

README

CREDIT CONSTRAINTS AND CAPITAL ALLOCATION IN AGRICULTURE: THEORY AND EVIDENCE FROM UGANDA

Contents

1. [Overview](#)
2. [Data Availability](#)
3. [Instructions for Replicators](#)
4. [List of Exhibits](#)
5. [Requirements](#)
6. [Code Description](#)

Overview

The code in this replication package relates to the paper “CREDIT CONSTRAINTS AND CAPITAL ALLOCATION IN AGRICULTURE: THEORY AND EVIDENCE FROM UGANDA”. This package generates all the tables and figures, starting from raw data, deidentifying the study datasets, including the cleaning and construction of indicators, as well as the analysis. The packages includes code in Stata and the replicator should expect the code to run for about 30 minutes.

Data Availability

Data for this study includes primary data from surveys and publicly available datasets.

Survey data include a census survey, a baseline survey, a willingness-to-pay elicitation survey, a within-season phone survey, a crop assessment survey, a soil testing survey, a market survey, a follow-up survey, and a post follow-up phone survey. All raw data collected is deidentified and provided. Three datasets generated by processing geocoded raw data such as village and plot location are used to calculate outcomes; for these dataset, raw data cannot be provided. For all datasets, the ID variable identifying households is `hh_code`, the ID variable identifying village is `lc1_code`, the ID variable identifying district is `district_id`.

Publicly available datasets include Nitrogen, Potash, and Phosphate application rates across selected World regions and over time downloaded from the [FAOSTAT database](#) and monthly precipitation data downloaded from the ECMWF [Climate Data Store](#). See the reference section for full database citations.

Deidentified Raw Datasets

Data Round	Survey Name	Files Location	Description
Season 1 and 2	Census	Variables Generation/Input/ACAP_S1_Census Variables Generation/Input/ACAP_S2_Census	Main dataset
Season 1 and 2	Baseline Survey	Variables Generation/Input/ACAP_S1_Baseline Variables Generation/Input/ACAP_S2_Baseline	Main dataset and rosters
Season 1 and 2	WTP Elicitation Survey	Variables Generation/Input/ACAP_S1_WTP Variables Generation/Input/ACAP_S2_WTP	Main dataset
Season 1 and 2	Within-season Phone Survey	Variables Generation/Input/ACAP_S1_PlantingPhoneSurvey Variables Generation/Input/ACAP_S1_PlantingPhoneSurvey	Main dataset
Season 1 and 2	Crop Assessment Survey	Variables Generation/Input/ACAP_S1_CropSurvey Variables Generation/Input/ACAP_S1_CropSurvey	Main dataset and rosters
Season 1 and 2	Soil Test Survey	Variables Generation/Input/ACAP_S1_SoilTest Variables Generation/Input/ACAP_S2_SoilTest	Main dataset from soil test survey
Season 1 and 2	Market Survey	Variables Generation/Input/ACAP_S1_MarketSurvey	Main dataset

		Variables Generation/Input/ ACAP_S2_MarketSurvey	
Season 1 and 2	Follow-up Survey	Variables Generation/Input/ACAP_S1_Followup Variables Generation/Input/ACAP_S2_Followup	Main dataset and rosters
Season 1 and 2	Post Follow-up Phone Survey	Variables Generation/Input/ ACAP_S1_PhoneSurvey_PostFOL Variables Generation/Input/ ACAP_S1_PhoneSurvey_PostFOL	Main dataset

Deidentified Not Raw Datasets

Files Location	Description	Why raw data cannot be shared
Variables Generation/Input/ ACAP_LC1_InverseDistanceMatrix. dta	Distance between each pair of villages included in sample	Processing includes village coordinates
Variables Generation/Input/ACAP_S1_CropS urvey_PlotID_Anonymized.dta	Assignment of IDs to plots based on plot location	Processing includes plot coordinates
External/Input/ACAP_WeatherDat a.dta	Village-level monthly precipitation using ECMWF Climate Data Store	Processing includes village coordinates

Publicly Available Datasets

Dataset	Files Location	Description
FAOSTAT	External/Input/FAOSTAT_data_en_11- 13-2025-Fertilizer	Agricultural use of nutrients by continent and year
FAOSTAT	External/Input/FAOSTAT_data_en_11- 13-2025-Land	Land area used for agricultural production by continent and year
FAOSTAT	External/Input/FAOSTAT_data_en_11- 13-2025-Yield	Maize yields by continent and year

Instructions for Replicators

1. Save data files to a folder on your computer (following the folder structure detailed below).
2. Open the ACAP_Project_Master.do and update the computer's username and paths as described in the *Set Directories* section of ACAP_Project_Master.do.
3. You can select which sections to run by editing the globals in “select sections to run” of the master do-file. There are three sections: “Variable Generations”, “External”, and “Analysis”.
 - 3.1. The section called *Variable Generations* generates the analysis datasets starting from deidentified raw data
 - 3.2. The section called *External* generates outputs from publicly available datasets
 - 3.3. The section called *Analysis* generates outputs from the analysis datasets created in *Variables Generation*
4. Make sure to run the *packages* section to install all necessary packages before running the other sections.
5. Run ACAP_Project_Master.do to replicate results.

