



Impact evaluation of the Improvement of Land Governance in Uganda
to Increase Productivity of Small-Scale Farmers on *Mailo*-Land (ILGU)

Endline Data Collection 2023

Study Documentation

April 2025

List of Acronyms

CAPI – Computer Aided Personal Interviews

CoO – Certificate of Occupancy

GIZ – German Agency for International Development

HHID – Household Identification code

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1.0 Background

Uganda has a complex land tenure system. Four tenure systems officially recognized by the 1995 Constitution coexist: freehold, *mailo*, leasehold, and customary tenure. While undocumented customary tenure dominates in the country (UNPS 2013/2014 data estimates that 84% of parcels are held customarily), *mailo* tenure is predominant in the central and parts of the western regions. Around 10% of Uganda's land (in surface) is estimated to be held under *mailo* tenure. The 1998 Land Act recognizes the rights of *mailo* tenants (lawful occupants as well as bonafide occupants) to occupy that land in perpetuity for as long as they continue to pay the annual ground rent to the registered owner. By law, tenants by occupancy has the right to assign, sublet, pledge, sub-divide, bequeath, or create third party rights in the land. The existence of various consent requirements and rights of first refusal in the law seek to balance the rights of *mailo* tenants and owners, but which did not work in practice resulting in overlapping rights between owners and tenants.

The overlap of ownership and use rights on *mailo* land has been identified as a key impediment to investment and improved productive efficiency in Uganda's agricultural economy. Previous studies have shown that *mailo* "occupancy rights convey significantly lower incentives to invest in trees, soil conservation, and manure application than full ownership.

To address the issue of securing rights of *mailo* tenants in a way that can increase the level of investment by smallholders, access to credit and boost agricultural productivity, the German Agency for International Development (GIZ) developed a pilot program to test approaches for systematic demarcation and adjudication of *mailo* land occupied by tenants in the form of land inventories in 8 sub-counties in Mityana and Mubende districts.¹

1.1 Study Objectives

The impact evaluation of the delivery of land inventories to *mailo* land tenants will serve multiple objectives:

- a) Gain better understanding of the impacts of strengthening tenants' rights in Mityana and Mubende districts. Findings are to provide critical information necessary to understand and quantify both expected impacts and risks associated with the program. Results are to be disaggregated by gender.
- b) Identify best practices as well as potential issues in the implementation process and provide recommendations to inform the design of a subsequent national roll-out to cover *mailo* land but also similar tenure arrangements in Uganda such as Native Freeholds and Church's land.
- c) Evaluation of the complementary intervention aimed at converting land inventories into certificates of occupancy (CoO)/*mailo* title will help identify the best incentives for registration of CoO/*mailo* title as well as the benefits associated to registration vs. demarcation on key outcome variables (investment, land management, agricultural productivity).
- d) Inform potential new donors' engagement in support to the implementation of the National Land Policy's strategic objectives.

1.2 Survey Design

Baseline

A listing was undertaken to identify *Mailo* tenants who were cultivating land in the selected enumeration areas and their landlords (when these are known). The number of occupants interviewed were randomly

¹ In Mubende District, privately owned *mailo* land covers 249,000 Ha (54%), freehold grants 1,400 ha (0.3%); Kingship (Kabaka) *mailo* land 1,400 Ha (0.3%). In Mityana District, privately owned *mailo* land covers 123,400 Ha (77.0%) and Kingship *mailo* 2,200 Ha (1.4%).

drawn from the listing data stratified by tenant type (i.e., tenant-owner and pure tenant). The sample size per village was 15; 8 were allocated to tenant-owners and 7 were allocated to pure tenants. In cases where there was more than the sample size in each category, selection was done at random. However, if any group had less than the required sampling number, then all were sampled and the remaining were replaced by the other group. The baseline survey was conducted in 2017 once the listing data became available to stratify and draw the sample resulting in a total sample frame of 2,800 households. Out of the total frame, baseline data were collected for 2,485 tenant households, cultivating 3,590 parcels in 191 enumeration areas. In addition, 64 resident and non-resident Mailo landlords living in the sampled enumeration areas were interviewed.

