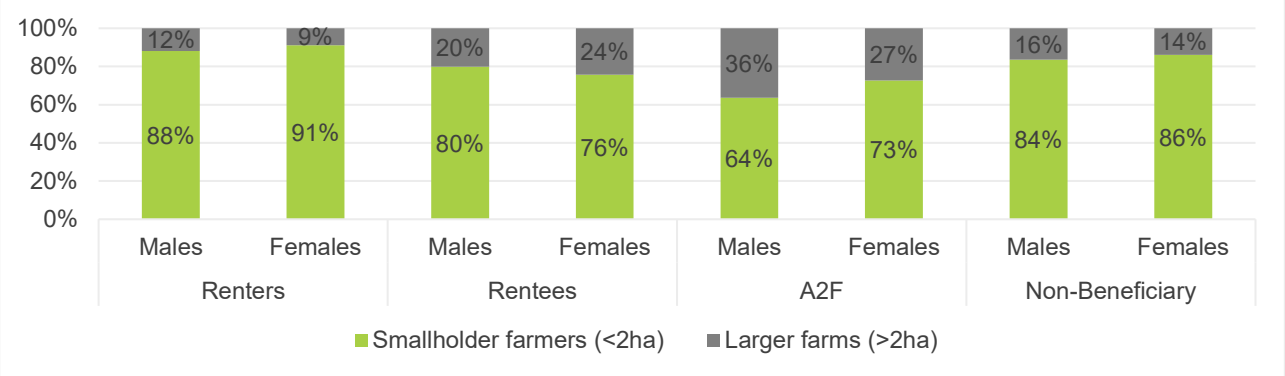
Land remains one of the major economic assets supporting livelihoods and food security in rural Ethiopia. We therefore assess whether EEU reaches households who have larger or smaller land endowments than their non-beneficiary peers. We use two key measures: the total size of the land holdings in hectares in the last year, counting all parcels accessed through renting in or held directly; and the share of households who are smallholders, defined as households holding or renting out in total less than 2 hectares of land (excluding land rented or sharecropped in) (see Table A4 and Figure 3 below).

A2F beneficiaries hold more land: In the non-beneficiary population, the average size of land held or accessed by renting by male-headed households is 1.45 ha (median 0.78 ha) and by female-headed households is 1.12 ha (median 0.67 ha). By contrast, A2F beneficiaries have much larger land holdings on average (men: 2.79 ha, median 1.57; women: 1.66 ha, median 1.28 ha). On average, their land holdings are roughly twice as large non-beneficiaries'. Male renters hold 1.18 ha on average, and female renters hold 0.96 ha. Rentees also have smaller land holdings than non-beneficiaries (average 1.17 ha) (see table A4 in Annex 4).

Smallholders make-up a large share across all beneficiary groups: In the non-beneficiary population, the share of smallholders is 84% among male-headed households and 86% among female-headed households. Smallholders make up the largest share across EEU renters. The A2F group has to smallest share of smallholders, which however still includes 64% smallholders among the males' group and 73% among the females' group (see Figure 3 below).

Landless use the SLRC to rent-in land: The EEU rentees group include a substantial share of households who do not own any land directly – 14% of male-headed households. Notice that only land holders were selected to participate in to the non-beneficiary survey (see table A4 in Annex 4).

Figure 3 – Percentage of Smallholder farmers across EEU beneficiaries and non-beneficiaries



Interpretations of findings

Though A2F beneficiaries are relatively larger land holders on average, over 64% of them are smallholders. This suggests that larger land holdings might help farmers to access the SLLC-linked loan. Larger land holdings are likely associated to higher incomes and therefore signal creditworthiness to the lending MFI. However, MFIs still manage to target a substantial number of smallholders with the SLLC-linked loan.

As EEU renters and rentees' land holding sizes are similar or lower than in the non-beneficiary population, it can be concluded that EEU LR interventions are successful in reaching smallholders.

Income-generating Activities

The livelihood strategies of rural households are usually dominated by cropping for both subsistence and generation of cash income. Livestock rearing and non-farm activities such as trading of household merchandise offer secondary options. In this section we look at how the survey groups compare in terms of engagement in cropping, livestock rearing and non-farm activities (see Table A5 in Annex 4 for detailed summary results).[4]

As expected, cropping is the most prevalent economic activity across all groups: in the year before the SLLC-linked loan or standard land rental contracts, 81% of male renters, 93% of male rentees and 97% of male A2F beneficiaries engaged in cropping. Among these households, the average number of crops grown is lowest for renters (1.46) and highest for A2F beneficiaries (2.51), while rentees are in-between the other two groups (1.58). These results suggest renters and rentees are mainly growing only one crop while A2F beneficiaries diversify their crop production.

Cropping is relatively less prevalent in the female groups than in the male groups: 74% of female renters and 93% of female A2F beneficiaries engaged in cropping. The average number of crops was also lower than in the men's groups: female renters grow on average 1.40 crops and female A2F beneficiaries 1.83.

Rentees focus more on livestock rearing, but A2F beneficiaries diversify more through livestock and by-products: Rentees focus most on livestock rearing across all groups (75% of male and 76% of female rentees are involved in livestock rearing). However, among households who have livestock, the A2F groups hold more types of livestock than the renters and rentees (M: A2F 3.02, rentees 2.01, renters 1.55; W: A2F 2.87, renters 1.34), and also focus most on livestock by-products across all groups (23% of males and 12% of females). Therefore, A2F beneficiaries appear to diversify more their livestock income-generation strategies than renters and rentees (see Figure 4 below).

Renters are more likely to engage in non-farm business: Interestingly, renters are comparatively more likely to be involved in non-farm business compared to rentees and A2F groups (see Figure 4 below). Therefore, although the majority of renters still engage in cropping, renting out seems to allow a relatively low share of farmers to diversify away from cropping and into non-farm activities.

Figure 4 – Percentage of Smallholder farmers across EEU beneficiaries and non-beneficiaries

[4] Note that for beneficiaries we report here on economic activities in the year before the SLLC-linked loan or standard land rental contract. For non-beneficiaries instead, we refer to the latest agricultural year prior to the survey.

Monetary and multidimensional poverty

Several definitions and measures of poverty can be used to profile the rural households' economic status. In this report we use three different indicators:

- **Simple Poverty Scorecard (SPC):** The 'probability of poverty' as measured by the Simple Poverty Scorecard (SPC), a parsimonious tool using eight indicators based on the Ethiopia's 2011 Welfare Monitoring Survey to estimate the likelihood that a household has consumption below a given poverty line. Poverty ratios are calculated by household count.
- **Household poverty perception:** A summary of household self-reported perception of their economic status and recall of episodes of food scarcity in the past year.
- **Wealth index based on assets:** A wealth index aggregating data on the ownership of 32 household or business assets. Each asset is weighted from 1 to 5 according to their relative value, as estimated through online searches and qualitative observations of the EEU Addis team (see Table A6d in Annex 5 for a detailed list of assets used). We further use cluster analysis to identify four wealth groups having a similar wealth score[5].

Findings across the three indices show somewhat similar patterns. Below findings from the **Wealth index based on assets** are summarised (see Figure 5), while detailed analysis of the other two indices can be found in Annex 5:

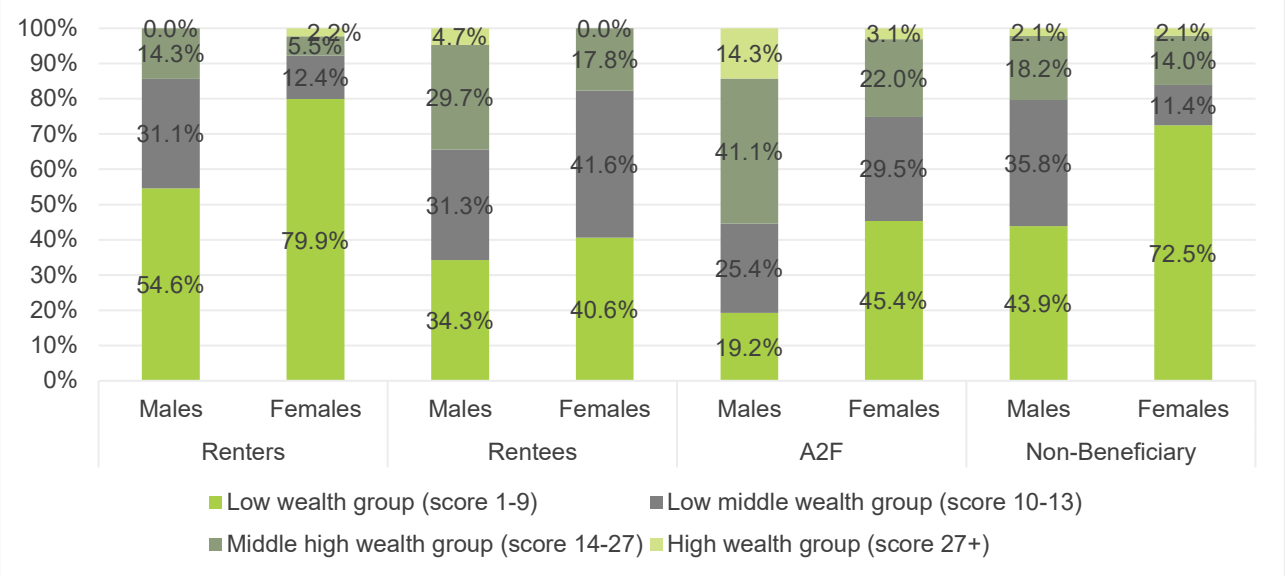
A2F beneficiaries are on average wealthier than other groups: A2F beneficiaries are the comparatively wealthier group, particularly male respondents. Among these, 14.3% come from the high wealth group, and 41% from the middle-high wealth group. The second wealthiest group are male rentees: 4.7% of them come from the high wealth group and 30% from the middle-high wealth group.

Renters are the least wealthy group: By contrast, the EEU renters stand out as the least wealthy population: 80% of females and 55% of males are in the low wealth group. Only 7% and 14% of male and female renters respectively come from one of the high or middle-high wealth group. Renters also have an asset wealth deficit against non-beneficiaries as well, although by a fairly low margin: among non-beneficiaries, 72% of females and 44% of males come from the low wealth group.

Women are on average less wealthy than men: Women's sub-groups within EEU renters and rentee, A2F and non-beneficiaries are significantly less wealthy than their men counterparts. On average, the proportion of women from the low wealth group is about 25 percentage points higher than men.

[5] An average-linkage clustering approach is used to identify the four wealth groups.

Figure 5 – Wealth index based on household assets across EEU beneficiaries and non-beneficiaries



Typical Profiles of the Wealth Groups

The four wealth groups used in this analysis are constructed based on data on household's ownership of 32 distinct household and business assets. Groups are ranked, so that households in the high or middle high wealth groups own more assets, and more valuable ones, than households in the low middle and low wealth groups. Households in the same wealth group may own different combinations of assets. Nonetheless, some assets characterise the profiles of households in the groups more than others, i.e. have higher correlation with the wealth status. These assets are reported in the table below.

Low wealth group	Low middle wealth group	Middle high wealth group	High wealth group
Plough	Mattress	Mattress	Smartphones
Electric stove	Mobile telephone	Radios	Video deck
Bicycle	Handlooms	Television	Sofas
Hand-pushed cart	Radios	Shelf for storing goods	Motorcycle

Vulnerable groups

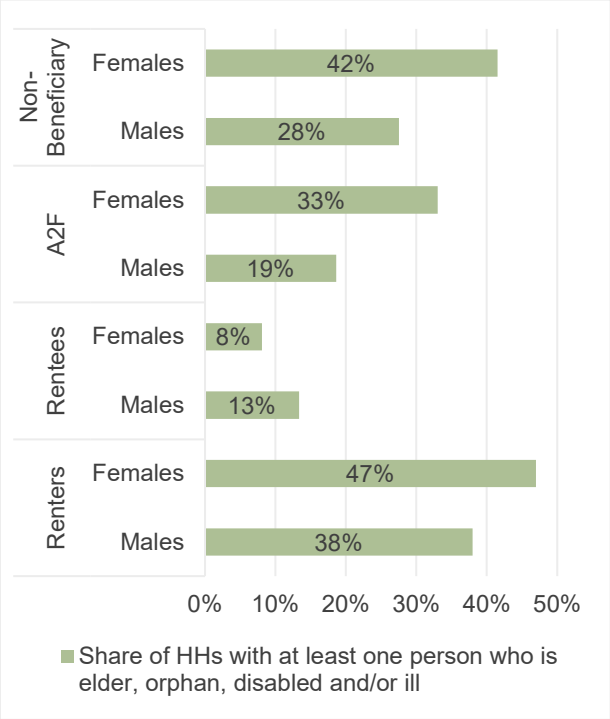
The EEU A2F and LR interventions do not only target the general population of rural households with SLLC, but are actively tailored to benefit specifically a range of vulnerable sub-groups. The vulnerability profiles of the EEU groups are therefore critical to assess whether EEU reaches its intended targets. In this context, women in male headed households, female-headed households, elderly (over 65 years-old), orphan or abandoned children and persons with disabilities are the relevant sub-groups.

Our impact survey gathers household members' data as provided by the respondent, who is the main responsible in the household for the loan or the standard land rental contract; the sex-disaggregated group share of households who have an elder, a person with disability, an ill person, or an orphan or abandoned child are used to compare groups. The share of households with any vulnerable person is also employed as a summary of the different sub-groups (see Table A7 in Annex 4 and Figure 6).

Renters are the most vulnerable group: Across the EEU beneficiaries and non-beneficiaries, vulnerable groups are most prevalent in the male and female renters' groups. Almost half of female renters (47%) have at least one vulnerable person in the household, against 42% in the non-beneficiary population of female-headed households. Male renters also report high vulnerability rates (38%, against 28% in the non-beneficiary men group).

Other groups also show significant vulnerability: The share of households with a vulnerable person are also quite high in the A2F groups (19% for men and 33% for women), however they are lower than in the general non-beneficiary population. Rentees' households are the least vulnerable from a social inclusion perspective, not only as compared to renters and A2F beneficiaries, but also against the broader non-beneficiary population.

Figure 6 – Vulnerability criteria across EEU beneficiaries and non-beneficiaries



Interpretations of findings

Both A2F and LR interventions manage to reach and engage with the vulnerable people that are actively targeted. In addition, the sharp difference in the share of vulnerable groups between renters and rentees (36% against 11% among male-headed households) highlights again that land rental allows households with insufficient labour capacity to transfer land to other households who might have excess labour capacity. As such, by facilitating land rental to take place, the LR interventions may enhance land productivity. This finding is further corroborated in the investment and income data analysis.

The SLLC-linked loan targets and successfully reaches both female-headed households and women in male-headed households.

Access to Finance Sector

Output level

Effects of the SLLC-linked loan on Financial Inclusion

In this section we explore the features of the SLLC-linked loan in terms of amounts, interest rates, duration and compare these with the previous use of finance by A2F beneficiaries, as well as other available forms of finance in the non-beneficiary population.

SLLC-loan amounts and interest rates: In the survey sample the SLLC-linked loan amount ranges from 5,000-50,000 Birr, has an average of 31,000 Birr and a median of 30,000 Birr; the annual interest rate charged by the MFI ranges from 15% to 19%, with an average of 17.4%. The duration of the loan is 1-3 years, with an average of 2.2 years.

