# Rwanda - Impact, Maintenance, and Sustainability of Irrigation Impact Evaluation Survey 2015-2018, Baseline, First, Second, Third Follow-up

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# Overview

## Identification

ID NUMBER
RWA_2015-2018_LWHIE_v01_EN_M_V01_A_OCS

## Overview

ABSTRACT
The irrigation study context consists of 4 LWH hillside irrigation schemes and their surrounding terraced land across 5 districts of Rwanda. We use Spatial Regression Discontinuity analysis to capture the effects of irrigation. In the first 3 irrigation schemes (in Karongi and Nyanza), we use randomized control trials to document the impact of complementary interventions that have the potential to increase the returns and sustainability of irrigation. The complementary interventions included in the study are 1) providing demonstration minikits to a random subset of farmers, 2) providing irrigation subsidies to randomly selected farmers, and 3) empowering monitors in a randomly selected number of water user groups to keep operations and maintenance checklist and irrigation schedule. The baseline and 3 follow up surveys for the first 3 schemes (in Karongi and Nyanza) and the baseline and 1 follow up survey for the 4th site (Rwamagana) are documented here.

KIND OF DATA
Sample survey data [ssd]

UNITS OF ANALYSIS
Households, Plots of land

## Scope

NOTES
The surveys covered the following topics:

- Household geographic area identification

- Household roster

- Parcel and plot roster

- Crop production

- Irrigation

- Labour on the household farm

- Farm inputs

- Extension

- Housing

- Farmer groups

- Social network

- Income and expenditure

- Animals and assets

- Rural finance

- Credit

- Shocks

- Future expectations

- Food security

TOPICS

| Topic | Vocabulary | URI |
|---|---|---|
| Agriculture & Rural Development | FAO | |
| Food (production, crisis) | FAO | |
| Land (policy, resource management) | FAO | |

## Coverage

GEOGRAPHIC COVERAGE

The study covers 5 districts in Rwanda.

- Karongi & Nyanza schemes: Districts of Karongi, Nyanza, Rutsiro, and Huye;

- Rwamagana scheme: District of Rwamagana

## Producers and Sponsors

PRIMARY INVESTIGATOR(S)

| Name | Affiliation |
|---|---|
| Florence Kondylis | The World Bank |
| Maria Jones | The World Bank |
| John Loeser | The World Bank |
| Jeremy Magruder | University of Berkeley |

FUNDING

| Name | Abbreviation | Role |
|---|---|---|
| Global Agriculture Food Security Program | GAFSP | |
| International Initiative for Impact Evaluation | 3ie | |
| International Growth Center | IGC | |

## Metadata Production

METADATA PRODUCED BY

| Name | Abbreviation | Affiliation | Role |
|---|---|---|---|
| Development Economics Data Group | DECDG | The world Bank | Documentation of the DDI |
| Office of Chief Statistician | OCS | Food and Agricultural Organisation | Adoption of metadata for FAM |

DDI DOCUMENT VERSION

RWA_2015-2018_LWHIE_v01_EN_M_v01_A_OCS_v01

DDI DOCUMENT ID

DDI_RWA_2015-2018_LWHIE_v01_EN_M_v01_A_OCS_FAO

# Sampling

## Sampling Procedure

For three of the sites that are being used for the spatial regression discontinuity analysis (K12, N23, and R34), we divided the site into 3 areas - CA buffer (BCA), CA Catchment buffer (BCAC), and CA terraces (TCA). BCA is the area inside of the CA (CA, below main canal) within 50m of the boundary of the CA. BCAC is the area in the CA Catchment (CAC, above main canal) within 50m of the boundary of the CA. TCA is the terraced farmland that is in the CA, but more than 50m from the boundary of the CA. The third site will be used for the within-CA experimental designs only, and as a result we focused our sampling in one area - the CA terraces (TCA).

We constructed our household sampling by dropping a uniform grid of points across the full site at 2-meter resolution, and then sampling points within the grid. After each point was sampled, we excluded any points within 10m of that point (to keep from selecting multiple points too close together).
Enumerators were then given GPS devices with the locations of the points, and sent to each point, with a key informant (often the village leader). For each point, they were asked to identify if the point was on cultivable land (this was to discard forest, swamps, thick bushes, bodies of water, or other terrain which would make cultivation impossible). They were asked to record, for points in cultivable land, in SurveyCTO, the following:
1. The name of the point visited (which was displayed on the GPS);
2. The name of the cultivator, the location of their residence, and their phone number;
3. A description of the plot detailed enough that the cultivator would be able to identify the exact plot described

Additionally, they were asked to save their GPS track at the end of the day, as a way of tracking the number of hours they spent checking points and to verify that they visited each point. We used the data from this listing to construct a roster of all the unique names of cultivators, clustering points together when the names seemed identical. This roster (which contained the name of the individual, their village and phone number, the descriptions of the plots, and the villages in which the plots were located (identified using village shapefiles) and were organized by village) were then used to contact village leaders and verify that the listed individuals in fact existed. Multiple follow-ups were sometimes needed when village leaders suggested that one individual lived in a different village, or multiple village leaders said an individual lived in their village.

Finally, a sample plot was selected for each verified 2689 households. To select this sample plot, one point was randomly selected for each household. The probability of selecting a particular point was weighted - a weight of 1 was assigned to points in the BCA and BCAC, and a different weight was assigned for points in the TCA, to balance the number of sample plots in these areas.

## Weighting

No information. Refer to dataset provided by World Bank Data.

# Questionnaires

No content available

# Data Collection

## Data Collection Dates

| Start | End | Cycle |
|---|---|---|
| 2015-08-24 | 2015-10-27 | Baseline (Karongi and Nyanza) |
| 2017-05-15 | 2017-06-27 | Follow up 1 (Karongi and Nyanza) |
| 2017-11-13 | 2017-12-12 | Follow up 2 (Karongi and Nyanza) |
| 2018-10-31 | 2018-12-04 | Follow up 3 (Karongi and Nyanza) |
| 2018-01-23 | 2018-02-23 | Baseline (Rwamangana) |
| 2018-12-05 | 2018-12-19 | Follow up 1 (Rwamangana) |

## Data Collection Mode

Face-to-face [f2f]

# Data Processing

No content available

# Data Appraisal

No content available