Baseline data was collected through computer-assisted personal interviews using Survey Solutions. The Uganda Bureau of Statistics was the local data collection partner. Fieldwork started on August 23, 2017 and ended on February 1, 2018. The response rate was 91 percent.²

Endline

Endline data collection took place in 2023. Wilsken Agencies LTD, a Ugandan research firm, conducted the endline data collection. An intensive 18-day-long interviewer training workshop for 60 interviewers was conducted between July 15 and August 10, 2023. Feedback from training allowed the team to improve the instruments and further adapt them to the local context before data collection.³

Following training, a survey pre-test took place over two days beginning August 7, 2023 in four villages in Mityana District to give all team members direct experience using the survey instrument. The data collected from this pre-test also led to several minor improvements in the survey instrument.

In line with the requirements for human subject protection, the research team received approval from the Mildmay Research Ethics Committee Institutional Review Board on May 16, 2023. Verbal informed consent was received from each participant after reading a statement about the purpose of the research, the content of the survey, any risks or benefits, and the time commitment.

Tenant survey endline data collection took place from August 17 to September 30, 2023. The interviews with landlords commenced on Tuesday, September 19, 2023 and ended on October 26, 2023.

At endline, 1,593 tenant interviews were completed, representing a total attrition rate for the tenant survey of 37 percent from the baseline sample of 2,534 respondents. Attrited baseline respondents were not replaced. The primary causes of attrition were household relocation to another area and refusals. Additional details are provided in the sections below. For the landlord survey, the data collection team was able to track and interview 179 respondents, representing about one-third of the unique landlord names collected in the study area.

2.0 Survey Questionnaire – Review of Sections

The endline data collection captures three sources of data: a household questionnaire, an agriculture questionnaire, and a landlord questionnaire. The topics covered in these questionnaires include:

- Wage employment and non-market labor
- Housing conditions, water, and sanitation

² For additional information on the baseline study, reference: <https://microdata.worldbank.org/index.php/catalog/3857/related-materials>.

³ Interviewers were trained on the study and its objectives, the survey questionnaires, target respondents, survey ethics and conduct, and the practical implementation of the survey, including practice using SurveyCTO. The training contained lectures, role-playing, group exercises, and a written exam. Following the lecture portion of the training, interviewers took turns practicing the survey through mock interviews observed by the rest of the team.

- Sources of income, financial decision making, savings, credit, borrowing, and banking in the past 12 months
- Parcel management and use
- Tenure and documentation
- Conflict and perception of tenure security
- Plot management
- Crops
- Certificate of occupancy interest/value
- Purchase land
- Gender, awareness, and legal knowledge
- Credit
- Non crop farming household enterprises/activities
- Shocks and coping strategies
- Welfare and food security
- Decision making, bargaining, and social capital
- Household assets
- Animal assets
- Livelihood and assets

The endline data package contains the endline household and agriculture questionnaires. The panel identifier for merging the baseline and endline datasets at the household level is “base_HHID” (the corresponding field at baseline is “hh”). The panel identifiers for merging the baseline and endline household rosters are “base_HHID” (“hh” at baseline) and “pid” (“pid” in numeric format at baseline) using the file “B_Panel_Questions_HOUSEHOLD_ROSTER.dta” and the panel identifiers for merging baseline and endline parcels are “base_HHID” and “base_parcelid” (using the file “F_Panel_Parcel_Parcel_Management_Use.dta”) with “own_status” identifying the parcels coming from Sections ASEC2A (owned) and ADEC2B (usufruct) of the baseline survey. For questions that refer back to household members, the number after the underscore in the variable name corresponds to the “pid” (“pid” at baseline).

2.1 Household Questionnaire

Section A Baseline Household Identification

Information in this section was provided to the field teams by study team before starting data collection including the names and codes pertaining to the households surveyed during baseline data collection.