On average against men, women access slightly smaller loans (29,000 v. 32,000 Birr), pay slightly higher interest (17.8 v. 17.2%), while obtaining longer durations (2.5 v. 2.0 years). This difference might be due to the composition of the female A2F group, which is largely based in Amhara where ACSI offers longer term loans with higher interest.

Meeting customer demand: The loan amounts were deemed adequate to meet financial needs by 69% of the borrowers. The remaining 31% would have been willing to take up about 74,000 Birr more on average. Over one quarter of them could have applied for over 100,000 Birr more. This suggests that the demand for credit was met for the majority of A2F borrowers, however a small sub-group would be looking to apply for more credit.[6]

Repayments are timely and most re-apply for a second, bigger loan: The sample also includes 31% of borrowers, who by the time of the survey had already repaid the first SLLC loan in full (36% M, 23% W). Among them, 73% repaid on time, and the remaining still 27% repaid before the due date. After final repayment, 85% of the respondents applied for a new SLLC loan, and among them, 78% obtained it. Of these, 73% got a larger loan amount, 21% the same amount, and 6% got a lower amount.

51% of A2F beneficiaries stated to have made compulsory deposits into the MFI saving account. Among them, about half made monthly compulsory deposits of about 250 Birr on average, while 36% made one upfront deposit only. Voluntary deposits of 300 Birr on average were also made by 61% of the households, generally on a monthly basis.

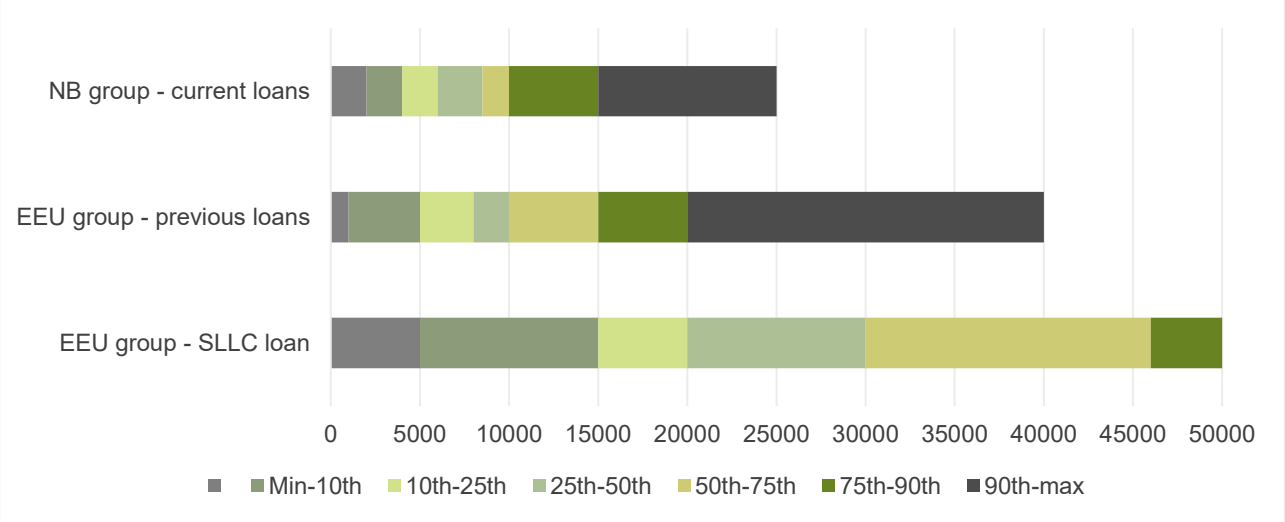
The SLLC-linked loan increases financial inclusion and access to credit: Before taking up the SLLC loan, most EEU borrowers did not have any formal or informal credit. Only 1% had a loan with informal lenders such as a neighbour, and only 12% had taken out a formal loan from an MFI or a Savings and Credit Cooperative (in about 9 out of 10 cases this was a group loan with the MFI). For those respondents who took out different kind of credit before, such as a group loan, the average loan amount equalled 11,800 Birr. The SLLC-linked loan therefore offers credit amounts to A2F beneficiaries that are on average 2.6 times higher than other available credit instruments, such as group loans, could offer. Figure 7 below shows the distribution of loan amounts taken-out before the SLLC-linked loan by the SLLC-linked loan clients, compared to loan taken-out by non-beneficiaries and the actual SLLC-linked loan. It can be seen that the SLLC-linked loan offers much higher loan amounts as compared to alternative credit, offering customers to place much more meaningful investments than what was possible before.

Financial barriers faced by EEU borrowers before taking out the SLLC linked loan included the expectation that the loan would be too expensive or get rejected (37%) which might indicate supply-side constraints or lack of information, and behavioural constraints such as fear of being in debt (20%).[7] However, it is important to note that about half of EEU borrowers stated not to have had interest in borrowing before.

[6] In response to high demand for the loan, after mid-2018 ACSI MFI in Amhara has gradually started to raise the loan ceiling to 100,000 Birr and increased the maximum loan term to 5 years. The survey sample includes three borrowers who took out more than 50,000 Birr. These are considered as outliers for the purpose of the loan amounts analysis.

[7] Instances of supply-side constraints are recorded for responses: 'There was no credit institution to ask from', 'I did not know any formal lender', 'It was too much trouble to get started', 'I expected the interest to be too expensive', 'I expected the minimum loan amount to be too high', and 'I could not find a loan group who would take me in'. Instances of behavioral constraints include: 'I did not like the idea of being in debt' and 'I feared I was not able to pay off the loan'.

Figure 7 - SLLC-linked Loan Amounts Compared to Other Available Credit Instruments



Non-beneficiary results

Alternative credit offers lower loan amounts for non-beneficiaries: In the two years previous to the survey, only 2% of non-beneficiaries had an informal loan (mean loan amount was 2,763 Birr). About one out of 10 non-beneficiaries had taken out a formal loan, specifically a group loan from an MFI (7%), an individual loan from private banks (1%), or both group and individual loans from a Saving and Credit Cooperative (2%). For these respondents who had a loan, the loan amounts ranged 2,000-25,000 with an average of 8,600 Birr. Women-headed households accessed slightly smaller loans (7,200 v. 9,000 Birr). Therefore, the SLLC linked loan offers unlocks credit amounts that are 3.6 times higher than other available credit instruments. As also mentioned above, this finding should be treated as a rough estimate, since the sample of non-beneficiaries with a loan is small (47 observations).

In terms of financial inclusion, 31% of male non-beneficiaries have a bank account with a formal financial institution such as a private bank, public bank, microfinance institution or saving & credit cooperative. This proportion is 25% among females.

Knowledge, Awareness, Perceptions and satisfaction of the SLLC-linked loan

As the above results suggest, the SLLC-linked loan is a significant innovation in the Ethiopian rural economy. This new instrument introduces using an SLLC as guarantee for the loan, and as we have seen, also increases significantly the loan amounts available through other credit forms at a competitive interest rate. The SLLC-linked loan has also reached a number of first-time borrowers. It is therefore important to test the borrowers' attitudes and perceptions of this new instrument. The survey asked a range of attitudinal and factual questions about the SLLC-linked loan, and taking out credit more generally.

Knowledge and awareness

Borrowers understand legal requirements regarding pledging land: We test borrowers' knowledge of two key legal provisions required for the borrower to use his or her land as a guarantee for the loan. The first provision is that the parcel of land that is pledged against borrowers' default cannot be legally transferred via rental, gifting or other wilful way until the debt is repaid. Among the A2F beneficiaries, 88% correctly understand the land cannot be transferred. However, 12% believe they can transfer the land. This proportion is slightly higher among women than men (16% v. 9%).

Most borrowers understand the consequences of default: The second provision is that in case of default, the parcel of land is seized by the MFI temporarily until the debt is repaid. 60% of borrowers correctly understand that they will not lose the land forever. However, 40% think they will lose the land. Interestingly, the correct view is held by 82% of women against only 48% of men. This difference might partly be due to different regional composition of women and men A2F populations.

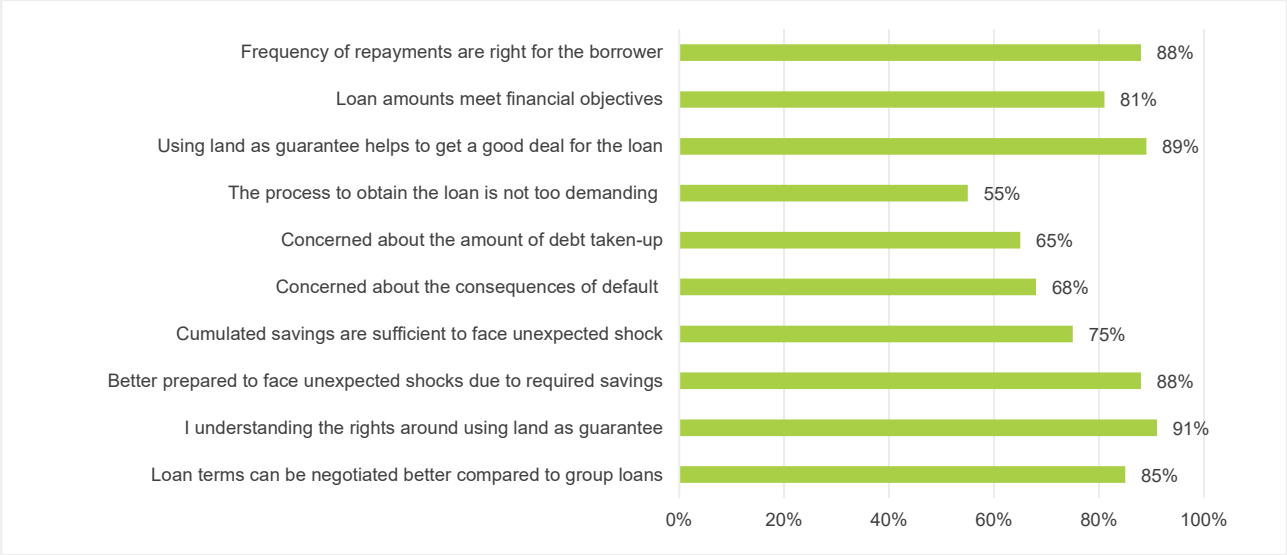
Attitudes and perceptions

We further assessed attitudes and views of the borrowers against a range of possible benefits as well as potential adverse effects related to taking up the SLLC linked loan. The survey presented respondents with statements and asked to report attitudes on a 5-point Likert scale ranging from 'strongly agree' to 'strongly disagree'. As responses to this type of questions can be affected by social desirability bias and a bias

towards agreeing to the statements, we introduce both statements expressing negative and positive attitudes. Results need to be taken with care.

Figure 8 below summarises the percentage of borrowers that strongly or somewhat agree with the respective positive or negative statements regarding the SLLC-linked loan.

Figure 8 – Percentage of A2F beneficiaries that strongly or somewhat agree with statements regarding the SLLC-linked loan

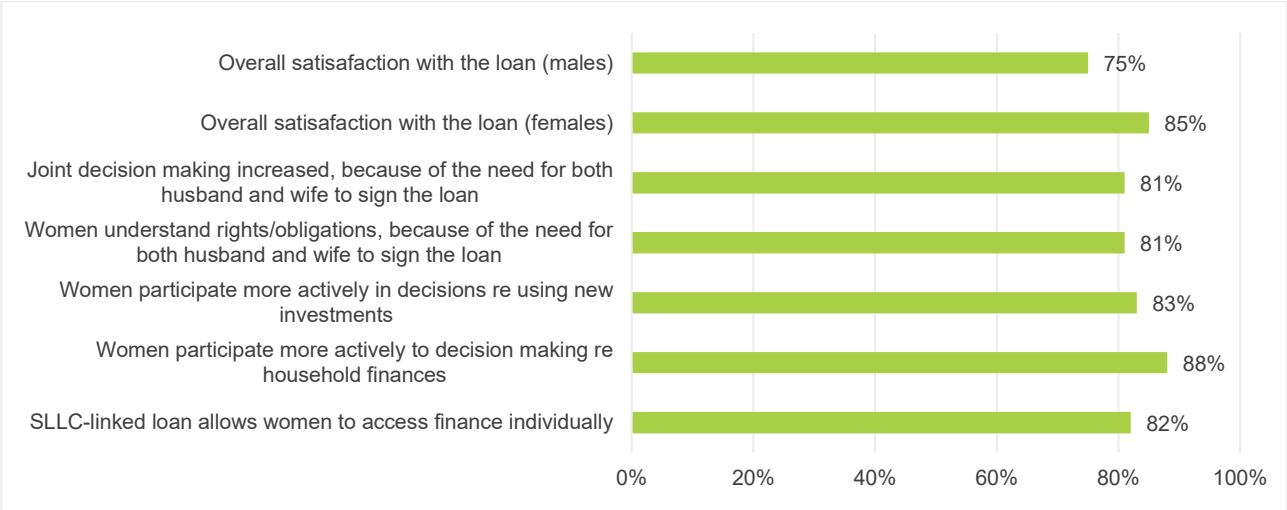


Feeling insecure about repaying the loan also emerged as the major risk faced by A2F beneficiaries when accessing the SLLC-linked loan (T 35%, M 24%, W 53%). However, a large proportion of A2F beneficiaries do not perceive major risks from accessing the loan (45% T, M 55%, W 27%).

Both attitudes and knowledge point towards sustainability of the SLLC-linked loan: When interpreting the different attitudinal results and comparing these to the high and timely repayment rates, it can be derived that borrowers both understand and respect the repayment requirements, which is a good indication for the sustainability of the SLLC loan.

Effect of the SLLC-linked loan on women: The survey also asked specifically female respondents about how the SLLC linked loan is affecting them through a similar range of qualitative statements. From the responses it can be concluded that women enjoy a range of specific benefits from engaging in the SLLC-linked loan as summarised in Figure 9 below.

Figure 9 – Percentage of female A2F respondents that strongly or somewhat agree with statements regarding the SLLC-linked loan



Overall satisfaction is high, but high among women: Overall, virtually all borrowers report being very satisfied or somewhat satisfied with the loan (78% and 18% respectively). Proportion of borrowers who are very satisfied is slightly larger among women than among men (85% v. 75%). See Figure 9 above.

The SLLC-linked loan creates incentives to collect SLLC: It was also found that the prospect of taking up the SLLC-linked loan motivated 72% of the borrowers to collect or demand their SLLC.

Risks and Potential Adverse Effects of the SLLC-linked Loan

As emphasised in the previous section, A2F beneficiaries feel somewhat afraid of the burden of the loan. We therefore also investigated actual cases of default or late repayments as part of the survey.

Based on their 1-3-year records, only 2% of A2F beneficiaries have ever missed a repayment of the loan. The reasons for missing the repayment, according to the borrowers, were crop failure, death of livestock, business failure, and, in one case in the survey, the borrower actually forgetting repayment was due.

A2F beneficiaries on average predict being able to pay the instalments of the loan in the year after the survey. However about one third of them think they might miss a repayment (5% very likely, 27% somewhat likely). Concerns about missing a repayment are low on average, however a small proportion (2%) of borrowers are very worried about this eventuality.

Outcome level

Economic Purpose of the SLLC-linked Loan and other forms of loan

Through the SLLC-linked loan, MFIs introduced a new form of finance specifically targeted to investments in productive activities. As loan takers might pursue other financial objectives alongside investment, we investigate the actual economic purpose of the loan and make-up of the loan amounts across the expenditures that were financed.

The SLLC-linked loan is invested in productive income-generating activities: 88% of A2F respondents stated that the loan was taken to invest in productive activities (83% among female respondents); 7% aimed to finance common household expenditures, 2% health expenditures, 2% education expenditures, and 6% aimed to pay for renting land for farming.

