THE WORLD BANK
IBRD • IDA | WORLD BANK GROUP

Impact evaluation of the Plans Foncier Rural, Benin

Endline Data Collection (March 2022)

Study Documentation

November 2023

List of Acronyms

ADC Attestation de Détention Coutumière
ADECO BAssociation pour le Développement des Communes du Borgou
C4ED Center for Evaluation and Development
CAPI Computer Assisted Personal Interview
CPF Certificat de Propriété Foncière
GIZ Deutsche Gesellschaft für Internationale Zusammenarbeit
INSAE Institut National de la Statistique et de l'Analyse Economique
MCA Millennium Challenge Account
PFR Plan Foncier Rural
ProPFR Promotion d'une Politique Foncière Responsable
SEWOH Sonderinitiative Eine Welt Ohne Hunger
SVGF Section Villageoise de Gestion Foncière (Village Land Council)

Table of Contents

1.0 Background

Land is an economic asset that serves multiple important purposes: residential, agricultural, and communal (grazing lands, forests, water bodies, public infrastructure). Tenure security is crucial in ensuring poverty reduction, food security and equity. Farmers who lack secure land rights are less likely to carry out essential yield-improving investments in their land as the insecurity prevents them from committing to long-term plans.

The Promotion d'une Politique Foncière Responsable (ProPFR), is a GIZ funded programme to improve the land tenure security of households on customary land in the Borgou department of northern Benin.

The main objectives of ProPFR are:
- a) Improvement of institutional conditions and procedures to provide secure land rights (PFR, ADC, formalization of user agreements, group rights) and reducing land conflicts by establishing local conflict mediation institutions.
- b) Participation of civil society in the formulation and implementation of the legal framework for land
- c) Inclusion of private agricultural investors and raising their awareness for responsible land policies.

1.1 Study Objectives

The PFR activities to be evaluated at end-line consists mainly of demarcation and registration of land parcels (under customary tenure) as Titre Foncier or an Attestation de Droit Coutumière. The impact evaluation aims to quantify and analyse impact of these interventions on productivity and food security disaggregated by target groups and gender.

The research questions to be answered after the endline data collection are:
1. Do PFRs (or ADCs) contribute to a perception of greater land tenure security?
2. Does improved tenure security lead to a growth in agricultural investment and/or changes to management of land?
3. Do PFRs improve access to land and rights over land among marginalised groups (women, youth and migrants)?
4. Do PFRs lead to an increased number of land transactions?
5. Does increased land security address existing constraints on land markets and lead to more efficient allocation of land resources and thereby an increase in productivity?
6. Do property rights and improved user rights result in better access to credit, possibly allowing for income diversification and thus increasing household welfare?
7. Do the new arrangements put in place during the implementation of the PFRs facilitate the resolution of land conflicts, or even prevent the emergence of these land conflicts?

1.2 Survey Design

The impact evaluation consists of gender and youth disaggregated data collection at baseline, before the start of the intervention, in both the treatment and control villages. Endline data was collected at least 2 growing seasons after issuing of documentation to farmers.

The sample consisted of 2,626 households, which were taken from 52 villages of the four municipalities selected for the implementation of a Plan Foncier Rural (PFR), or rural landholding plans, these were the treatment villages and 27 control villages that did not benefit from a PFR.

1.3 Selection of Sample Areas

The treatment villages were assigned by the ProPFR team in geographic clusters. The assignment of control villages followed this geographic clustering, also using further village level data with the aim of finding similar villages to maximize comparability.

These clusters were spread across the communes of Bembéréké, Sinendé and Kalalé in the north and Tchaourou in the south of the department of Borgou.

Villages were selected from 11 geographical clusters of villages facing similar issues, allowing easier logistical planning for the rollout of the PFRs.

Villages selected to be part of the programme had the following characteristics;
- Bordering/near to a classified national forest
- At high risk of land grabbing,
- The presence of another GIZ supported SEWOH project1
- Agropastoral areas (particularly the presence of transhumance –cattle driving - corridors)

But should not have the following:

- Villages bordering Nigeria, within the band of increased security;
- MCA intervention with a PFR; and
- Suffered serious conflict which could block the realisation of a PFR, or where a PFR may reignite past conflicts.