Section B Household Roster

The purpose of this section is to:

1. Identify all persons who are members of the household;
2. Provide basic demographic information such as age, sex and marital status of each household member.

The respondent for this section was mainly the household head. In the absence of the household head the next person who is acting as household head would be interviewed. It was a requirement that respondents must be a usual member of the household and should be capable of providing all the necessary information about other members of the household. Other household members also provide information or details on particular questions concerning them if present at the time of the visit.

A household was defined as a group of people who normally live and eat their meals together for at least 6 months of the 12 months preceding the interview. Therefore, the member of the household is defined on the basis of how long they have lived in the household.

Section C Wage Employment and Non-Market Labor Activities

This section covered wage employment for each household member over 10 years of age. This included wages, salary, in-kind payment in agricultural or non-agricultural activities, seasonal or not, including domestic work in the last 12 months. This section goes on to break down the activities by ISO and time spent.

Section D Housing Conditions, Water, and Sanitation

Data from this section was aimed at measuring the parcel/property ownership status and socio-economic status of household by assessing the quality of housing occupied and the tenure surrounding the property. Information was collected on the type of dwelling, tenure status, parcel size, how parcel was acquired, when parcel was acquired, parcel ownership rights, landlord or kibanja holder, parcel disputes and access to basic services (including water, electricity and sanitation).

A dwelling was defined as a building or a group of buildings in which the household lived. It could be a hut, a group of huts, a single house, a group of houses, etc.

Section E Sources of Income, Financial Decision Making, Savings, Credit, Borrowing and Banking

This section gathered information on the following:

1. Sources of income and decision making at household level.
2. Financial savings and investments.
3. Access to and utilization use of mobile money services.

Section F Parcel Management and Use

This section collects detailed information about land use, ownership, and management of a specific parcel. It includes data on parcel size, landlord details, use and cultivation history, rent and payment issues, infrastructure, and any associated challenges like erosion or irrigation.

Section G Tenure and Documentation

This section focuses on the tenure status and documentation related to land rights. It gathers information about agreements with landlords, boundary mapping, certificates of occupancy, and other land documentation, as well as insights into the understanding and management of land rights within the household.

Section H Conflict and Perception of Tenure Security

This section examines perceptions of tenure security and experiences with land-related conflicts. It gathers information on concerns about property disputes, the likelihood of losing property rights, historical and current land disputes, their resolution processes, and the impact of land mapping and conflict resolution interventions on perceptions of land security.

Section I Plot Management

This section focuses on the management and input use for plots cultivated during the first cropping season of 2023. It collects detailed information on decision-making, the use and costs of various inputs like

fertilizers and pesticides, labor—both family and hired—for different agricultural tasks, and associated expenditures. This data helps in understanding input application practices, labor dynamics, and overall management of the plots.

Section J Crops

This section gathers comprehensive data on crop cultivation during the first cropping season of 2023, including details on planting, harvesting, and utilization of each crop. It covers aspects such as crop types, planting methods, seed usage, yields, and how the crops were consumed, sold, or otherwise utilized.

Section K Certificate of Occupancy Interest/Value

This section assesses the household's interest in obtaining a Certificate of Occupancy. It explores willingness to pay for such a certificate under varying cost scenarios and reasons for not pursuing it.

Section L Purchase Land

This section investigates recent transactions involving non-agricultural land, including sales, gifts, losses, and purchases. It also explores the household's willingness to buy land with full ownership rights versus land use rights and compares the cost of acquiring land under different scenarios.

Section M Gender Perceptions, Legal Knowledge and Conflicts

This section collected information on legal knowledge, through scenario-based questions and hypothetical examples on both gender and legal knowledge specific to *mailo* land. It also covered conflict issues and conflict mitigation.

Section N Credit

This section gathers information on Potential borrowing sources for different household members.

Section O Non-Crop Farming Household Enterprise/Activities

This section collected information on the presence of non-agricultural household enterprises. It includes information on income and employment derived from non- agricultural household enterprises and identifies the household member responsible for each enterprise in terms of decision making and the allocation of income generated. It also covered the involvement of household enterprises in the credit market. The respondent for each enterprise was a member of the household most knowledgeable about the activities of the enterprise.