The SLLC-linked loan catalyses new investments: Among the respondents who invested in productive activities, 83% stated that they were interested in financing the same activities in the year before they took out the loan, but were not able to do so (this holds for 81% of female respondents). 84% confirmed that they would not have been able to finance the additional activities carried out without the SLLC-linked loan, in full or in part, according to a self-assessment of their financial capacities.

Cropping is the main activity that A2F respondents used their loan for (63% among all respondents, 68% among female respondents), followed by livestock rearing (32% M, 26% W) and other non-farm business (5% M, 6% W). On average, households invested 20,300 Birr in cropping inputs, 11,500 Birr in livestock, and 23,102 Birr in non-farm businesses[8].

SLLC-linked loans are not only larger than other available forms of credit, but are also more frequently taken out for productive purposes: 78% of non-beneficiaries with a formal loan (i.e. about 10% of the group), stated using previous forms of finance to invest on productive activities. However, 20% of them used the loan to finance household expenditures, 2% for health expenditures, 2% for costs of dealing with emergencies, 2% to pay outstanding debts, and 12% to rent additional land.

Investments in Income-Generating activities

We quantify the additional investments generated by the SLLC-linked loan in the first year of the loan term by assessing the increase in the total value that was invested in inputs relating to cropping, livestock and non-farm activities. Since cropping is the main productive activity where EEU households invest, we analyse these investments in isolation as well (see Table A8 in Annex 4).

The average measured investment increase after the loan was 7,054 Birr; of this increase, 3,590 Birr was allocated to cropping inputs. These additional costs correspond to a 26% increase across income-generating activities and a 23% increase for cropping.

Notice that these estimates were calculated on a sub-sample of A2F because of data limitations due to recall bias, sequence effects and fatigue. See Annex 1 for a detailed overview of the issues and data management techniques employed to clean the data.[9]

[8] Notice that a number of households used the loan to invest in a combination of cropping, livestock rearing, and non-farm activities.

[9] Here it is important to note that the average additional investment in Birr is much lower than the average loan amount (7,054 Birr v. 31,000 Birr). These two results are not immediately comparable however, because while data on the loan amounts were deemed accurate and taken at face value, a number of conservative corrections and exclusions of inconsistent data from analysis were made to generate the investment increase. As such, the investment increase in Birr is comparable to the pre-loan overall investments, but not to the loan amount. See the data management annex (Annex 1).

Impact level

Net Income Effect of the SLLC-linked Loan

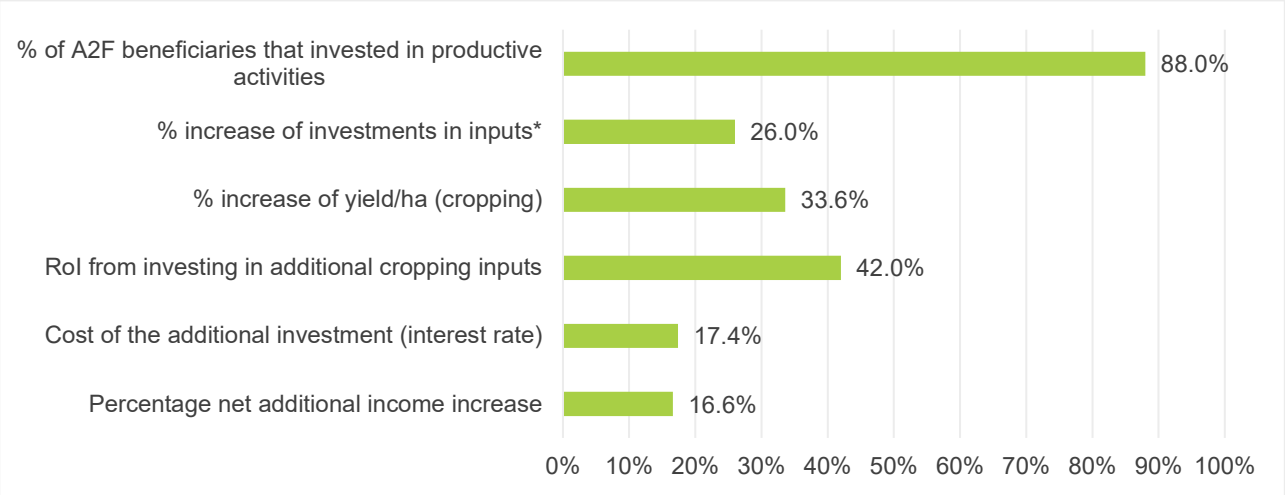
The net income effect of the SLLC-linked loan is calculated based on the expected returns of the attributable increase in investments discussed in Section 4.2.2 (see also Annex 2 and Annex 3 for more detail on the methodology). It is important to note that we are not measuring overall household income, but are instead focussing on a specific income-generating activity (such as cropping), in which the household states it has *invested* as a result of the EEU intervention. The box below on key terms and methodology elaborates more on this.

Additional investments in agricultural inputs increase yields per hectare: We estimate that land yields – i.e. the equivalent value in Birr of the output per hectare from cropping – increased by 33.6% in the scenario in which the loan amount is allocated entirely to cropping.

Returns from SLLC-linked loan investments far outweigh the costs of finance (interest rate of the loan): The increased yields per hectare pay off and it can be estimated that as a result the additional investment in cropping inputs yields an average return on investment (RoI) of 42%.[10] This is significantly higher than the costs of acquiring finance, or in other words the interest rate of the SLLC-linked loan, which ranges from 15-21%, and has an average of 17.4%. It can therefore be derived that the investments made with the SLLC-linked loan are profitable net of the interest rate.

SLLC-linked loan investments are profitable and increase household income: For A2F beneficiaries, we estimate that the additional investment attributable to the loan generates a net additional income increase of 16.6% in the first year of the loan. This is measured as the additional output generated minus the additional input cost or investment for the household at the median of the distributions.

Figure 10 – Summary of investment and income effects for A2F beneficiaries



Additional attributable income increases – Key Terms and Methodology

To measure increases in investment and income, it is important to note that we are not measuring overall household income, but are instead focussing on a specific income-generating activity (such as cropping), in which the household states it has *invested* as a result of the EEU intervention. For example, if a household has taken-out the SLLC-linked loan, we would ask first what the loan was used for. A possible response could be that more fertilizer was purchased. We would then ask for which crop the fertilizer was used most, and would then continue to ask questions about the yield of that crop before and after the loan was taken-out. Lastly, we calculate the value of the additional yield in Birr to estimate the revenue from the investment.

To retrieve the return of the investments in Birr, we estimate the average return of cropping input expenditures for the affected crop in the year before the loan or standard land rental contract, and use it as a proxy for the return of investing in the following year. This approach allows us to isolate the impact of the EEU intervention to estimate the *additional investment and income effect*.

***Return on investment (ROI)*:** This is the additional value per unit of investment, meaning that costs are deducted from the value of the return in birr.

[10] The return on investment (RoI) can be defined as the net investment gains over total investment costs, and can be calculated by deducting the costs of agricultural inputs from the Birr value of the harvested crops divided again by the costs for inputs. In other words, after deducting the costs for inputs, the remaining value of the harvest is 42% of the initial costs of inputs. This does not take into account the costs of finance yet (interest rate of the loan).

Percentage additional investment increases are calculated based on the change in the costs (in Birr) incurred to run the income-generating activity that was invested in (cropping, livestock or non-farm activities) before and after the EEU intervention. See also Annex 2 below for more detail on the methodology.

Percentage net additional income increases are calculated based on the increased returns in Birr coming from the specific activity (cropping, livestock or non-farm activities) that the farmer has invested in. We define the additional income as the difference between the revenue received (in Birr) and the costs incurred when comparing the season *before* the EEU intervention was accessed and the season *after* the EEU intervention was accessed (additional profit). We divide this additional income (in Birr) by the total cropping income in the year before, which is measured as income per hectare multiplied by the land area under cropping. See also Annex 3 below for more detail on the methodology.

Land rental sector

Output level

effects of land rental formalisation and service provision on land rental practice

In this section we investigate how, by entering into a standard land rental contract (SLRC) agreement, LR beneficiaries change their land rental practices, in terms of level of market participation, tenant-holder relationships, rental duration, and prices. Data was collected from respondents at parcel level for the agricultural year before and after the new contract. We can therefore track the holding status of each parcel and features of any rental agreement at the parcel level.

The SLRC draws in first-time renters and rentees: The first relevant finding, which is consistent with EEU monitoring data, is that in the year before the standard land rental contract, 33% of male renters and 28% of female renters were not renting out any of their land. Among rentees, 37% were not engaged in renting in. This is not just for the parcel relevant to the new agreement, but across all the parcels held or accessed through rental.

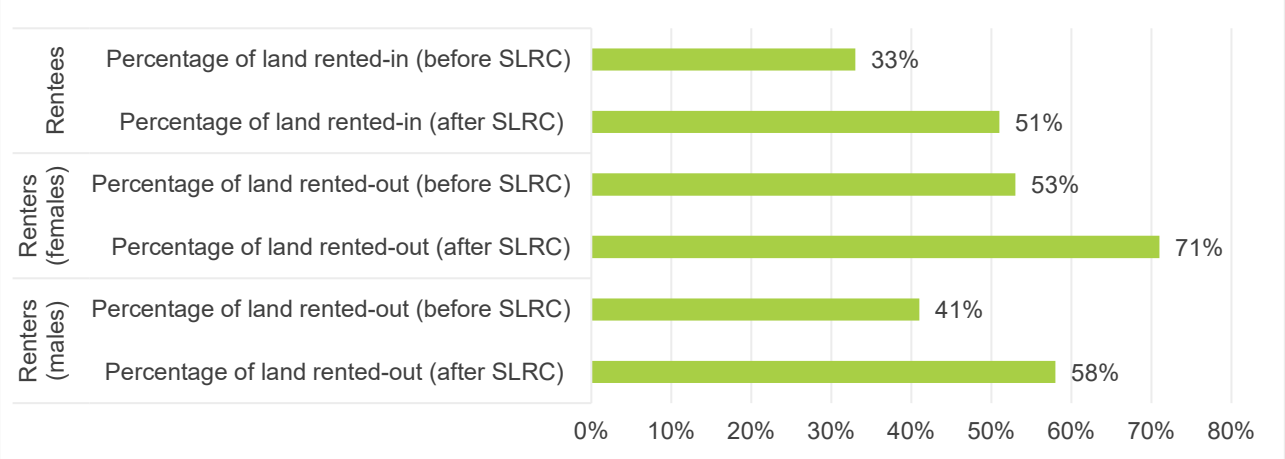
The land area rented in or out increases with the SLRC: With the standard land rental contract, EEU renters and rentees are also increasing their market participation by renting in or out more. The share of land area held or accessed that is rented or sharecropped out increased from 41% to 58% among male renters, and from 53% to 71% among female renters. Rentees also increased the land area they rent or sharecrop in, specifically from 33% to 51% (see Figure 11 below). These relative increases in the land area rented (in or out) correspond on average to +0.18 ha for male renters (from 0.33 to 0.51 ha), +0.13 ha for female renters (0.46-0.59 ha), and +0.15 ha for rentees (0.30-0.45 ha).

The hike in land market participation is almost entirely due to first-time renters and rentees. While for first-time renters the land area rented out grows from none to 55% of total land holding on average, among existing renters this share grows slightly from 66% to 68%. Only 7% of existing renters rent out more land when they enter in the SLRC. Their average increase was 0.22 ha, which corresponds to a 29 percentage points growth (from 49% to 78%).[11] Also, the average land area accessed by new rentees is 0.34 ha (median: 0.24 ha), while for renters the average land area rented out with the SLRC and not previously rented out is 0.44 ha (median: 0.24). Characteristics and behaviour of first-time renters are further analysed in the box at p. 23.

Men prefer cash-based renting, while women focus more on sharecropping: Another impact of the standard land rental contract is that while both cash rent and sharecropping agreements are used, men mostly opt for cash-based renting while women prefer using sharecropping arrangements. On average, male renters increased their share of land area rented out for cash from 31% to 43% of the total land held or accessed, while the area sharecropped out increased from 10% to 16%. Female renters increased their share of area rented out for cash from 20% to 26% while the land sharecropped out increased from 34% to 48%. As stated above, the increase is largely due to first-time renters rather than due to existing renters.

[11] First-time renters' results are not disaggregated by gender due to small samples in the sub-groups.

Figure 11: Percentage of land rented in or out before and after the introduction of the SLRC



Rental agreements are formalised between family members and neighbours: Although the standard land rental contract is supposed to encourage rental agreements outside of family and close friends, the evidence from the survey does not suggest that the tenant-landholder relationships have changed significantly in the first year of the contract. Among all standard land rental contracts, about 50% are made between family or friends and 50% between other households, within the same community (43%) or within the kebele (about 6%). Overall, the make-up of tenant-landholder relationships was found to be very similar in the benchmark group of non-beneficiaries. Therefore, the primary focus of the beneficiaries seems to be around formalising the agreements even if they are with family members or friends.

Under the SLRC rental terms are longer: Renters and rentees who enter in the standard land rental contract set slightly longer rental terms against the prior agreements on the same parcel. Specifically, a number of rentals agreed for the period of 1 year or under were converted into 2-year agreements: the share of 1-year agreements dropped from 63% to 53%, while the share of 2-year agreements increased from 23% to 36%. The share of longer-term agreements (three years or more) remained fairly low (about 11%). One-year contracts are also most prevalent in the non-beneficiary group (65%).

Under the SLRC rental prices increase in favour of renters: On the parcels that are continuously rented by the same rentee, the average price of rent paid increased with the standard land rental contract from 4,500 to 5,000 Birr, an increase of 11%. This suggests that following a formal registration process improves the bargaining power of renters.

New rentees tend to pay higher rental prices: Based on parcel level data, rentees who rent in a new plot pay 16% more on average than rentees who rent the same plot pay (29,700 Birr v. 25,600 Birr per hectare). The rental rate per month of contract duration records an even larger difference between new rentees and incumbents (+68%, 1,700 Birr v. 1,000 Birr per hectare per month). Note that we are comparing rental prices paid for different plots, i.e. plots rented by new rentees and by continuing rentees. Therefore, unobserved differences between these plots, for example in terms of fertility of the land, could bias the results. Findings should be treated with care. This finding shows the impact that the LRSP support can have when facilitating new rental agreements for renters, allowing for a better negotiating position of the on average more marginalised renter group.

Knowledge, Awarness, Perceptions and satisfaction with land rental formalisation and service provision

In a rental market dominated by informal, short-term agreements, access to a legal process of formalisation and registration of contracts are significant departures from common practice and are still largely experimental. We therefore investigate the reception of the interventions from EEU beneficiaries. We set the stage by analysing behaviour and views in the non-beneficiary group.

Non-beneficiaries' knowledge, awareness and attitudes towards land rental formalisation and land rental market

Informal land rental practices across males and females: We investigated non-beneficiaries' views and participation in formal land rental transactions. Questions were tailored depending on the participation status of a non-beneficiary respondent in land rental. For context, in the non-beneficiary group, 37% of households rented or sharecropped land in or out in the 5 years before the survey. Participation was higher among female respondents, mainly due to the higher proportion of households renting or sharecropping out (37%

among females v. 9% among males). Conversely, male respondents are more likely to rent or sharecrop in land than females (27% v. 9%).