These characteristics alongside the logistical requirement to select villages in clusters presented the first challenge in selecting suitable comparison villages to measure the impact of the ProPFR programme. Clustering meant that villages selected for comparison should be near the clusters to be comparable but given the typical geography of villages in northern Benin, in that most people live in the village centre rather than spread evenly with sufficient density at the village boundary, and the lack of clearly defined village boundaries, a geographic discontinuity could not be exploited.

The second challenge in selecting comparison villages arose due to a change in the village definitions in 2013, when Benin changed from 3,758 to 5,290 villages which is often referred to as the "nouveau découpage". Some old villages were split but there are no clearly defined village boundaries for the new set of villages. ProPFR selected from among the new villages, so the control villages also needed to be selected from this list. Given that the last census was collected prior to this new definition of villages, no data about the villages existed that could easily be used in matching villages to those selected for the ProPFR.

Due to this lack of data on the characteristics of the people residing in the villages, Geographical Information Systems (GIS) data were used to match each of the treatment PFR villages to a control village. Villages which were previously included in the MCA's wave of PFRs were excluded from our study due to the difficulty in separating the effects of the two programs (MCA vs ProPFR).

For each PFR village, a buffer of 20km was drawn and the union constructed for each cluster. Within this area, other villages were considered as a potential control village. Of the selection criteria, the only one applicable from GIS data is the proximity to a national forest. Where villages were close to a national forest, we attempted to match it with a control village also close to a national forest.

The additional criteria on which villages were matched were the proximity to a main road (as classified by the Open Street Map shapefiles for roads) and the number of buildings in the central agglomeration of a village. Main roads are used as a proxy for access to markets and thereby potentially income levels.

---

1 The most common programme is ProSOL, a programme to protect and rehabilitate the soil, but also include ProFINA and ProAgri.

The size of a village and the amount of land which can be used around it will be influenced by the size of the population as well as the presence of national forests.

This strategy is similar to a Coarsened Exact Matching (CEM) strategy (see Blackwell et al, 2009), in which key characteristics are reduced (perhaps from continuous variables) to a small number of categories and matched with one another exactly.

In our selection of villages, one control village was selected for each treatment village based on the key characteristics, defined as proximity to national forests (5km) and main roads (1km), and having a similar number of buildings (within 1km of the central point).

For a small number of villages, we faced an issue of common support, meaning there were no exact matches on the key characteristics. In this case other nearby villages were selected which fulfilled as many of these characteristics as possible.

Data were collected on a wide range of variables following the theory of change, which states that the improvements in institutions and the PFRs may lead to improved perceived land tenure security and improved access to land for women and young men through the activities carried out by the ProPFR team.

This perceived land tenure security is often seen as key to agricultural investments and thereby food security in the long term, as it allows long-term planning. The issuing of official documentation provides collateral for a loan should households wish to borrow and invest in productive activities or smooth consumption.

2.0 Survey Questionnaire – Review of Sections

The Survey comprised two questionnaires, namely;

1. Household Questionnaire:

   Which comprised 17 modules with 19 rosters. Modules include household members, employment and enterprises, durable goods, housing, census of non-agricultural plots, agricultural plots, land donations, land sales, land losses, perceptions on land tenure, participation in PFR, loans, food security, young men and women.

2. Community (village) questionnaire:

   The community survey was administrated to each village in the form of small group interviews to collect information on the socio-economic characteristics of these villages, local land tenure structures and practices, and local prices on agricultural inputs and production. The questionnaire was organized in 9 modules: characteristics of the survey participants, land tenure, land use, land market, land conflicts, other village structures and interventions, agriculture, PFR, and village chief. The characteristics of the participants were recorded in a separate roster.

The extensive household survey was first asked to the household head with additional modules to be answered by the wife of the household head (or the female household head) as well as a young male (defined as an unmarried man, aged 18-35).

Each of the questionnaires had varying sections and questions, below we review these sections.

2.1 Household Questionnaire

Section 1: Identification

Information in this section was provided to the field teams by the staff at the Headquarters (HQ) before starting data collection including the prefilled GPS, names of Commune, whether or not household is in ProPFR or not, village names and codes pertaining to the sampled villages, identification of head of household, number household members and consent.

Module A 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 relation to head, age, sex, ethnicity, origin (migrant status) 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 based on how long they have lived in the household.

Module B Employment and Enterprises

This section covered wage employment for each household member over 10 years of age. The head of the household responded him/herself and on behalf every household member under 15 years. All those over 15 responded themselves. 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 (primary and secondary) and time spent.