Section P Shocks and Coping Strategies

Shocks were defined as events that happen suddenly. Usually they have a marked beginning and end. While they last for a short time, a few days or weeks, usually their effects are felt for a longer time. It was noted that a shock can be household specific or community wide. Examples of shocks include floods, livestock disease, fire, etc. For example, petty theft of household property was not considered as a shock. This section gathered information on which shocks/ distress events affected the households in the last 12 months.

Section Q Welfare and Food Security

The purpose of this section was to collect information on vital needs and living conditions of households during the last 12 months. It provided additional information to assess household welfare. Food security was defined as the availability of food and one's access to it. Some questions regarding daily meals had a 24-hour recall period.

Section R Decision Making, Bargaining and Social Capital

This section sought to collect information on social capital that is involvement and belonging to groups such as religious, farmers, cooperatives and the respondent's frequency of involvement in the same. It also covers decision making on a number of decision items at the household.

Section S Household Assets

This section aimed at collecting data to estimate the value of household assets. It also collected information on ownership of assets.

Section T Animal Assets

This section collects information on the various types of livestock raised or owned by the household, including exotic and indigenous cattle, small animals, and rabbits. It covers aspects such as current and past ownership, purchases, sales, values, and uses of animal products like meat, milk, and dung. The section also examines labor costs related to animal husbandry and the economic contributions from these animals over specified periods.

Section U Livelihood Assets

This section focuses on the durable goods owned by the household. It collects data on various farming tools and equipment, such as hoes, ploughs, and tractors, including their quantities and estimated values. The section aims to provide a comprehensive overview of the household's agricultural assets and their financial worth.

Table 1 Organization of Household Questionnaire

File Name	Module name	Level of Analysis	Identification variable
A_BASELINE_HOUSEHOLD_IDENTIFICATION	Baseline Household Identification	Household	HHID (endline), base_HHID (baseline)
B_HOUSEHOLD_ROSTER_Household	Household Roster	Household (new members)	HHID (endline), base_HHID (baseline)
B_Endline_Questions_HOUSEHOLD_ROSTER.dta	Household Roster	Individual (panel and new members)	HHID, pid, individual_id
B_Panel_Questions_HOUSEHOLD_ROSTER.dta	Household Roster	Individual (panel and new members); includes baseline responses when available	HHID, pid, individual_id (base_HHID, pid baseline identifiers)
C_WAGE_EMPLOYMENT_AND_NON_MARKET_LABOR_ACTIVITIES	Wage Employment and Non-market Labor	Individual	HHID, pid, individual_id
D_HOUSING_CONDITIONS_WATER_SANITATION	Housing Conditions, Water, and Sanitation	Household	HHID (endline), base_HHID (baseline)

File Name	Module name	Level of Analysis	Identification variable
E_INCOME_FINANCE_SAVINGS_CREDIT_BORROWING_BANKING	Sources of Income, Financial Decision Making, Savings, Credit, Borrowing and Banking in the Past 12 Months	Household	HHID (endline), base_HHID (baseline)
F_Active_Parcel_PARCEL_MANAGEMENT_USE	Parcel Management and Use	Parcel (panel and new)	HHID, parcel_index, parcel_id
F_New_PARCEL_MANAGEMENT_USE	Parcel Management and Use	Parcel (new)	HHID, parcel_index, parcel_id
F_Panel_Parcel_PARCEL_MANAGEMENT_USE	Parcel Management and Use	Parcel (panel)	HHID, parcel_index, parcel_id (endline) base_HHID, base_parcelid with own_status (baseline)
G_TENURE_AND_DOCUMENTATION	Tenure and Documentation	Parcel (tenant tenure)	HHID, parcel_index, parcel_id
H_Parcel_Level_CONFLICT_AND_PERCEPTION_OF_TENURE_SECURITY	Conflict and Perception of Tenure Security	Parcel (tenant tenure)	HHID, parcel_index, parcel_id
H_Conflict_Level_CONFLICT_AND_PERCEPTION_OF_TENURE_SECURITY	Conflict and Perception of Tenure Security	Conflict	HHID, parcel_index, parcel_id, conflict
I_Parcel_Level_PLOT_MANAGEMENT	Plot Management	Parcel(all)	HHID, parcel_index, parcel_id
I_Labor_Level_PLOT_MANAGEMENT	Plot Management	Individual	HHID, parcel_index, parcel_id
J_Parcel_CROPS.dta	Crops	Parcel(all)	HHID, parcel_index, parcel_id
J_Crop_CROPS.dta	Crops	Crop	HHID, parcel_index, parcel_id, crop
K_CERTIFICATE_OF_OCCUPANCY_INTEREST_VALUE	Certificate of Occupancy Interest/Value	Household	HHID (endline), base_HHID (baseline)
L_PURCHASE_LAND	Purchase Land	Household	HHID (endline), base_HHID (baseline)