Perceptions of benefits of formal and informal practices: Among non-beneficiary renters and rentees, only 13% have ever used a written land rental contract. Households using formal contracts reported enjoying a similar range of benefits to the EEU beneficiaries; specifically, 67% of them cited that formal contracts reduce the risk of disputes, 31% that they can prove the agreement happened and 19% that they can get the land back at the end of the rental term. By contrast, among renters and rentees who do not use formal contracts, the most commonly held views are that written agreements are not needed because verbal agreements with witnesses provide sufficient certainty (50%), or because 'they have always engaged informally' (38%). About one in ten also think written agreements are not needed for rental transactions between relatives or close friends, or for sharecropping agreements.

Low rates of formal practices amongst non-beneficiaries: Also, among non-beneficiary renters and rentees, only 5% have ever registered a land rental contract with the kebele or woreda in the 5 years before the survey. Registration is largely seen as unnecessary among non-beneficiaries: 30% of them do not understand what it is the purpose, and 18% do not see any benefit from it. Furthermore, about 50% in this group have not registered because they 'have always engaged informally'. Practical issues such as the prospect that registration might lead to tax payments on the transaction were virtually absent from non-beneficiaries' responses.

KLACs play an important role in awareness raising: About 40% of the non-beneficiaries reported being aware of the existence of the standard land rental contract[12]. The prime sources of information about the form were a KLAC member (58%) and neighbours or friends (19%). Interestingly, 9% also reported to have learned about the SLRC from an LRSP. Other sources included family members (10%), WLAO members (10%), and radio and TV (7%).

The views and perceptions of non-beneficiary renters and rentees (actual or prospect) are indicative of several relevant patterns in terms of access to information, access to favourable land rental contracts, knowledge of rights and obligations, and security from renting. We rank the views according to how commonly these are shared across the non-beneficiaries.

(i) Renting out is not perceived as 'risky' by 84% of the non-beneficiary renters and rentees. Perceived risks and experience with disputes in the broader non-beneficiary group are investigated in greater detail in Section 5.1.3.

About 70% of households report knowing what their rights and obligations are when they enter in a rental agreement. This holds for both rental agreement with family or friends or with other households.

The majority of rentees do not think there is 'enough' land to rent-in in their respective areas (58% agree v. 22% disagree). However, when it comes to the land area they can actually rent or sharecrop in, this is perceived as 'insufficient' by 39% of rentees, while 38% think it is sufficient. It can be inferred that land available for rental is relatively scarce in the areas targeted by EEU, however not all prospective rentees appear to be critically constrained by lack of available land.

About 56% of non-beneficiary renters and rentees feel they have access to information about the rental market in their areas (against 33% who do not). In spite of this, 53% also hold the slightly contradictory view that it is difficult to find suitable rentees or parcels-renters in their areas (against 30% who do not).

A slightly majority of 51% think sharecropping agreements are more 'favourable' than cash rental, against 41% who do not agree.

In sum, non-beneficiaries did not express an overwhelming majority for or against most of the stated opinions. Taking attitudes of non-beneficiaries as a benchmark, the findings above can be interpreted as an indication of the additionality and behaviour change brought about by LRSPs, who help explain and formalise land rental agreements and change attitudes and behaviour.

Figure 12: Non-beneficiary views regarding land rental agreements

Statement	Agree	Disagree
It is difficult to find a suitable rentee / parcel-renter	30%	53%
Information about prices, rent and rental conditions are easily available in my area	56%	31%
The terms of the rental agreements that I can access to are favourable to me	41%	30%
When entering in a rental agreement with someone who's from my family or a friend, I know what my rights and obligations are	72%	25%

[12] Enumerators showed a copy of the standard land rental contract template to the respondents and asked: "In the past 3 years, Kebele and Woreda land offices have introduced a new formal land rental contract template (standard). Were you aware of this standard form?"

When entering in a rental agreement with someone who's not from my family or a friend, I know what my rights and obligations are or would be	71%	20%
[only rentees or interested in renting] In my area, there is enough land to rent in or sharecrop in	22%	58%
[only rentees or interested in renting] The land area I can rent in or sharecrop in is insufficiently large or insufficiently fertile for me and my household	39%	38%
Rental/sharecropping agreements of a duration of more than one year, i.e. two Meher seasons or more, are more favourable to me against one year/one seasons contracts	51%	33%
Sharecropping agreements are more favourable to me than cash rent agreements	51%	41%
Renting out is a risky business that could end up with the renter losing the land in the end	10%	84%

Land Rental Formalisation – EEU beneficiaries

KLACs are raising awareness complemented by LRSPs: Firstly, EEU renters and rentees reported hearing about the standard land rental contract from a range of sources. The three most common sources of information were KLAC members (42% renters, 46% rentees), the LRSPs (23% renters, 24% rentees), and neighbours or friends (18% renters, 10% rentees). This suggests LIFT's push for KLACs to use the standard contract has been effective, and that LRSPs successfully complement their efforts. No significant difference was found between male and female beneficiaries with respect to access to information, which highlights the success of the awareness raising efforts.

LRSPs broker formal registration at the Kebele office effectively: According to EEU beneficiaries, about 90% of standard land rental contracts are stamped and registered at the kebele, while 8% are registered both at the kebele and at the woreda. Very few contracts appear to have been registered only at the woreda (1%). Between 1-2% of contracts were not registered at all. This suggests a high consistency in following due legal process for households who benefit directly from EEU.

LRSPs effectively push for formalisation of land rental contracts: Before using the SLRC and benefitting from the SLLC-enhanced legal process, about 3 out of 4 LR beneficiaries had never registered land rental transactions with kebele or woreda. Rentees were slightly more likely to have registered before than renters (67%). In terms of gender differences, female renters were more likely to not have registered before than male renters (83% v. 71%).

The SLRC increases perceived tenure security: LR beneficiaries report enjoying a range of benefits from using a written formal contract as well as registering it with public authorities. The three most cited benefits are 1) to reduce the risk of land disputes (over 80% in both groups); 2) to prove the agreement happened (about 50%); and 3) to avoid scams like double renting (over 33%). Renters, in particular, enjoy the certainty of receiving the land back from the rentee at the end of the rental term (about 25%).

LR beneficiaries perceive improved rental terms: Most LR beneficiaries attribute to the standard land rental contract an improvement in the terms of their rental agreements, for example rent price or duration of the agreement. More specifically, about 90% think they obtained better rental terms (50% 'strongly agree', 40% 'somewhat agree'). These results should be treated with care, however, since attitudinal views in surveys may be subject to desirability bias.

The SLRC incentives farmers to collect their SLLC: The link between SLLC and access to a formal rental registration process appears to be solid: over 60% of EEU renters stated to have been motivated to collect or request their SLLC in order to use the standard land rental contract.

EEU LR beneficiaries would use the SLRC again: Most LR beneficiaries also think they are (very or somewhat) likely to use the SLRC again and register their transactions in the future (overall renters: 78%, M 87%, W 65%; overall rentees: 83%).

Land Rental Service Providers (LRSPs)

LRSPs provide important brokering services and awareness raising: The specific support received by EEU beneficiaries were to:

Find a suitable rentee or a suitable parcel-renter: 49%

Obtain information about prevailing rental market price and conditions: 60%

Understand the standard land rental contract and its benefits: 92%

Understand the registration process and its benefits: 86%

LRSP's services are valued by their customers: Services received were rated very highly by both renters and rentees. Specifically, 66% of renters rated the support received very useful, and 32% somewhat useful; while 74% of rentees rated it very useful and 25% somewhat useful. Renter and rentees' demand for LRSP

services remains strong after 3 years since they were first introduced. Over 70% of EEU renters and 80% of EEU rentees will likely look to use LRSP support in the next two years.

Offering compensation is common for some renters and rentees: Among renters, 12% of males and 5% of females paid or offered an in-kind gift to the LRSP for the services received; 7% of rentees also paid the LRSP. Also, about 5% of LR beneficiaries who used an LRSP reported using also another land rental intermediary. Among EEU bens who used an LRSP but did not pay him/her, 50% of renters and 58% of rentees would be willing to pay for similar services received in the future.

Effects of land rental formalisation and service provision on perceived security of tenure and land disputes

To investigate the potential effects of formalisation on land rental disputes and perceived security of tenure, we track both experience with disputes by recall questions and assess the qualitative, perceived risks of various land rental configurations among both EEU beneficiaries and non-beneficiaries. Specifically, respondents were asked to report factual data and perceptions about three stages: 1) the time prior to SLLC; 2) the time following SLLC and demarcation; 3) the time following the standard land rental contract. The third stage of course applies only to LR beneficiaries.

Frequency and types of disputes

Both the SLLC and the SLRC have a positive effect on reducing disputes: The records of disputes reported by EEU renters dropped both after the SLLC and after the standard land rental contract. Among households who were renting out at each stage, the trend in the number of households experiencing a dispute is as follows:

Prior to SLLC: 32%

After SLLC but before standard land rental contract: 14%

After standard land rental contract: 10%

The above results suggest that after SLLC disputes dropped by over half, and after the standard land rental contract by another 30%.[13] A similar trend was experienced by non-beneficiary renters, who started from a lower propensity to experience disputes vis-à-vis EEU renters:

Prior to SLLC: 15%

After SLLC: 9%

One outstanding finding from the above results is that EEU renters appear to have been more likely to experience disputes than the non-beneficiary renters, prior to the SLLC. This might suggest that EEU LR interventions are particularly appealing to households who feel insecure about renting out, because of past experience of disputes.

Perceptions around the rentee not giving back the land are reduced as a result of the SLRC: From our proposed types of disputes, the most frequently experienced ones in the before-SLLC stage were caused by: a) the rentee not giving back the land at the end of the rental term (11%); b) in a sharecropping agreement, the rentee trying to scam the renter by claiming to have had a smaller harvest than what he had really had (10%); c) the rentee failing to pay the rent in full (10%); d) the rentee paying a ‘very low’ rent (5%). We find that after the SLRC was used, the propensity for the rentee not giving back the land has dropped significantly from 11% overall to 3.5%.

Perceived security of tenure

Alongside the actual frequency of land disputes, perception of various risks associated with renting in and out also affect land rental market performance and efficiency. Both the introduction of SLLCs and access to formal rental processes are expected to improve the perceived security of farmers to enter into land rental contracts. We therefore surveyed EEU and non-beneficiary respondents’ perceived risks, by asking to rate the level of two risk types associated to three land rental scenarios on a six-points ordinal scale from ‘extremely low’ to ‘extremely high’. The surveyed risks are for 1) the renter loses the land at the end of the rental term, and for 2) both renters and rentees engage in a land dispute. The three land rental scenarios that we tested were:

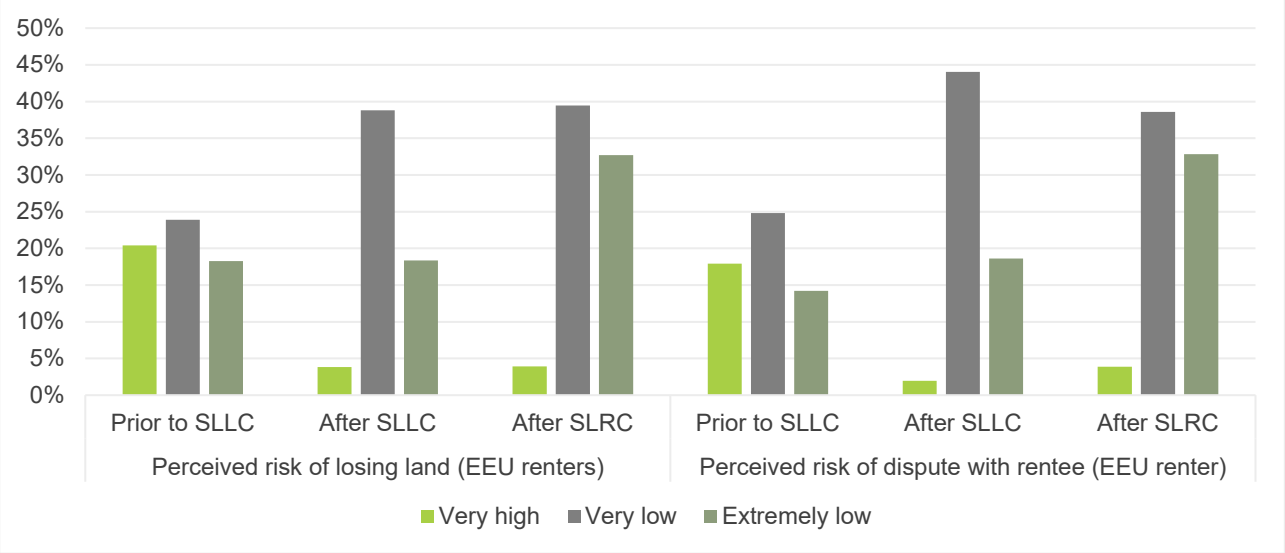
1) Renting out (in) to (from) a relative or friend
2) Renting out (in) to (from) a non-relative/friend

[13] Several caveats apply to the above results. Firstly, the number of households renting out changes across the three periods of time, as many households enter the rental market after SLLC or after standard land rental contract. Secondly, the disputes reported after the standard land rental contract are not necessarily related to the agreement under that contract, since the question was not specific about that contract and could include also existing informal agreements.

3) Renting out (in) for three or more years continuously

SLLC and rental formalisation increase perceived security of tenure: Figure 13 below shows the perceived risks of EEU renters when renting-out to non-relatives. It can be observed that the risk of losing land to the rentee as well as the risk of having a dispute with the rentee continuously decrease from before SLLC, to after SLLC and finally after SLRC. Note that the risks perceived after SLRC have the highest proportion of the 'extremely low' category, indicating the additional effect of the SLRC on reducing risk perceptions. Similar trends are observed for EEU rentees across the three categories mentioned above. The full risk rating for all groups is reported in Table A9 in Annex 4, including additional commentary and findings.

Figure 13: Perceived risks of EEU renters when renting-out to non-relatives



outcome level

effects of land rental formalisation and service provision on the propensity to invest in land

Land rental agreement formalisation and LRSP services can positively affect investments and incomes through two mechanisms: (1) formalisation and LRSP services make existing land rental agreements more efficient and secure for both renters and rentees, and (2) tenure security for vulnerable households that have not engaged in land rental before are reduced, allowing these to enter the market.

It is important to note that the propensity to invest may vary depending on whether the renter or rentee have engaged in land rental before. We make the following observations:

Renters are the more vulnerable group invest less and seemingly are more prone to use rental incomes for consumption: 95% of renters who used to rent out in the year before using the standard land rental contract, stated they had not made any significant investments, on land or in any income-generating activities after signing the new contract. Among them, 39% state they do not carry out any income-generating activities, except for renting out their land, while the remaining 61% are engaged in cropping, livestock and/or non-farm business. We surmise that, based on qualitative findings, most renters are using their higher earnings from rental for household consumption purposes. This is reflected in the main reasons for renting out indicated by renters: for male renters the main reason is 'need for cash' (63%), while for female renters this is 40%. 57% of females rent out because they lack manpower.

Rentees increase their investment on land after using the SLRC: 53% of rentees who have continuously rented in the same land, before and after the standard land rental contract, stated they invested more on the land after signing the contract. Virtually all of these beneficiaries (96%) claimed to have invested more on cropping inputs, rather than on soil and water conservation structures. Therefore, although renters do not appear to be investing more as a result of the land rental formalisation, the investments from rentees leads to higher yields and land productivity, which translates into higher incomes for renters. This can already be observed in an increase in the rental price of on average 11% as discussed above, which increases the household income of renters.