Module C-I Household Assets

This section aimed at collecting data to estimate the value of household assets. It categorizes the assets including agricultural assets such as tractors and whether the household possessed any Livestock including oxen and Poultry. This section goes on to collect details on oxen possessed by the household and details of feeding of the cattle.

Module C-II Housing Condition and Sanitation

Data from this section was aimed at measuring the 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, ownership status and access to basic services (including water, electricity and sanitation).

Module D-0 Inventory of Non-Agricultural Land

The purpose of this section was to collect information on non-agriculture parcels owned by the household(any member in the household). It goes on to make a list of each and capture details of such land, such as location (in this village or not), where exactly this land is located (same commune, district, subdivision..), main use of this land, size, year obtained, possession of any formal ownership, etc.

Module D-I – D-X Agricultural Land

These sections gathers information on all agricultural land that the household owns, has use rights over, lent out, or even left fallow. It goes on to solicit information on who in the household makes decisions on this land, main source of water for this land, size, main land use, how this land was received/obtained, etc. This section also gathers data on investement on this land, conflicts on land, land rights, PFR land, land security.

Module F-I Production in Main season

This section solicits information on agricultural production in the main season of October 2020-May 2021. This is at plot level for every agricultural land mentioned in D-I – D-X above. This gathers information on main and secondary crop cultivated, quantities produced, sold, consumed, lost, etc.

Module F-II Utilization of Chemical Products

This section covers cultivation practices, types of seed, usage of fertilizer, type of fertilizer. Usage of pesticides, etc.

Module F-III Labor

This section gathers information on labor on the cultivated plots. How many days of labor soil preparation, tiling, planting and harvesting.

Module E-I Land Given out

The purpose of this section was to gather information on parcels given out or given away. Details of the land given away are collected.

Module E-II Land Sold

The purpose of this section is to have a complete list of all the land that has been sold by any member of the Household. Details such year of sale, reason for sale, price sold, to whom the land was sold, etc.

Module E-III Lost Parcel

This section collected information on parcels that have since been lost by the any member of the household. Details of these parcels are enlisted.

Module H Land Perceptions

The purpose of this section was to collect information on general perceptions regarding land owned by the household. Details such as administration perceptions, usage of land etc.

Module I Participation in PFR

This section aimed at collecting information of PFR program participation by household members. It covered topics related to land management responsibilities, knowledge and information of ADC, participation and sensitization.

Module J-I Credit

This section covers the details of loans applied for by any Household member (18 years and over), and in what period (last 12 months, 1 or 2 years, over 2 years). It further gathers details on source of this loan, collateral, usage of the loan.

Module J-II Food Security

The purpose of this section was to collect information on vital food needs households during the last 7 days. It provided additional information to assess household welfare, cost of meals, availability of sufficient food for both young and old. Food security for children under 5 years. It goes further asses welfare in the last 12 months.

Module G Young (un-married) Man

This section collected information from a young un-married man in the household. It gathers information on management rights, work rights by this young man on any of the land. It goes on to gather information on any given land (non-agricultural) to this young man, its size, further capturing information also on agricultural land given out to this young man. Including perceptions and expectations of inheritance of land.

Module K Woman

This section collected information from the eligible woman in the household. It surrounds information on marital status, how often the woman sees her husband, when she got married, type of union, number of children and matters surrounding marital wellbeing including perceptions based on hypothetical scenarios of land rights following separation, perceptions regarding land rights, inheritance and participation in village assemblies, etc.

Name	Module	Level of Analysis	Identification Variable
Tableau de Menage, Emplo et Entreprise	Household Roster	Household, individual	interview__id, hh_id, m00__id
Biens Durables	Module C-1	Household	interview__id, hh_id
Habitation	Module C-2	Household	interview__id
Recensement Des Terrains Non-Agricole	Module -D-0	Parcel	interview__id ,hh_id na__id
Terrain Agricole	Module D-1	Parcel	interview__id a__id
Terrain Agricole Investement	Module D-IV	Parcel	interview__id aplots
Securite Foncier	Module D-IX	Parcel	interview__id aplots a__id
Terrain en Jachere	Module D-V	Parcel	interview__id aplots
Conflits sur Les Terrains	Module D-VI	Parcel	interview__id aplots a__id
Droits sur Les Terrains	Module D-VII	Parcel	interview__id aplots a__id