List of Exhibits

The provided Stata code reproduces all tables and figures stated below.

Exhibit name	Code Folder	Script Name	Output Folder	Output filename
FIGURE 1: MAIZE YIELDS AND FERTILIZER ADOPTION	External/Code	ACAP_FigureFAOdata.do	External/Output	FAOdata_MaizeYield.pdf FAOdata_Nitrogen.pdf FAOdata_Phospate.pdf FAOdata_Potash.pdf
FIGURE 6: WILLINGNESS TO PAY BY LOTTERY	Analysis/Code	ACAP_FigureWTP.do	Analysis/Output/Figures	ACAP_Figure2a.pdf ACAP_Figure_Demand.pdf
FIGURE 7: MARGINAL	Analysis	ACAP_Analysis_Master.do	Analysis/Output/Figures	profitMTEraw_CASFOL_profit_2_w.pdf

TREATMENT EFFECTS				profitMTEbins_CASFOL_profit_2_w.pdf
FIGURE 8: AVERAGE RETURNS OF INDUCED BUYERS	Analysis	ACAP_Analysis_Master.do	Analysis/Output/Figures	profitCATERaw.pdf
FIGURE 9: OPTIMAL POLICY MIX	Analysis/Code	ACAP_Figure_OptimalPolicy.do	Analysis/Output/Figures	ACAP_FigureOptimalPolicy_OC.pdf
FIGURE C.1: MAIZE YIELD AND FARM SIZE	Analysis/Code	ACAP_FigureFarmSizeYields.do	Analysis/Output/Figures	ACAP_AppendixFigureSizeYield.pdf
FIGURE D.1: REGIONAL WEATHER PATTERNS	External/Code	ACAP_FigureWeather.do	External/Output	ACAP_WeatherPatterns.pdf
FIGURE D.2: WTP ELICITATION AND MAIZE PLANTING	Analysis/Code	ACAP_FigurePlantingWTP	Analysis/Output/Figures	ACAP_AppendixFigurePlanting.pdf
TABLE 1: AVERAGE EFFECTS ON PROFIT MEASURES BY TREATMENT CELL	Analysis	ACAP_Analysis_Master.do	Analysis/Output/Tables	ATEtableProfits.tex
TABLE 2: MARGINAL TREATMENT EFFECTS ON PROFITS	Analysis	ACAP_Analysis_Master.do	Analysis/Output/Tables	ACAPMTEtable.tex
TABLE 3: EFFECTS ON LONG-RUN ADOPTION OF FERTILIZER	Analysis	ACAP_Analysis_Master.do	Analysis/Output/Tables	ATEtableLongrun.tex

TABLE A.1: BASELINE BALANCE: YIELDS AND REVENUES	Analysis	ACAP_Analysis_Master.do	Analysis/O utput/Tabl es	ATEtableBalanceA.tex
TABLE A.2: BASELINE BALANCE: INPUT EXPENDITURE AND USAGE	Analysis	ACAP_Analysis_Master.do	Analysis/O utput/Tabl es	ATEtableBalanceB.tex
TABLE A.3: BASELINE BALANCE: SOIL QUALITY	Analysis	ACAP_Analysis_Master.do	Analysis/O utput/Tabl es	ATEtableBalanceC.tex
TABLE A.4: BASELINE BALANCE: LABOR	Analysis	ACAP_Analysis_Master.do	Analysis/O utput/Tabl es	ATEtableBalanceD.tex ATEtableBalanceE.tex
TABLE A.5: ATTRITION	Analysis	ACAP_Analysis_Master.do	Analysis/O utput/Tabl es	ATEtableAttrition.tex
TABLE B.1: AVERAGE EFFECTS ON PROFIT MEASURES BY TREATMENT CELL: EXCLUDING FAMILY LABOR	Analysis	ACAP_Analysis_Master.do	Analysis/O utput/Tabl es	ATEtableProfitsNoHHL.tex
TABLE B.2: MARGINAL TREATMENT EFFECTS ON PROFITS: EXCLUDING FAMILY LABOUR	Analysis	ACAP_Analysis_Master.do	Analysis/O utput/Tabl es	ACAPMTEtableNoHHL.tex
TABLE B.3: AVERAGE EFFECTS ON PROFIT	Analysis	ACAP_Analysis_Master.do	Analysis/O utput/Tabl es	ATEtableProfitsNotwin.tex