Fallow land is used more productively through new renters entering the market: Among the renters who did not rent out their land before, 17% left the land in fallow before, while 83% used to farm it themselves. Of the renters who left their land in fallow, 67% are still engaged in cropping, while the remaining 33% are not. Since rentees are more productive than renters on the rented-out land, the new

rental agreements lead to a more productive use of land, leading to higher incomes for both renters and rentees.

Investments in income-generating activities

We quantify the additional investments stimulated by EEU activities in the first year of the standard land rental contract by assessing the changes in total value of agricultural inputs invested in productive activities. Since cropping is the main productive activity where EEU households invest, we analyse these investments in isolation as well (see Table A8 in Annex 4).

Rentees invest more in the rented land after using the SLRC, while renters focus on short-term financial needs: In the first year of the standard land rental contract, overall investments in income-generating activities (cropping, livestock and non-farm activities) improved on average by 9% among EEU rentees. Among renters, however, the change overtime was negligible. This can be explained, since renters are amongst the more vulnerable households and are more likely to be in financial distress. The additional income from renting-out a parcel is therefore likely to be used to serve short-term financial needs, such as household consumption or other expenditures, related to education or health.

Impact level

Net Income Effect of land rental formalisation and service provision

The net income effects of the SLRC and LRSP service are calculated based on the expected returns of the attributable increase in investments discussed in Section 4.2.2. It is important to note that we are not measuring overall household income, but are instead focussing on a specific income-generating activity (such as cropping), in which the household states it has *invested more in* as a result of using the SLRC. Annex 2 and Annex 3 describe the analytical steps to arrive at the income estimates presented below.

Rentees' additional investment in cropping inputs increases yields: For rentees switching from an informal agreement to the formal SLRC, we estimate that land yields[14] increase by 6.5% as a result of the rentee's additional investment in cropping inputs. Yields also improve for land that was not previously rented-out, but was farmed (or left fallow) by the renter. In this case, the yield increases by 94% on average when the land is farmed by the new rentee against the previous year when the land was farmed by the renter (note that the sample used is of 56 renters and 78 rentees).[15] Once we account for the cases where the renter left the land in fallow, and therefore did not have any produce on that particular land area, the yield increase is 135%. Net income per hectare of land rented out is estimated to increase by 121%.

With these results we can also estimate that the average yield increase across all land rented under SLRC is +36%. This calculated as average between yield increases in case of continuous rentals and new rental agreements on parcels not previously rented, weighted by the relative composition of these two in our sample.[16]

Rentees' investments in rented-in land are profitable: For rentees, investing in cropping inputs yields an average return on the investment (RoI)[17] of 71%. This is the additional value per unit of investment, meaning costs are deducted from the value of the return in Birr. It can be concluded that the additional investment in agricultural inputs on the rented-in land is profitable for the rentee.

Rentees benefit from increased incomes as a result of investing more in the rented-in land: For rentees, we estimate that the additional investment committed as a result of SLRC generates a net income increase of 3.4% in the first year of the standard land rental contract term. This is measured as the additional output generated minus the additional input cost or investment for the household at the median of the distributions. The overall pre-contract incomes are proxied by the total income from cropping, also taken at the median of the distribution.

Renters' incomes increase as a result of higher rental prices: Although renters do not enjoy higher incomes through investing more in their land or other economic activities, they carry out themselves, we observe that their rental incomes increase by about 11% as a result of shifting from an informal agreement to the formal SLRC. Renters, however, who switched rentees as a result of formalisation and LRSP facilitation

[14] By yield we refer to the equivalent Birr value of harvested output per hectare.

[15] The high productivity effects of renting out land in Ethiopia have been studied extensively in the empirical literature. For example, recently Chen, Restuccia and Santaeulàlia-Llopis (2017) estimate that agricultural productivity at zone level increases by 0.49 percent when land rentals increase by 1 percentage point. In Annex 3 we also show more detail around the overall productivity differential between renters and rentees, in self-cultivated land.

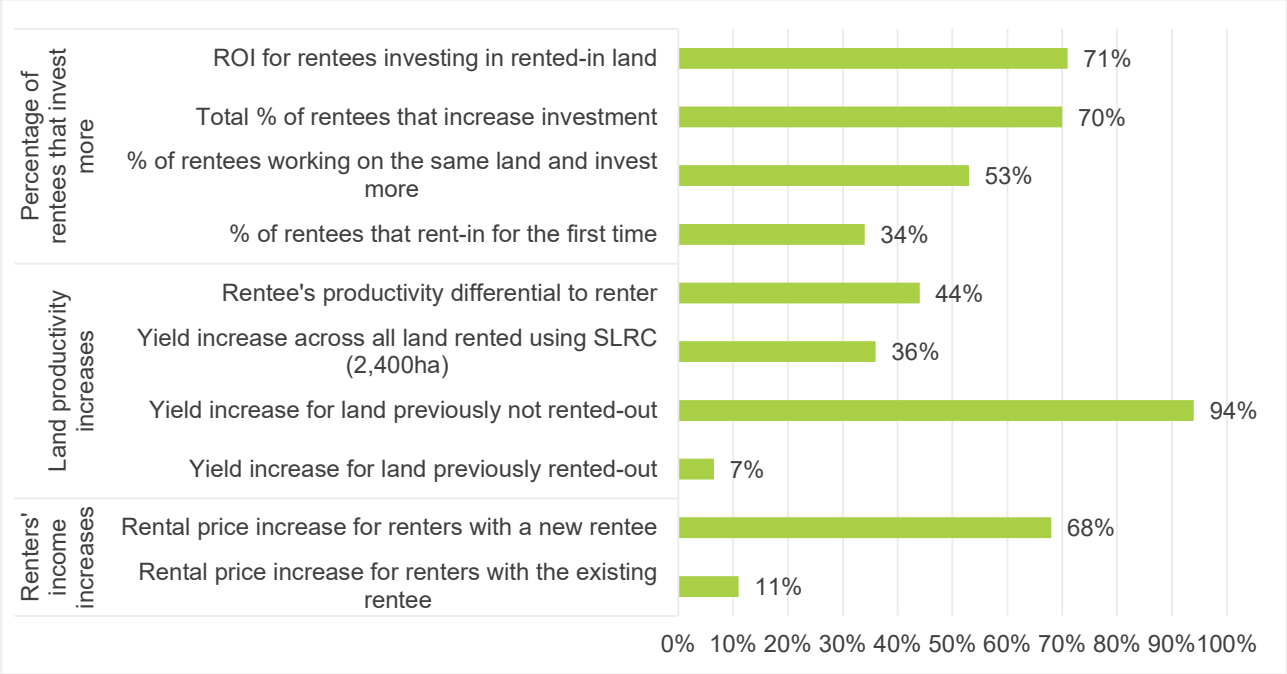
[16] Specifically, this is: 135%*23%+6.5%*77%. Note that the weights are recalculated based on land area under SLRC in the two sub-groups (0.44 ha for renters who start renting out with SLRC, and 0.54 ha for existing renters).

[17] The return on investment (RoI) can be defined as the net investment gains over total investment costs, and can be calculated by deducting the costs of agricultural inputs from the Birr value of the harvested crops divided again by the costs for inputs. In other words, after deducting the costs for inputs, the remaining value of the harvest is 42% of the initial costs of inputs. This does not take into account the costs of finance yet (interest rate of the loan).

however experienced a much higher average **price increase of 68%**. This is an indication that some renters used to agree to prices that are below the market price, but through the support of the LRSP have a strengthened negotiating position.

Overall, in can be concluded that the re-allocation of land provides higher productivity of land, and that an additional investment and income effect resulting from higher security of tenure through the SLRC is materialising. Differences between cash rental and sharecropping are further discussed in Box 1 below.

Figure 14: Summary of investment and income effects for renters and rentees



Box 1: The differences between cash-based rental and sharecropping agreements

Cash-based rental and sharecropping agreements carry different incentives to exert efforts and use inputs that boost productivity. Particularly, a wide literature, summarised in Deininger, Ali and Alemu (2013),[1] points to the lower incentives provided by sharecropping agreements against cash rentals, leading to lower incomes for both the renter and the rentee. We want to test, therefore, whether such findings are broadly confirmed in our data, as well as investigate differences in agreement terms.

Most cash-based and sharecropping agreements are short-term (one year), however the share of 3-year contracts is higher in cash-based agreements. Specifically, the frequency of one-year contracts is equal under both cash rental and sharecropping (53%), however contracts of 3 years or more are more frequent under cash rental than in sharecropping (13% v. 8%). These results are based on parcel-level data provided by EEU rentees for the first year of the SLRC (i.e. each contract is counted as separate).

Compared to sharecropping, cash rentals are more frequently stipulated between friends or between other households. The contracts between relatives are 33% of cash rent agreements and 43% of sharecropping agreements.

Duration of the agreement	Cash rental	Sharecropping
1 year or under	53%	53%
2 years	34%	39%
3 years or more	13%	8%

Landlord-tenant relationship	Cash rental	Sharecropping
Relative	33%	43%
Friend	15%	10%
Other household or party	52%	47%

Input intensity and land productivity are substantially higher for rentees who use cash rent agreements vis-à-vis sharecropping. The average cost of cropping inputs per hectare of land farmed, based on all expenditures across crops and parcels, is 92% higher among rentees who use exclusively cash rent agreements against rentees who use exclusively sharecropping agreements (the median difference is 14%). The average value of production per hectare, based on the household's 'primary crop' in the rented-in plot, is 100% higher. Rentees who both rent and sharecrop are excluded. In addition to the usual caveats around input cost and productivity estimates, small sample sizes and high variance of these variables suggest caution in interpreting these results. Also note that it is unlikely that these differences will be entirely due to the choice of contract, but also to differences between farmers, plots or other factors. However, the sign of the estimated input use and productivity differences is consistent with the theory and with the empirical literature (see Deininger, Ali and Alemu, 2013)[1].

	Cost of cropping inputs (in Birr)			Productivity (in Birr)		
	N	Mean	Median	N	Mean	Median
Sharecropping	51	20,521	13,834	21	5,334	4,359
Cash rental	147	41,083	28,500	109	10,252	4,959

[1] Deininger, Klaus, Daniel Ayalew Ali, and Tekie Alemu. "Productivity effects of land rental market operation in Ethiopia: evidence from a matched tenant–landlord sample." *Applied Economics* 45.25 (2013): 3531-3551.

Recommendations

Access to Finance

- The EEU team needs to support/encourage MFIs to expand their awareness raising activities as many respondents stated various perceived risks kept them away from loans in the past. Therefore, many prospective borrowers could face similar obstacles.
    - Additionally, when prospective clients apply and are going through the process, MFIs need to provide clear information around the setting of the rates, product features, consequences of default, and so forth as there are still a high amount of misinformation regarding these issues.
    - Consequently, MFIs also need to continue close monitoring and follow-up of their clients to better track repayment and offer support along the process.
- In addition, support to MFIs and WLAOs in improving the efficiency of the loan process, especially regarding the clearance at the kebele and woreda levels. Additionally, MFIs should partner with WLAOs in promoting the product and raising awareness.
- There is also a need to continue refining the product to meet the demand of the clients. Though compared to the group loan this product offers 2.6 times higher loan size and many clients are satisfied with the existing loan terms, during the survey a small sub group of 31% would like to apply for higher loan sizes; hence, the MFIs need to strategically think through the product by further stratifying the potential clients of the SLLC loan. At the same time, it is important for partner MFIs to see which clients may be more appropriate for a smaller individual loan less than the current loan size floor.
- Many borrowers in the survey indicated that common reasons for missing repayment were crop failure, death of livestock, business failure. Supporting the development of the microinsurance products should continue to be enhanced and MFIs need to be encouraged to explore this area further so as insurance companies.
- Although many of the findings regarding women were very positive, it is important to follow up this study with a qualitative assessment to confirm the findings and probe the reasons behind the results.

Rural Land Rental

- Assess the reasons behind selection of cash rental when compared to sharecropping. Especially in identifying the underlying reasons for the gender differences in rental preference. Why is it that women view sharecropping which can be perceived as a long-term investment as more secure than cash renting? Is there a regional variation to this choice as well? This is an important finding to build on as it will help LRSPs to be able to more readily read the market when it comes up to the rental season ahead of the planting season.
- Further investigate why the breakdown of who renters rent out to has virtually not changed when compared to the Non-Beneficiary group. Although, the focus right now is formalisation of the agreement, we also expect a shift from mostly friends or relatives. It would be useful to know if this is because there are no networks in place to help them to identify rentees and as such, why they stick to renting out to family. If this is the case, then this is an area that LRSPs need to become known for and be seen as facilitating potentially more lucrative rental transactions outside of the immediate proximity of the renter.
- Encourage LRSPs to expand their awareness raising activities to further catalyse practice change among farmers. In addition, investigate why although 40% of Non-Beneficiaries are aware of the formal process, they are not changing their practice.
    - Explore ways to support KLACs in strengthening their awareness raising activities so that it better incentivises behaviour change in a similar fashion to the LRSPs.
- Utilise the relevant findings on the value of LRSPs to further lobby regional and woreda administrations to pilot the LRSP payment model. Especially focusing on LRSPs direct impacts on rental clients and the overall willingness of rental clients to pay. Furthermore, the lobbying needs to ensure that the message of sustainability is clear. Right now, LRSPs are working on a volunteer basis and this means that there is a heavy reliance on their personal time and availability. The pilot will hope to identify instances where due to the LRSPs being paid, they are able to develop a more stable service provision. Further to this, any future research needs to investigate potential additional

business opportunities that LRSPs can undertake in order to supplement the rental work they do. This could potentially include additional services on behalf of the woreda, to be identified.

- Research the various ways that renters utilise the increased income gained through formal land rental agreements. Many are using it for consumption, so there's a need to better understand what type of consumption is being undertaken and whether there are potentially useful investments which could be made. For example, making rentees aware of the potential to invest in improved agricultural inputs and equipment through the accrued rental income is a potential area that LIFT's Environmental and Conversation Agriculture portfolio could be used to support. The linkages are there, they just need to be more efficiently leveraged through clustering the areas where the activities are taking place.

Annex 1: Managing data validity

Respondent fatigue and recall bias

During the review of the raw data, several data inconsistencies were identified, specifically with questions relating to the *season after* the intervention had taken place. This had the effect of introducing a negative bias to the before and after comparison for investment and income effects. This observation is reflected in several data patterns, namely:

- There are instances of respondents who, in qualitative questions, initially state they have increased investments after the SLLC-linked loan or standard land rental contract, but then do not report an actual increase in the overall cost of the income-generating activities.
- There are instances of respondents who used some inputs for cropping or other activity in the year before the loan or standard land rental agreement, but do not report any input or cost in the following year, although they do continue to be engaged in that activity. At times, zero costs for cropping inputs are described in the year after the intervention, which seems highly unlikely considering both common practices in Ethiopia, as well as behaviour described by those respondents in the year before.

To investigate the reasons for these inconsistencies, we conducted a survey with the enumerator team, probing any challenges faced in the field, specifically related to the investment and income modules. Enumerators reported that some respondents experienced fatigue due to the repetition of quantitative questions for the year before and the year after, as well as difficulty to recall actual quantities of produce, inputs use and other economic activity. Note that questions relating to the season` *before* the intervention were asked first in one batch, followed by questions relating to the season *after* the intervention. Some respondents felt that they had already told enumerators about their farming activities when responding to the year *before* questions, and then felt less motivated to respond to the same questions again for the *season after*. This resulted in some incomplete responses for the *season after* module, while the *year before* module looks complete and well administered. We therefore concluded that fatigue and recall bias led to under-reporting of quantitative data in questions relating to the *season after* the intervention was accessed.