Terrains PFR	Module D- VIII	Parcel	interview__id a__id
Terrain Agricole	Module D-X	Plot	interview__id a__id
Dons De Terrain	Module E-I	Household	interview__id
Terrains Donne	Module E – I	Parcel	interview__id don__id
Terrains Vendus	Module E-II	Parcel	interview__id ven__id
Ventes De Terrains	Module E-II	Household	interview__id
Pertes De Terrains	Module E-III	Household	interview__id
Terrains Perdus	Module E-III	Parcel	interview__id per__id
Production Agricole	Module F – I	Parcel	interview__id fields__id
Production Grande Saison	Module F- I	Plot	interview__id aplots a__id cgrs1
Utilisation Produits chimiques	Module F-II	Plot	interview__id a__id fields__id
Travaile Et Main Doeuvre	Module F-III	Plot	interview__id a__id fields__id
Jeune Homme	Module G	Household	interview__id
Perceptions Foncier	Module H	Household	interview__id
Participation Aux PFR	Module I	Household	interview__id
Credit	Module J-I	Individual	interview__id m00__id
Securite Alimentaire	Module J-II	Household	interview__id
Femme	Module K	Household	interview__id

3.0 Training and Data Collection

Training of field staff was conducted in three stages, namely classroom training, field practice and debriefing with solution approaches for the problems identified. The first stage, carried out from February 16 to 25, 2022, was essentially on understanding the different modules, followed by indoor simulation exercises. It consisted of the simultaneous reading of the questionnaires and the manual with explanations and filling instructions, simulations in the rooms and the use of the input mask developed under the Survey Solutions application (application developed by the World Bank) on the tablets.

The second stage focused on practical work in the field which took place in two parts. It involved 15 teams of field staff with 4 enumerators and one supervisor in each team. The first part consisted of a field exercise on taking GPS coordinates. It took place on February 19 and 25, 2022 in the vicinity of the training site. The debriefing of this exercise session helped to identify gaps and common mistakes that should be avoided during the pilot and then main data collection.

The second phase of the field training was conducted on February 26 and 27, 2022 and involved practical training under actual field conditions. This phase of the training aimed at testing the overall organizational system as well as the timing and flow of the questions, and technical issues in taking the GPS location of residential as well as agricultural plots.

The third phase of the training, which took place on February 23, 28 and March 1, 2022, was the debriefing sessions in the classroom (summary of teamwork, compiling difficulties encountered as well as recommendations and approaches to solutions).

At the end of this training, 65 survey agents, 13 team leaders and 4 editors were selected based on their knowledge of the tools, attitude and understanding of the various aspects of the survey that took place in three stages, namely classroom training, field practice and debriefing with solution approaches for the problems identified.

3.1 Response Rate

Roughly about 2,600 households were successfully interviewed at endline, representing a 90% response rate for the PFR villages and 89% for the control villages. The main reason for non-response was due to households moving out of the village (5.8% and 6.9% of households in PFR and control villages respectively). In total only 11 households from baseline refused to be interviewed at endline. There are no systematic differences in household level attrition between PFR and control villages.

4.0 Field Work Organization

Endline data were collected between March and May 2022.

The questionnaires were administered in face-to-face interviews in the respondents' homes using tablets with Survey Solutions installed. Throughout the data collection, staff from C4ED checked the progress via the Survey Solutions online platform.

Checks of a subsample of entire surveys were made during the first two weeks to review the answers being entered by the enumerators, giving additional feedback to the INSAE team where issues were identified.

4.1 Data Cleaning

Various consistency checks were performed to ensure data quality, including systematic reports of contradictory answers and of extreme values. The data were also examined for missing information for required variables, and sections. Any problems found were then reported back to the supervisors where corrections were then made.

4.2 Creating Baseline-Endline Panel

Baseline unique household (interview__id), individual (m00__id) and agricultural parcel (a__id) identifiers are included in all the relevant sections. These IDs could be used to merge baseline and endline data for panel households.

5.0 Producers

The PIs for this study are Daniel Ali Ayalew, Klaus Deininger and Thea Hilhorst from the World Bank.

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

Data collection was done by a team from INSAE.

Data Analysis was supported by a team of the University of Mannheim led by Nick Barton.

6.0 Accessibility

Access Authority is the World Bank

Contacts: Daniel Ali Ayalew dali1@worldbank.org; Thea Hilhorst thilhorst@worldbank.org