MEASURES BY TREATMENT CELL: NOT WINSORIZED				
TABLE B.4: MARGINAL TREATMENT EFFECTS ON PROFITS: NOT WINSORIZED	Analysis	ACAP_Analysis_Master.do	Analysis/O utput/Tabl es	ACAPMTEtablenotwin.tex
TABLE B.5: AVERAGE EFFECTS ON PROFIT MEASURES BY TREATMENT CELL: NOT TRIMMED	Analysis	ACAP_Analysis_Master.do	Analysis/O utput/Tabl es	ATEtableProfitsPreTrim.tex
TABLE B.6: MARGINAL TREATMENT EFFECTS ON PROFITS: NOT TRIMMED	Analysis	ACAP_Analysis_Master.do	Analysis/O utput/Tabl es	ACAPMTEtablePreTrim.tex
TABLE C.1: EFFECTS ON PLOT AREA	Analysis	ACAP_Analysis_Master.do	Analysis/O utput/Tabl es	ATEtablePlantedArea.tex
TABLE C.2: EFFECTS ON CONSUMPTION	Analysis	ACAP_Analysis_Master.do	Analysis/O utput/Tabl es	ATEtableConsumption.tex
TABLE C.3: EFFECTS ON SEED AND FERTILIZER	Analysis	ACAP_Analysis_Master.do	Analysis/O utput/Tabl es	ATEtableSeedsFertilizer.tex
TABLE C.4: AVERAGE EFFECTS ON LABOR COSTS	Analysis	ACAP_Analysis_Master.do	Analysis/O utput/Tabl es	ATEtableLabourcostsHHFOL.tex ATEtableLabourcostsOutFOL.tex

TABLE C.5: AVERAGE EFFECTS: QUADRANTS	Analysis	ACAP_Analysis_Master.do	Analysis/O utput/Tab les	ATEtableFertilizerEffectsQuadran t.tex
TABLE C.6: GROSS RETURN MINUS WILLINGNESS TO PAY	Analysis	ACAP_Analysis_Master.do	Analysis/O utput/Tab les	ATEtableTheory.tex

Requirements

The paper exhibits were generated with Stata version 18. Required packages are included in the main reproducibility do.

Software Requirements

- **Stata version 18.0**
 - coefplot
 - schemepack
 - mhtexp
 - mhtreg
 - binscatter
 - moremata
 - parmest
 - grc1leg2
 - ritest
 - unique
 - renvars
 - reshape8
 - fre
 - gtools

- copydesc

Memory and Runtime and Storage Requirements

The replicator should expect the code to run for about 30 minutes. Approximate storage space needed: 1.6 GB.

Code Description

This reproducibility package contains the code necessary to replicate the results shown in the paper. To do so, follow the instructions below:

1. ****Use the ACAP_Project_Master.do to replicate the results****. It is only necessary to add your computer's username and path to adjust the default path and set up the working environment to run the replication files. You can select which sections to run by editing the globals. Also, each section has its own master dofile, which can be run individually.
2. Do-files in *Dofiles/External* generate the figures from secondary data. Outputs will be saved in the *External/Output* folder.
3. Do-files in *Analysis* and *Dofiles/Analysis* generate the tables and figures from primary data. Outputs will be saved in the *Analysis/Output* folder.

References

Hersbach, H., Bell, B., Berrisford, P., Biavati, G., Horányi, A., Muñoz Sabater, J., Nicolas, J., Peubey, C., Radu, R., Rozum, I., Schepers, D., Simmons, A., Soci, C., Dee, D., Thépaut, J-N. (2023): ERA5 hourly data on single levels from 1940 to present. Copernicus Climate Change Service (C3S) Climate Data Store (CDS), DOI: [10.24381/cds.adbb2d47](https://doi.org/10.24381/cds.adbb2d47) (Accessed on 08-03-2021).¹

FAO. 2023. FAOSTAT: Crops and livestock products. (Accessed on 13 November 2025). <https://www.fao.org/faostat/en/#data>. Licence: CC-BY-4.0.

FAO. 2023. FAOSTAT: Land Use. (Accessed on 13 November 2025). <https://www.fao.org/faostat/en/#data>. Licence: CC-BY-4.0.

FAO. 2023. FAOSTAT: Fertilizers by Nutrient. (Accessed on 13 November 2025). <https://www.fao.org/faostat/en/#data>. Licence: CC-BY-4.0.

¹ Generated using or contains modified Copernicus Climate Change Service information . Neither the European Commission nor ECMWF is responsible for any use that may be made of the Copernicus information or data it contains.