The risk of fatigue and recall bias was anticipated in the planning stage of the survey. Mitigations included extensive training of enumerators and pre-testing of the questionnaire. During training, the field managers and enumerators, who are CSA experts in collecting agricultural survey data from rural households across Ethiopia, contributed to refine questions for reliability and validity based on their experience. During the pre-test, fatigue and recall bias did not emerge as significant issues in the survey, however the complexity and the bulkiness of the questionnaire remained an issue.

For future data collection exercises, we will address the risk of fatigue and recall bias issue more deliberately:

- the questionnaire will be simplified and the more complicated modules will be streamlined, so that questions are more explicit and direct to the use we need to make;
- more time will be allowed to review the data from the pre-test and to make any necessary changes to the questionnaire;
- complexity of the investment and income pathways will be disentangled by developing tailored modules for renters/rentees, A2F and non-beneficiary respondents.

Data corrections

To address the under-reporting and identify changes in overall investment levels over time, we conduct two types of data correction:

- For respondents who stated they increased investment, but do not report an actual increase in the investment, we replace the value of the investments in the '*season after'* to be equal to the one in the '*season before'*. This is a very conservative approach to correcting inconsistent data, since our correction does not include an actual increase, but just keeps the investment value constant (minimum common grounds to comply with the respondents' statements in elsewhere in the questionnaire). Therefore, these respondents will count as not actually having made an additional investment, but to just having invested the same amount as in the season before the intervention.
- Observations who report zero input use (input expenditure) in the year after while the respondent is actually engaged in the related economic activity report at least some input use in the year before, are deemed unrealistic and are removed from the investment analysis.

As such, we feel that our corrections are very conservative, and the impact of the EEU interventions might therefore be under-reported. We do however therefore feel comfortable to state that the effects we are reporting are the minimum effects achieved.

In addition, to reduce the impact of outliers to our analysis, we Winsorise the quantitative aggregate variables at the 2nd and 98th percentile – meaning that values above the 98th percentile are replaced with the value of the 98th percentile and values below the 2nd percentile are replaced with the value of the 2nd percentile. The highly skewed nature of the distributions, which reflect high variance in behaviour across EEU households, also suggest us to focus mainly on the median of those distributions to estimate investment and income increases.

Annex 2: EEU impact on productive investments

We measure EEU investment effects by assessing the changes in the total value of inputs used across income-generating activities. Since cropping is the main income-generating activity where EEU households invest, we also show results for this activity in isolation. Table A1 presents these results: the relevant rows including results from the observations with valid data for both the year of the loan or standard land rental contract and the previous year are 'Difference in Total cost of cropping inputs Y1- Y0' and 'Difference in Total cost of income generating activities Y1- Y0'.

Different forms of investments that may be linked to rental are investments in water and soil conservation structures such as terracing, tree planting and irrigation. However, these investments are excluded from the present analysis because their cost cannot be quantified.

Table A2-1 - Total Investments in Income-Generating Activities - values in ETB

Beneficiary status	Renter			Rentee			A2F		
Key variables	Count	Mean	Median	Count	Mean	Median	Count	Mean	Median
Total cost of cropping inputs - Y0	150	2,640	1,480	238	5,788	2,485	399	13,287	6,750
Total cost of cropping inputs - Y1	96	3,220	1,990	153	8,509	4,200	300	19,247	12,285
Total cost of income generating activities - Y0	164	2,432	1,348	240	5,876	2,600	403	21,943	7,770
Total cost of income generating activities - Y1	97	3,186	1,950	155	8,286	4,005	301	34,078	13,600
Difference in Total cost of cropping inputs Y1- Y0	96	8	-	153	1,006	400	300	3,590	785
Difference in Total cost of income generating activities Y1- Y0	97	3	-	155	705	320	301	7,054	970

Whole sample

- Among the EEU beneficiary groups, A2F households report spending on inputs for income-generating activities much more than the Rentees and Renters. Before the loan, A2F households spent 21,943 Birr on average, while rentees and renters spent only 5,876 Birr and 2,432 Birr. The large investment gap of rentees and renters against A2F reflects the higher average economic status of these households, as discussed in greater detail in Section 3.

Renters

- Aggregate cost of inputs statistics suggest that after entering in the standard land rental contracts, renters did not on average invest more on income-generating activities. The differences between the two periods of time are negligible.

Rentees

- In the first year of the standard land rental agreement, rentees invest about 1,000 Birr more on cropping inputs; the overall increase in investments, however, is 705 Birr across all income-generating activities. The difference might suggest that rentees re-allocate some of their resources to cropping from other income-generating activities after they rent in through the standard land rental agreement.
- This increase is about 9% of the pre-contract average investment level of 7,581 Birr.
- It is useful to remind that the rentees group include new rentees, who had not previously rented the parcel of land.

A2F

- In the first year of the SLLC-linked loan, A2F households invest 7,054 Birr more on average; of this increase, 3,590 Birr are allocated to cropping inputs. The pre-loan total expenditure on inputs calculated for the households with valid data in the 'year after', was 27,024 Birr. Thus, the additional

costs attributable to the loan correspond to +26% across income-generating activities and +23% for cropping inputs.

Inputs constituting the investment aggregates

Respondents reported use and expenditures of all their inputs for cropping, livestock rearing and non-farm activities. The list of inputs was designed based on the Living Standard Measurement Study questionnaire, as well as through interaction with experts at the Central Statistical Agency of Ethiopia. Table A2 below provides a complete list of inputs surveyed.

Table A2-2 - List of Inputs Constituting the Investment Aggregates

Cropping inputs	Livestock rearing inputs	Non-farm activities inputs
Natural fertilisers - manure	Animal feed - fodder	**Start-up costs:**
Natural fertilisers – compost	Animal feed - crop residue	Administrative costs (regulation, formalisation of activities, permits)
Natural fertilisers - crop residue	Animal feed - balanced concentrates	Buildings or structures
Chemical fertiliser - DAP	Animal feed - food supplements	Machinery
Chemical fertiliser - Urea	Animal feed (improved) - elephant grass	Vehicles
Chemical fertiliser - Npc	Animal feed (improved) - gaya	Rental (if multiyear)
Chemical fertiliser – Other	Animal feed (improved) - sasbaniya	Other (any other fixed investment)
Traditional seeds	Animal feed (improved) - oats	**Operating costs:**
Improved seeds	Animal feed (improved) - lablab	Wages
Pesticides	Animal feed (improved) - alfa alfa	Purchase of goods for sale
Insecticides	Animal feed (improved) - lablab	Raw material
Herbicides	Animal feed (improved) - industry by-products	Transportation
Water pumps incl. pipes (smallscale - vegetables/other cash crops)	Animal feed (improved) - other (specify___)	Administrative costs (operating/recurrent)
Water pumps incl. pipes (largescale - annual crops)	Sheds, paddocks, fences, cages	Rental
Plough	Vaccinations (against brucelosis, cbpp, limp skin disease, etc.)	Other (sum up any other cost here)
Oxen	Deworming (anthelmintics)	
Tractor	Medical treatments against parasites	
Renting tractor for planting	Veterinary medical treatments (curative treatments, dipping, artificial insemination etc.)	
Renting other machinery	Water	
Storage facility		
Labour (man-days)		

Annex 3: EEU impact on incomes

To measure the effects of investments on incomes, we focus on the financial returns of cropping inputs, since this is the most frequent type of investment among rural Ethiopian households. Rather than using the actual differences in the value of crop production overtime, which might be affected in our surveys by incomplete reporting due to fatigue, we estimate the correlation between input cost and value of production in the year before the loan or before the standard land rental contracts. In other words, we exploit variation in the use of inputs before EEU households pick up the intervention, to identify the potential income effect that households enjoy by investing more on inputs.

This relationship can be assessed through a regression of the value of production on the total cost of inputs on a per hectare basis. These two variables are defined and obtained as follows:

***Value of crop production per hectare (or output per hectare or productivity)*:** in each agricultural year, the value of production is measured by the total quantity of produce (in kilograms) multiplied by the price of the *primary* crop (per kilogram). This value is then divided by the size of plot (in hectares) on which the crop is grown. Notice that the value of the production is not the same as the value of sales of the crop, but rather the sum of the value of sales and the value of produce that is consumed directly the household. The price however is obtained by the value of sales, if any, divided by the quantity sold. Where the household has not sold any of their produce – i.e. have produced only for own consumption – we impute the unit value of the produce by taking the median unit price for that crop from other households in the sample (by region). Also as stated above, the primary crop is elected by the respondent as the main crop on which they have invested (use most inputs) or grown on the rented-in parcel. As such, the primary crop for which we have detailed output and sales data varies by respondent. The crop list for respondents, as for inputs, followed standard practice in agricultural survey in Ethiopia.

***Total cost of inputs per hectare*:** in each agricultural year, the total cost of inputs per hectare is measured by as the sum of all the expenditures of cropping inputs, divided by the total land size allocated to cropping (in hectares). As such this indicator is a measure of agricultural intensification.

In order to reduce bias from confounding factors, we control for a number of household-level characteristics – this allows us to eliminate differences in productivity that are not due to investing on inputs, but purely to other characteristics such as age of the farmer. Although this regression analysis cannot fully disentangle the impact of spending more on inputs from other causes, the results provide estimates that are suggestive of the true effect. In addition, this approach measures the average output effect of investing into different types of inputs, which range from hiring labour to purchasing fertiliser, oxen or water pumps. We use monetary variables in logarithms to account for the possibility that one additional Birr might have different returns depending on the starting level of investment (given the amount of land is fixed, inputs usually exhibit decreasing marginal returns).

Table A3-1 - Effects of Investing in Cropping on the Value of Crop Production

	Value of Crop Production per Hectare (logs)			
	estimate	st. error	t statistic	p-value
Total cost of cropping inputs per hectare (logs)	0.363	0.046	7.94	0.000
Age of the respondent	-0.001	0.004	-0.30	0.765
Female respondents	-0.135	0.174	-0.77	0.439
Size of the household	0.000	0.023	0.01	0.993
Education of the head of the household	-0.008	0.016	-0.53	0.600
Amhara (omitted)	-	-		
Oromia	0.640	0.253	2.53	0.012
SNNPR	0.453	0.242	1.87	0.062
Tigray	0.261	0.235	1.11	0.268
Renter (omitted)	-	-		
Rentee	0.060	0.139	0.43	0.665
A2F	-0.052	0.135	-0.39	0.700
_cons	6.796	0.541	12.57	0.000

From the above table, it can be concluded that the average estimated impact of 1% additional investment in cropping inputs leads to 0.363% increase in the value of crop production (95% confidence interval 0.263-0.443%)[18]. This estimate is strongly significant (p<0.001).

[18] In the unconditional regression, i.e. without any controls, the estimated coefficient is 0.388.

We translate these percentage changes to Birr increases at the median values of the cost and value of production distributions, for the rentees and A2F groups separately. Focusing on the median allows to estimate impacts that are more representative of the experience of the EEU beneficiaries, considering the distributions are highly skewed, with a few households reporting very high productivity and input intensity.

Notice that we have not found an impact on investments for renters, therefore we cannot attribute an income impact deriving purely by an increase in investments for these households. However, renters can be expected to enjoy higher incomes directly from the rental value, in case of rental agreement, or higher value of the sharecrop they receive from rentees, in case of sharecropping agreements. The survey data suggests rents increase by over 11% on average, from 4,500 Birr to 5,000 Birr, where existing rental relationships are formalised through the standard land rental contract.

Table A3-2 - Cost of Crop Inputs and Value of Production - Summary Statistics

Beneficiary status	Renter		Rentee		A2F	
Key variables	Count	Median	Count	Median	Count	Median
Cost of cropping inputs per ha	133	3,329	215	5,560	373	6,804
Value of production per ha (output per ha)	133	18,526	215	26,158	373	26,546

Table A3-2 above focuses only on households that report correctly data for costs and for produce – this explains why the number of observations is low for renters (they do not engage in cropping as much as the other households).

- For rentees: marginal return of ETB 1 of additional input costs on value of produce is ETB 1.71 (this is 0.363 * ETB 26,157 / ETB 5,560)
- For A2F: marginal return of ETB 1 of additional input costs on value of produce is ETB 1.42 (this is 0.363 * ETB 26,546 / ETB 6,804)
- The lower impact per investment for rentees is due to the fact that they invest less that A2F households to begin with; the marginal return of the investment is decreasing in the value of the investment.
- **Productivity differentials:** Another important finding of this table is that land productivity is much higher under A2F and rentees than under renters; the average productivity gap between renters and rentees is about 40%; a more intense use of inputs can only partly explain the difference. Other causes are likely to include technical knowledge, crop choice, age of the farmer, availability of own labour, vulnerability, etc. as well fertility of the land. The investment gap on a per hectare basis between renters and rentees is 67%. Therefore, we can measure the potential aggregate income change from renting out more in about 36% for each hectare exchanged. This suggests that if the standard land rental contract supports new rental agreements, its income effects do not follow only from intensified use of inputs linked to greater security in existing rental agreement, but also purely from re-allocating land to more capable farmers under new rental agreements.

The key definitions of productivity gap and investment gap are as follows:

***Productivity differential of renters v. rentees*:** this is calculated as output per hectare of renters (on their primary crop, on any land they might be farming themselves) divided by the output per hectare of rentees (on their primary crop), minus 1. Both values are taken at the median of the productivity distributions of renters and rentees respectively. A productivity gap of 40% means that rentees are 40% more productive than renters.

Output per hectare – renters: 18,526 Birr

Output per hectare – rentees: 26,158 Birr

Gap: (26,158 Birr - 18,526 Birr) / 18,526 Birr

***Investment differential of renters v. rentees*:** this is calculated in a similar way as the total cost of all cropping inputs for renters divided by the total cost of cropping inputs for rentees, minus 1. An investment gap of 63% means rentees spend 63% more on cropping inputs than renters on a per hectare basis.

Cost of cropping inputs per hectare – renters: 3,329 Birr

Cost of cropping inputs per hectare – rentees: 5,560 Birr

Gap: (5,560 Birr - 3,329 Birr) / 3,329 Birr

The final step of this analysis consists in distributing the identified return on investments over the total additional investments estimated in the previous section; this gives the additional output per household. The net income effect is finally calculated by taking the difference between additional output and additional cost (investment). We also divide this extra-income by the total cropping income (which is a proxy for total household income)[19].

The total cropping income for each household is roughly estimated by the income margin per hectare multiplied by the total land area to cropping. The income margin per hectare is the output per hectare minus the cost of cropping inputs per hectare.

Besides the overall income impact deriving from additional investment, we also estimate the increase in output per hectare. To calculate this, we apportion the additional output per household to the land size in hectare allocated to cropping. Notice that this increase materialises when the additional investments is made entirely on cropping inputs, rather than distributed across cropping, livestock rearing and non-farm activities.

Rentees

Additional output per household = ETB 1,205 (i.e. 1.71 * ETB 705)

Additional cost per household = ETB 705

Additional income = ETB 500 (ETB 1,205 – ETB 705)

Additional income in percentage of cropping income = 3.4%

Increase on output per hectare = 6.5%

A2F

Additional output per household = ETB 9,990 (i.e. 1.42 * ETB 7,054)

Additional cost per household = ETB 7,054

Additional income = ETB 2,936 (ETB 9,990 – ETB 7,054)

Additional income in percentage of cropping income = 16.6%

Increase on output per hectare = 33.6%

These are the estimates of the income increase experienced by EEU beneficiary households in the first year after the loan or the land rental agreement. The trajectory of income in the following years depends on whether the households re-invest the extra-income or consume it in the first year, or save it to finance other expenditures such as for education and health.