File Name	Module name	Level of Analysis	Identification variable
M_GENDER_AWARENESS_AND_LEGAL_KNOWLEDGE	Gender, Awareness, and Legal Knowledge	Male household heads (mhead), Wives of male household heads (wife), Female household heads (fhead), Spouses of female household heads (mspouse)	HHID (endline), base_HHID (baseline)
N_HH_CREDIT	Credit	Household	HHID (endline), base_HHID (baseline)
N_Loans_CREDIT	Credit	Loan	HHID (endline), base_HHID (baseline), index
O_HH_NON_CROP_FARMING_HOUSEHOLD_ENTERPRISES_ACTIVITIES	Non Crop Farming Household Enterprises/Activities	Household	HHID (endline), base_HHID (baseline)
O_Enterprise_NON_CROP_FARMING_HOUSEHOLD_ENTERPRISES_ACTIVITIES	Non Crop Farming Household Enterprises/Activities	Enterprise	HHID (endline), base_HHID (baseline), index
P_Household_SHOCKS_AND_COPING_STRATEGIES	Shocks and Coping Strategies	Household	HHID (endline), base_HHID (baseline)
P_Shocks_SHOCKS_AND_COPING_STRATEGIES	Shocks and Coping Strategies	Shock	HHID (endline), base_HHID (baseline), index
Q_WELFARE_AND_FOOD_SECURITY	Welfare and Food Security	Household	HHID (endline), base_HHID (baseline)
R_Engagement_DECISION_MAKING_BARGAINING_AND_SOCIAL_CAPITAL	Decision Making, Bargaining and Social Capital	Engagement (Male, Female, and Wives)	HHID (endline), base_HHID (baseline)
R_Female_Association_and_Meetings_DECISION_MAKING_BARGAINING_AND_SOCIAL_CAPITAL	Decision Making, Bargaining and Social Capital	Association and meetings (Female)	HHID (endline), base_HHID (baseline)
R_Female_Office_DECISION_MAKING_BARGAINING_AND_SOCIAL_CAPITAL	Decision Making, Bargaining and Social Capital	Office (Female)	HHID (endline), base_HHID (baseline)
R_Female_Wives_Expenditure_DECISION_MAKING_BARGAINING_AND_SOCIAL_CAPITAL	Decision Making, Bargaining and Social Capital	Expenditure (Female and Wives)	HHID (endline), base_HHID (baseline)
R_Male_Association_and_Meetings_DECISION_MAKING_BARGAINING_AND_SOCIAL_CAPITAL	Decision Making, Bargaining and Social Capital	Association and meetings (Male)	HHID (endline), base_HHID (baseline)
R_Male_Expenditure_DECISION_MAKING_BARGAINING_AND_SOCIAL_CAPITAL	Decision Making, Bargaining and Social Capital	Expenditure (Male)	HHID (endline), base_HHID (baseline)
R_Male_Office_DECISION_MAKING_BARGAINING_AND_SOCIAL_CAPITAL	Decision Making, Bargaining and Social Capital	Office (Male)	HHID (endline), base_HHID (baseline)