[19] The pre-loan and pre-contract cropping income is measured as the income margin per hectare (value of production – cost of cropping inputs per hectare) multiplied by the pre-loan / pre-contract hectarage. The median baseline hectarage to cropping for rentees and A2F in the working sample is 0.71 ha and 1.21 ha respectively. The survey did not aim to measure overall incomes (or consumption) of the households.

Annex 4: Additional tables

Table A.1 - Size of the households and age of the households' members

Renters	Males					Females				
Indicators	**Median**	**Mean**	**Count**	**Min**	**Max**	**Median**	**Mean**	**Count**	**Min**	**Max**
Size of the household	5.0	4.7	168	1.0	10.0	3.0	3.1	93	1.0	8.0
Number of adults in the household (18+)	2.0	2.4	168	1.0	7.0	1.0	1.6	93	1.0	5.0
Number of minors in the household (17-)	3.0	3.1	128	1.0	6.0	2.0	2.2	65	1.0	6.0
Age of the respondent	46.0	49.2	168	18.0	95.0	43.0	46.4	92	22.0	95.0
Age of adults in the household (avg.)	37.5	40.2	168	18.0	82.5	37.0	41.5	92	22.0	95.0
Age of minors in the household (avg.)	9.7	9.2	128	0.0	17.0	10.0	10.1	65	1.0	17.0
Age of the household (avg.)	23.4	28.6	168	10.9	82.5	25.0	29.9	92	11.3	85.0

Rentees	Males					Females				
Indicators	**Median**	**Mean**	**Count**	**Min**	**Max**	**Median**	**Mean**	**Count**	**Min**	**Max**
Size of the household	5.0	5.1	245	1.0	12.0	4.0	3.3	6	2.0	5.0
Number of adults in the household (18+)	2.0	2.4	245	1.0	6.0	2.0	2.0	6	1.0	3.0
Number of minors in the household (17-)	3.0	3.1	221	1.0	8.0	2.0	2.0	4	2.0	2.0
Age of the respondent	40.0	40.3	245	18.0	75.0	32.0	40.5	6	20.0	60.0
Age of adults in the household (avg.)	33.3	33.7	245	18.0	60.5	28.0	31.2	6	21.5	45.0
Age of minors in the household (avg.)	8.8	8.4	221	0.0	17.0	10.0	10.7	4	6.5	14.5
Age of the household (avg.)	19.7	21.1	245	12.0	60.5	21.5	25.5	6	13.7	45.0

A2F	Males					Females				
Indicators	**Median**	**Mean**	**Count**	**Min**	**Max**	**Median**	**Mean**	**Count**	**Min**	**Max**
Size of the household	5.0	5.3	332	1.0	18.0	5.0	5.1	82	1.0	15.0
Number of adults in the household (18+)	2.0	2.7	332	1.0	8.0	3.0	2.7	82	1.0	7.0
Number of minors in the household (17-)	3.0	3.1	280	1.0	10.0	3.0	3.2	64	1.0	8.0

Age of the respondent	47.0	46.9	332	23.0	77.0	45.0	44.1	82	26.0	75.0
Age of adults in the household (avg.)	37.0	38.0	332	21.5	68.0	39.0	39.0	82	22.0	78.5
Age of minors in the household (avg.)	10.0	9.9	280	0.0	17.0	11.5	10.8	64	3.7	17.0
Age of the household (avg.)	23.6	26.0	332	11.3	60.0	23.7	27.8	82	12.2	78.5

Non-beneficiary	**Males**					**Females**				
Indicators	**Median**	**Mean**	**Count**	**Min**	**Max**	**Median**	**Mean**	**Count**	**Min**	**Max**
Size of the household	5.0	5.1	366	1.0	10.0	3.0	3.0	90	1.0	7.0
Number of adults in the household (18+)	2.0	2.6	366	1.0	9.0	2.0	1.9	90	1.0	5.0
Number of minors in the household (17-)	3.0	2.8	326	1.0	8.0	2.0	1.7	56	1.0	5.0
Age of the respondent	45.0	46.6	363	1.0	83.0	50.0	49.6	90	25.0	90.0
Age of adults in the household (avg.)	35.0	37.5	366	20.0	75.0	39.5	42.9	90	26.0	90.0
Age of minors in the household (avg.)	8.8	8.8	326	0.0	17.0	11.5	10.7	56	3.0	16.0
Age of the household (avg.)	22.5	24.7	366	11.0	75.0	29.5	34.0	90	13.0	90.0

Table A.2 - Washington criteria disaggregated by disability type, beneficiary type and gender

Type of disability	**Renters**		**Rentees**		**A2F**		**Non-beneficiary**	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**
HH with member with any disability	25%	17%	6%	0%	12%	18%	13%	20%
HH with member with difficulty seeing	18%	12%	3%	0%	6%	8%	7%	13%
HH with member with difficulty hearing	8%	5%	2%	0%	3%	4%	4%	2%
HH with member with difficulty climbing steps	2%	3%	1%	0%	1%	0%	1%	2%
HH with member with difficulty remembering or concentrating	1%	1%	0%	0%	1%	3%	1%	3%
HH with member with difficulty in self-care tasks	0%	0%	0%	0%	0%	0%	0%	0%
HH with member with more than one disability	1%	1%	0%	0%	2%	3%	1%	2%

Table A2 - Reading and writing skills of households heads

Household Head Literacy Skills	Renters		Rentees		A2F		Non-Beneficiary	
	Males	Females	Males	Females	Males	Females	Males	Females
HH head can read in a language	6.0%	0.6%	9.2%		9.9%	3.7%	6.2%	
HH head can write in a language	1.1%		0.7%		0.3%		0.6%	
HH head can read and write in a language	38.4%	16.7%	57.2%	25.8%	57.7%	18.0%	39.6%	6.6%
HH head cannot read nor write	54.6%	82.7%	32.8%	74.2%	32.1%	78.3%	53.6%	93.4%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Table A3 - Highest education level attained by adult household members

	Renters		Rentees		A2F		Non-Beneficiary	
Education level	**Males**	**Females**	**Males**	**Females**	**Males**	**Females**	**Males**	**Females**
Pre - school	1%	0%	0%	0%	0%	0%	1%	0%
First Cycle Primary (G1 - G4)	11%	7%	13%	0%	9%	2%	8%	2%
Second Cycle Primary (G5 - G8)	18%	12%	21%	0%	23%	14%	16%	12%
High School (G9 - G10 incl. old high school)	12%	15%	19%	42%	20%	15%	14%	15%
Preparatory School (1st and 2nd year Prep)	2%	0%	0%	9%	3%	3%	2%	2%
TVET (10+1 - 10+4)	1%	2%	3%	0%	3%	5%	2%	3%
Any tertiary	1%	0%	1%	0%	1%	1%	1%	1%
Non formal or adult education	3%	3%	2%	0%	2%	0%	3%	0%
Traditional (Madras, religious etc.)	1%	1%	1%	0%	3%	3%	3%	1%
No traditional or formal education	49%	59%	41%	49%	36%	55%	51%	63%
Don’t know / cannot say	0%	0%	0%	0%	0%	0%	0%	0%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Total # of adult HH members	**401**	**152**	**585**	**12**	**893**	**218**	**946**	**169**

Table A4 - Number of parcels held directly, rented or sharecropped

Renters	Males					Females				
Indicators	**Median**	**Mean**	**Count**	**Min**	**Max**	**Median**	**Mean**	**Count**	**Min**	**Max**
All parcels held or accessed by the HH	2.00	2.67	168	1.00	10.00	3.00	2.69	93	1.00	7.00
Number of parcels held and used directly	1.00	1.49	168	0.00	6.00	1.00	1.09	93	0.00	7.00
Number of parcels rented or sharecropped out	1.00	1.13	168	0.00	5.00	1.00	1.57	93	0.00	6.00
Number of parcels rented or sharecropped in	0.00	0.04	168	0.00	1.00	0.00	0.00	93	0.00	0.00

Rentees	Males					Females				
Indicators	**Median**	**Mean**	**Count**	**Min**	**Max**	**Median**	**Mean**	**Count**	**Min**	**Max**
All parcels held or accessed by the HH	3.00	3.07	245	1.00	9.00	3.00	2.87	6	1.00	5.00
Number of parcels held and used directly	2.00	1.83	245	0.00	8.00	2.00	1.87	6	0.00	4.00
Number of parcels rented or sharecropped out	0.00	0.01	245	0.00	1.00	0.00	0.00	6	0.00	0.00
Number of parcels rented or sharecropped in	1.00	1.18	245	0.00	5.00	1.00	0.82	6	0.00	1.00

A2F	Males					Females				
Indicators	**Median**	**Mean**	**Count**	**Min**	**Max**	**Median**	**Mean**	**Count**	**Min**	**Max**
All parcels held or accessed by the HH	3.00	4.09	332	1.00	13.00	3.00	3.17	82	1.00	12.00
Number of parcels held and used directly	3.00	3.64	332	0.00	13.00	2.00	2.79	82	0.00	12.00
Number of parcels rented or sharecropped out	0.00	0.05	332	0.00	3.00	0.00	0.19	82	0.00	3.00
Number of parcels rented or sharecropped in	0.00	0.41	332	0.00	7.00	0.00	0.19	82	0.00	3.00

Non-beneficiary	Males					Females				
Indicators	**Median**	**Mean**	**Count**	**Min**	**Max**	**Median**	**Mean**	**Count**	**Min**	**Max**
All parcels held or accessed by the HH	3.00	3.03	366	1.00	12.00	3.00	2.73	90	1.00	8.00
Number of parcels held and used directly	2.00	2.59	366	0.00	12.00	2.00	1.95	90	0.00	8.00
Number of parcels rented or sharecropped out	0.00	0.11	366	0.00	5.00	0.00	0.71	90	0.00	6.00

Number of parcels rented or sharecropped in	0.00	0.33	366	0.00	4.00	0.00	0.06	90	0.00	3.00

Table A5 - Economic Activities

	Renters		Rentees		A2F		Non-Beneficiary	
Economic activities	**Males**	**Females**	**Males**	**Females**	**Males**	**Females**	**Males**	**Females**
Year Before - Y0 indicators								
Y0 - Any Cropping	81%	74%	93%	84%	97%	93%		
Y0 - # of crops grown	1.46	1.40	1.58	2.02	2.51	1.83		
Y0 - Any Livestock	53%	40%	75%	76%	56%	21%		
Y0 - # of livestocks types	1.55	1.34	2.01	1.66	3.02	2.87		
Y0 - Any livestocks by-products	8%	8%	15%		23%	12%		
Y0 - Any Non-farming	11%	14%	10%		9%	6%		
Y0 - # of Non-farming	1.04	1.04	1.00		1.05	1.00		
Year After - Y1 indicators								
Y1 - Any Cropping	65%	58%	85%	34%	95%	91%	99%	93%
Y1 - # of crops grown	1.43	1.45	1.49	2.05	2.34	1.85	2.31	2.05
Y1 - Any Livestock	40%	33%	67%	76%	60%	27%	66%	35%
Y1 - # of livestocks types	1.35	1.30	1.45	1.23	2.14	2.10	2.77	2.30
Y1 - Any Non-farming	11%	14%	10%	0%	9%	6%	8%	11%
Y1 - # of Non-farming	1.18	1.07	1.04		1.03	1.15	1.23	1.14

Table A7 - Vulnerable households

Vulnerability Type	Renters		Rentees		A2F		Non-Beneficiary	
	Males	**Females**	**Males**	**Females**	**Males**	**Females**	**Males**	**Females**
Share of HHs with an elder (>=65 years old)	23%	17%	2%	0%	6%	1%	14%	17%
Share of HHs with an orphan or abandoned minor	3%	16%	1%	8%	1%	9%	2%	11%
Share of HHs with a disabled person	25%	17%	6%	0%	12%	18%	13%	20%
Share of HHs with an ill person	11%	16%	6%	0%	5%	16%	12%	11%

Share of HHs with at least one person who is elder, orphan, disabled and/or ill	38%	47%	13%	8%	19%	33%	28%	42%

Table A8 - Investments in Productive Activities (costs of inputs in Birr)

Beneficiary status	Renter			Rentee			A2F		
Key variables	**Count**	**Mean**	**Median**	**Count**	**Mean**	**Median**	**Count**	**Mean**	**Median**
Total cost of cropping inputs - Y0	150	2,640	1,480	238	5,788	2,485	399	13,287	6,750
Total cost of cropping inputs - Y1	96	3,220	1,990	153	8,509	4,200	300	19,247	12,285
Total cost of income generating activities - Y0	164	2,432	1,348	240	5,876	2,600	403	21,943	7,770
Total cost of income generating activities - Y1	97	3,186	1,950	155	8,286	4,005	301	34,078	13,600
Difference in Total cost of cropping inputs Y1- Y0	96	8	-	153	1,006	400	300	3,590	785
Difference in Total cost of income generating activities Y1- Y0	97	3	-	155	705	320	301	7,054	970

Table A9 – Perceptions of risks relating to security of tenure and disputes for beneficiaries and non-beneficiaries

Role	Non-beneficiary Renter					
Risk	Losing land to rentee					
Scenario	Renting out to relative or friend		Renting out to non-relative/non-friend		Renting out for 3 years or more	
Stage	Prior to SLLC	Following SLLC	Prior to SLLC	Following SLLC	Prior to SLLC	Following SLLC
Extremely high	1%	1%	13%	1%	12%	5%
Very high	17%	6%	12%	4%	7%	6%
Somewhat high	7%	8%	4%	9%	12%	14%

EEU Renter								
Losing land to rentee								
Renting out to relative or friend			Renting out to non-relative/non-friend			Renting out for 3 years or more		
Prior to SLLC	Following SLLC	Following signing of SLRC	Prior to SLLC	Following SLLC	Following signing of SLRC	Prior to SLLC	Following SLLC	Following signing of SLRC
11%	1%	0%	10%	0%	0%	9%	1%	3%
22%	4%	4%	20%	4%	4%	19%	10%	5%
13%	8%	4%	9%	9%	5%	10%	23%	13%

Somewhat low	49%	18%	37%	6%	20%	49%	12%	25%	16%	15%	27%	16%	15%	43%	40%
Very low	24%	38%	33%	43%	46%	26%	26%	36%	33%	24%	39%	39%	26%	22%	39%
Extremely low	2%	29%	2%	32%	2%	0%	14%	26%	43%	18%	18%	33%	20%	0%	1%
Do not know / cannot say	0%	0%	0%	4%	0%	0%	2%	0%	0%	3%	3%	3%	1%	0%	0%