File Name	Module name	Level of Analysis	Identification variable
R_Wives_Association_and_Meetings_DECISION_MAKING_BARGAINING_AND_SOCIAL_CAPITAL	Decision Making, Bargaining and Social Capital	Association and meetings (Wives)	HHID (endline), base_HHID (baseline)
R_Wives_Office_DECISION_MAKING_BARGAINING_AND_SOCIAL_CAPITAL	Decision Making, Bargaining and Social Capital	Office (Wives)	HHID (endline), base_HHID (baseline)
S_HOUSEHOLD_ASSETS	Household Assets	Household	HHID (endline), base_HHID (baseline)
T_Animal_Assets	Animal Assets	Household	HHID (endline), base_HHID (baseline)
T_ANIMAL_ASSETS_Exotic	Animal Assets-Exotic	Animal	HHID (endline), base_HHID (baseline), index
T_ANIMAL_ASSETS_Ind	Animal Assets-Indigenous	Animal	HHID (endline), base_HHID (baseline), index
T_ANIMAL_ASSETS_Ex_Small	Animal Assets-Exotic Small	Animal	HHID (endline), base_HHID (baseline), index
T_ANIMAL_ASSETS_Ind_Small	Animal Assets-Indigenous Small	Animal	HHID (endline), base_HHID (baseline), index
T_ANIMAL_ASSETS_Rabbits	Animal Assets-Rabbits	Animal	HHID (endline), base_HHID (baseline), index
U_LIVELIHOOD_AND_ASSETS	Livelihood and Assets	Household	HHID (endline), base_HHID (baseline)

3.0 Training and Field Work Organization

Prior to starting data collection, field staff were trained for a period of approximately two weeks with practical sessions to introduce the concept of CAPI (Computer Assisted Personal Interviews) using survey solutions.

The field teams comprised of a driver, a supervisor, and four enumerators. Each enumerator had a tablet and each supervisor had either a tablet or a computer (laptop). All data was captured directly on tablets using SurveyCTO. The data collected was electronically sent to the research team daily.

As the survey was conducted through CAPI, the survey routing and many of the survey logic checks were automated and completed during fieldwork.

Field work started on the 15th of July 2023 and ended on the 26th of October 2023.

3.1 Response Rate

At endline, 1,593 tenant interviews were completed, representing a total attrition rate for the tenant survey of 37 percent from the baseline sample of 2,534 respondents.

3.2 Data Quality

The endline data collection effort utilized the following quality control measures: observation of interviewers by team leaders, daily quality control checks by the research team, and auditing/re-interviewing of respondents. Team leaders and quality control supervisors often accompanied interviewers and sat in for part or all of their interviews. For team leaders, this happened at least once every day for one interviewee, and the supervisors accompanied two to three enumerators each time they accompanied a team of enumerators. The selection of the interviewers to observe was informed by the results of the audits and high-frequency checks. Audits occurred on 12 percent of surveys. The audit data was compared to the original data by the research team and the number of discrepancies were recorded. If a large number of discrepancies were found, additional training was offered to the enumerator. If necessary, additional targeted audits were used to investigate unusual patterns that could indicate data falsification.

Finally, the most thorough checks were remote high-frequency checks conducted by the research team on 100 percent of all tenant surveys using SurveyCTO, the results of which the team compiled and shared with the survey firm. The high-frequency checks compared survey responses by each enumerator to search for patterns indicating data falsification or systematic errors that should be corrected, including short survey times, missing responses, a low average number of "other, specify" responses or multiple selections, and any other significant irregularities by day, geography, team, or interviewer.

4.0 Producers

The PIs for this study are Heather Huntington (University of Pennsylvania), Kate Marple-Cantrell (The Cloudburst Group), and Daniel Ali Ayalew and Thea Hilhorst from the World Bank.

This work was supported by German Agency for International Development (GIZ) and the World Bank.

5.0 Accessibility

Access Authority is the World Bank

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