Role	Non-beneficiary Renter						EEU Renter								
Risk	Having dispute with rentee						Having a dispute with rentee								
Scenario	Renting out to relative or friend		Renting out to non-relative/non-friend		Renting out for 3 years or more		Renting out to relative or friend			Renting out to non-relative/non-friend			Renting out for 3 years or more		
Stage	Prior to SLLC	Following SLLC	Prior to SLLC	Following SLLC	Prior to SLLC	Following SLLC	Prior to SLLC	Following SLLC	Following signing of SLRC	Prior to SLLC	Following SLLC	Following signing of SLRC	Prior to SLLC	Following SLLC	Following signing of SLRC
Extremely high	13%	4%	1%	1%	1%	1%	8%	0%	1%	10%	0%	0%	10%	2%	0%
Very high	5%	10%	10%	8%	12%	4%	22%	1%	7%	18%	2%	4%	17%	9%	3%
Somewhat high	10%	17%	8%	6%	9%	8%	12%	8%	12%	13%	12%	3%	14%	32%	6%
Somewhat low	47%	34%	11%	8%	17%	12%	14%	24%	41%	17%	20%	18%	15%	37%	12%
Very low	23%	34%	48%	35%	26%	40%	25%	44%	38%	25%	44%	39%	29%	18%	41%
Extremely low	2%	1%	18%	39%	32%	32%	18%	21%	0%	14%	19%	33%	13%	2%	35%
Do not know / cannot say	0%	0%	3%	3%	2%	2%	0%	0%	0%	2%	3%	3%	2%	0%	3%

Role	Non-beneficiary Rentee					
Risk	Having a dispute with renter					
Scenario	Renting out to relative or friend		Renting out to non-relative/non-friend		Renting out for 3 years or more	
Stage	Prior to SLLC	Following SLLC	Prior to SLLC	Following SLLC	Prior to SLLC	Following SLLC
Extremely high	7%	1%	7%	2%	2%	2%
Very high	8%	3%	12%	3%	11%	11%
Somewhat high	6%	17%	10%	15%	5%	17%
Somewhat low	16%	15%	30%	13%	21%	38%
Very low	39%	36%	40%	39%	32%	23%
Extremely low	23%	27%	1%	27%	22%	10%
Do not know / cannot say	1%	1%	0%	0%	7%	0%

EEU Rentee								
Having a dispute with renter								
Renting out to relative or friend			Renting out to non-relative/non-friend			Renting out for 3 years or more		
Prior to SLLC	Following SLLC	Following signing of SLRC	Prior to SLLC	Following SLLC	Following signing of SLRC	Prior to SLLC	Following SLLC	Following signing of SLRC
14%	1%	2%	10%	3%	3%	9%	0%	1%
22%	3%	4%	21%	9%	4%	21%	7%	4%
11%	10%	15%	12%	21%	11%	12%	6%	8%
14%	27%	40%	14%	42%	39%	15%	26%	10%
22%	33%	38%	24%	24%	43%	23%	40%	41%
15%	24%	0%	18%	1%	0%	16%	17%	33%
2%	1%	0%	1%	0%	0%	4%	3%	3%

The most outstanding findings are as follows:

In terms of groups differences, prior to SLLC, EEU beneficiaries perceived greater risks from renting than non-beneficiaries. Prior to SLLC, about 40% of EEU beneficiaries perceive high levels of risk across risk types and scenarios, while 20 to 30% of non-beneficiaries felt insecure by the same measure. This finding holds for both renters and rentees groups. Such finding confirms what we appropriately identified the actual frequency of disputes.

Among non-beneficiaries, the introduction of SLLC appears to have substantially reduced the perceived risks associated to renting. The distribution of the ratings shifts from high to low risk following SLLC. For example, 29% of non-beneficiary renter rated as ‘extremely low’ the risk of losing land to a rentee who is a friend or family before SLLC, but this proportion increased to 2% following SLLC.

EEU beneficiaries experience lower perceived risks with the introduction of SLLCs. However, once these households enter into a standard land rental contract, their risk ratings fall even further.

Risk ratings vary substantially by type of rental activity. Specifically, renting in or out for over 3 years appears as the riskiest of the three scenarios provided. For example, among non-beneficiaries, renting to relative or friends, or to other household members is perceived as 'extremely low' by about 30% of renters after SLLC, but none of them actually rent out their land for more than 3 years to these groups.

Annex A10 – Reasons to rent out land by first-time renter and existing renter status

Reasons to rent out land	First-Time Renters (pct.)	Existing Renters (pct.)
Need for cash	44%	59%
Unable to farm the land (lack of manpower)	22%	34%
Unable to farm the land (lack of oxen/inputs)	32%	30%
Land not productive	3%	1%
More profitable than farming it	8%	2%
Pressure from family member(s)	6%	1%
Pressure from non-family member(s)	1%	0%
Dispute with neighbour(s)	0%	0%
Too far away from homestead	5%	3%
Moved to new area	2%	0%
To help family member(s)	18%	7%
To help non-family member(s)	1%	0%
To gain access to irrigation scheme	0%	0%
Exchange for other valuable good or service	0%	1%
To get access to farming resources	6%	3%
Hiring labourers to be able to farm on own a problem	3%	10%
To take or continue with off-farm job	0%	0%
Others	9%	4%

Annex A11 – Changes in Land Area Rented Before and After the SLRC

1) Renting Out

Land Area in Hectares						
After SLRC (Y1)	**Existing Renters**			**First-Time Renters**		
Indicators	**Count**	**Mean**	**Median**	**Count**	**Mean**	**Median**
Land holding area	179	0.90	0.73	82	1.06	0.73
Land area rented out or sharecropped out	179	0.57	0.40	82	0.47	0.40
Land area rented out	179	0.33	0.18	82	0.27	0.18
Land area sharecropped out	179	0.25	0.00	82	0.20	0.00

Before SLRC (Y0)	**Existing Renters**			**First-Time Renters**		
Indicators	**Count**	**Mean**	**Median**	**Count**	**Mean**	**Median**
Land holding area	179	0.90	0.73	82	1.06	1.06
Land area rented out or sharecropped out	179	0.55	0.40	82	0.00	0.00
Land area rented out	179	0.32	0.18	82	0.00	0.00
Land area sharecropped out	179	0.23	0.00	82	0.00	0.00

Land Area in Percent of Total Land Holding area						
After SLRC (Y1)	**Existing Renters**			**First-Time Renters**		
Indicators	**Count**	**Mean**	**Median**	**Count**	**Mean**	**Median**
Land area rented out or sharecropped out	179	68%	67%	82	55%	50%
Land area rented out	179	39%	33%	82	31%	18%
Land area sharecropped out	179	29%	0%	82	23%	0%

Before SLRC (Y0)	Existing Renters			First-Time Renters		
Indicators	Count	Mean	Median	Count	Mean	Median
Land area rented out or sharecropped out	179	66%	64%	82	0%	0%
Land area rented out	179	39%	33%	82	0%	0%
Land area sharecropped out	179	27%	0%	82	0%	0%

2) Renting In

Land Area in Hectares						
After SLRC (Y1)	Existing Rentees			First-Time Rentees		
Indicators	Count	Mean	Median	Count	Mean	Median
Land holding area	159	1.06	0.74	92	1.01	0.74
Land area rented in or sharecropped in	159	0.50	0.37	92	0.35	0.37
Land area rented in	159	0.37	0.20	92	0.24	0.18
Land area sharecropped in	159	0.14	0.00	92	0.12	0.00

Before SLRC (Y0)	Existing Rentees			First-Time Rentees		
Indicators	Count	Mean	Median	Count	Mean	Median
Land holding area	159	1.06	0.74	92	1.01	0.74
Land area rented in or sharecropped in	159	0.47	0.37	92	0.00	0.00
Land area rented in	159	0.30	0.18	92	0.00	0.00
Land area sharecropped in	159	0.18	0.00	92	0.00	0.00

Land Area in Percent of Total Land Holding area						
After SLRC (Y1)	Existing Rentees			First-Time Rentees		

Indicators	Count	Mean	Median	Count	Mean	Median
Land area rented in or sharecropped in	159	54%	50%	92	45%	38%
Land area rented in	159	39%	33%	92	32%	25%
Land area sharecropped in	159	17%	0%	92	15%	0%

Before SLRC (Y0)	Existing Rentees			First-Time Rentees		
Indicators	Count	Mean	Median	Count	Mean	Median
Land area rented in or sharecropped in	159	52%	50%	92	0%	0%
Land area rented in	159	34%	20%	92	0%	0%
Land area sharecropped in	159	19%	0%	92	0%	0%

Annex 5: Wealth indices

Simple Poverty Scorecard (SPC): The 'probability of poverty' as measured by the Simple Poverty Scorecard (SPC), a parsimonious tool using eight indicators based on the Ethiopia's 2011 Welfare Monitoring Survey to estimate the likelihood that a household has consumption below a given poverty line. Poverty ratios are calculated by household count (see Table A6a below).

The *extreme* poverty ratio, i.e. defined against the international $1.90 a-day poverty line, ranges across groups between 21.5% among female non-beneficiary to 31.9% among female A2F. In the male A2F group, 26.4% are extreme poor. Among renters, 28.4% of males and 26.5% of females are extreme poor. Among rentees, 28.1% are extreme poor.

Using the *absolute* poverty ratio, i.e. defined against the national Ethiopian poverty line, offers similar ratios overall and same relative ranking of the groups. As the national poverty line is slightly lower than the international poverty line, the poverty ratios are also lower. For example, under this line, 25.5% of non-male beneficiaries are poor against 30.1% under the international poverty line.

The food line implies looking at households who cannot afford to acquire enough food for adequate nutrition—in Ethiopia this is the cost of 2,200 Calories per person per day. By this lower line, a very low proportion of households in EEU and non-beneficiary groups are poor. Specifically, 2.6% of male non-beneficiaries and 1.4% of female non-beneficiaries are food poor. Within the EEU groups, female A2F have the highest food poverty ratio with 3.0%.

Household poverty perception: A summary of household self-reported perception of their economic status and recall of episodes of food scarcity in the past year (see Table A6c below).

Across the four groups, the relative majority of households report being 'able to meet basic needs.' In the non-beneficiary population, 80% of men and 59% of women describe their economic status in this way. This level is the second in a 5-levels range where the extremes are 'unable to meet basic needs without charity' at the lower end and 'plenty of disposable income' at the higher end.

Renters identify with the lowest economic status: 42% of female renters and 17% of male renters report being unable to meet basic needs. In the rentees and A2F groups, about 1 in 10 beneficiaries also report being in the lowest status group. By contrast, in the non-beneficiary group 6% of males and 26% of females are in this group.

The relative self-reported economic status of renters also reflects on the recall of situations where the household did not have sufficient food to feed all household members in the past year. These episodes of food scarcity were experienced by about 10% of renters, and by 2-5% of the other households (including non-beneficiaries).

Wealth index based on assets: A wealth index aggregating data on the ownership of 32 household or business assets. Each asset is weighted from 1 to 5 according to their relative value, as estimated through online searches and qualitative observations of the EEU Addis team (see Table A6d below for a list of assets that were used and how they were scored). We further use cluster analysis to identify four wealth groups having a similar wealth score[20] (see Table A6b below for summary results).

A2F beneficiaries are on average wealthier than other groups: The relatively wealthier group is the one of A2F beneficiaries, particularly male respondents. Among these, 14.3% come from the high wealth group, and 41% from the middle-high wealth group. The next wealthier group is the one of male rentees: 4.7% of them come from the high wealth group and 30% from the middle-high wealth group.

Renters are the least wealthy group: By contrast, the EEU renters stand out as the least wealthy population: 80% of females and 55% of males are in the low wealth group. Only 7% and 14% of male and female renters respectively come from one of the high or middle-high wealth group. Renters also have an asset wealth

[20] An average-linkage clustering approach is used to identify the four wealth groups.

deficit against non-beneficiaries as well, although by a fairly low margin: among non-beneficiaries, 72% of females and 44% of males come from the low wealth group.

Women are on average less wealthy than men: Women's sub-groups within EEU renters and rentee, A2F and non-beneficiaries are significantly less wealthy than their men counterparts. On average, the proportion of women from the low wealth group is about 25 percentage points higher than men.

Table A6 a - Poverty Ratios by Household Count

	Renters		Rentees		A2F		Non-Beneficiary	
Poverty line	**Males**	**Females**	**Males**	**Females**	**Males**	**Females**	**Males**	**Females**
International poverty line ($1.90 a-day)	28.4%	26.5%	28.1%	25.3%	26.4%	31.9%	30.1%	21.5%
International poverty line ($3.10 a-day)	66.2%	64.8%	66.8%	60.4%	65.3%	71.4%	69.8%	59.4%
National poverty line	24.1%	22.7%	23.6%	21.4%	22.1%	27.1%	25.5%	18.1%
Food poverty line	2.5%	2.2%	2.3%	2.0%	2.0%	3.0%	2.6%	1.4%

Table A6 b - Wealth Groups

	Renters		Rentees		A2F		Non-Beneficiary	
Wealth group	**Males**	**Females**	**Males**	**Females**	**Males**	**Females**	**Males**	**Females**
Low wealth group (score 1-9)	54.6%	79.9%	34.3%	40.6%	19.2%	45.4%	43.9%	72.5%
Low middle wealth group (score 10-13)	31.1%	12.4%	31.3%	41.6%	25.4%	29.5%	35.8%	11.4%
Middle high wealth group (score 14-27)	14.3%	5.5%	29.7%	17.8%	41.1%	22.0%	18.2%	14.0%
High wealth group (score 27+)	0.0%	2.2%	4.7%	0.0%	14.3%	3.1%	2.1%	2.1%

Table A6 c - Economic status, food scarcity and hunger

Economic status	Renters		Rentees		A2F		Non-Beneficiary	
	Males	Females	Males	Females	Males	Females	Males	Females
Unable to meet basic needs without charity	17%	42%	11%		10%	10%	6%	26%
Able to meet basic needs	71%	44%	76%	100%	70%	76%	80%	59%
Able to meet basic needs with some non-essential goods	10%	13%	12%		15%	11%	12%	12%
Able to purchase most non-essential goods	2%	2%	1%		5%	3%	2%	3%
Plenty of disposable income			0.2%					
Household experienced situation of not having sufficient food to feed all household members								
Yes	9%	10%	2%		2%	4%	4%	5%
No	91%	90%	98%	100%	98%	96%	96%	95%

Table A6 d – List of assets used for the wealth index based on assets

S.N.	Assets	Ranking	Scale
1	private cars	1	5
2	motorcycles	2	5
3	refrigerators	3	4
4	sofas/sets	4	4
5	televisions	5	4
6	computers	6	4
7	carts (animal drawn) for transporting people and goods	7	4
8	sewing machines	8	3
9	wardrobes	9	3
10	shelves for storing goods	10	3
11	Smart mobile telephones	11	3
12	electric stove	12	3
13	carts (hand pushed)	13	3
14	mattresses/beds	14	3
15	bicycles	15	2
16	satellite dishes	16	2
17	wrist watches/clocks	17	2
18	handlooms (weaving)	18	2
19	Non-smart mobile telephones	19	2
20	CV/VCD/DVD/Video deck	20	2
21	pieces of gold jewellery (1gram)	21	2
22	fixed line telephones	22	2

23	ploughs	23	1
24	radios/tape recorders	24	1
25	pieces of silver jewellery (1gram)	25	1
26	axes (gejera)	26	1
27	blankets/gabi's	27	1
28	sickles (machid)	28	1
29	energy saving stoves	29	1
30	cylinder gas stove	30	1
31	pick axes (geso)	31	1
32	kerosene stove	32	1

Annex 6: list of woredas

The below table shows the list of woredas covered in the EEU 2019 impact survey.

Amhara	Oromia	SNNPR	Tigray
Hulet eju Ensie	Hitosa	Sodo	Raya Alamata
Debre Elias	Dodota	Meskan	Kilte Awulalo
Sedi	Tole	Silte	Emba Alaje
Burie Zuria	Bora	Kacha Bira	Degue Temben
Jabitehnan	Lode Hitosa		
Yilmana Densa			