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# COMMUNITY LAND PROTECTION PROGRAM (CLPP) PERFORMANCE EVALUATION (PE)

Pre-Analysis Plan

NOVEMBER 2016

This document was produced for review by the United States Agency for International Development. It was prepared by Cloudburst Consulting Group, Inc. for the Evaluation, Research, and Communication (ERC) Task Order under the Strengthening Tenure and Resource Rights (STARR) IQC.

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## **DISCLAIMER**

The authors' views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

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# ACRONYMS AND ABBREVIATIONS

ATE	Average Treatment Effect
CLPP	Community Land Protection Program
DD	Difference-in-Differences
DFID	Department for International Development
ERC	Evaluation, Research, and Communication Project
FGD	Focus Group Discussion
ICC	Interim Coordinating Committee
IDLO	International Development Law Organization
IDRC	International Development Research Centre
IRB	Institutional Review Board
ITT	Intent to Treat
KII	Key Informant Interview
M&E	Monitoring and Evaluation
MDES	Minimum Detectable Effect Size
MOU	Memorandum of Understanding
PE	Performance Evaluation
RCT	Randomized Control Trial
SDI	Sustainable Development Institute
SMD	Standardized Mean Difference
STARR	Strengthening Tenure and Resource Rights
TOT	Treatment on the Treated
USAID	United States Agency for International Development

# INTRODUCTION

Developed by the international legal empowerment organization Namati<sup>1</sup>, the *Community Land Protection Program* (CLPP) is a global program that seeks to empower communities to successfully protect their land rights through the provision of legal services, land mapping and a documentation process. CLPP is a 12 to 18 month project that is funded by the United Kingdom's Department for International Development (DFID), and implemented in partnership with the Sustainable Development Institute in Liberia (SDI)<sup>2</sup>.

Within the context of national land reform in Liberia, CLPP seeks to address the critical need of protecting community land and improving local resource governance for the overall benefit of citizens in Lofa, River Gee, and Maryland counties. To achieve this goal, the program promotes an integrated community land protection model that supports communities to protect their lands and natural resources, as well as to leverage the community land documentation processes to strengthen intra-community governance and accountability. The program consists of three main components:

1. Community empowerment, including provision of legal education regarding rights and responsibilities in the context of decentralized land management;
2. Boundary harmonization and conflict resolution, including comprehensive mapping of community land, negotiation with neighbors (to define the limits of community land), and boundary demarcation (GPS/surveying, planting boundary trees, signing memoranda of understanding (MOUs)); and
3. Fostering good governance, including cataloguing, discussing, amending, and adopting rules for community land and natural resource management and electing a diverse, permanent, accountable governing body to manage community lands and natural resources.

Namati, the International Development Research Centre (IDRC), and USAID's E3/Land Office are jointly funding a rigorous performance evaluation (PE) of CLPP. This rigorous PE was designed to provide evidence on seven 'families' of outcomes at the community and individual level. **Tenure security** and land and natural resource **governance** represent the two primary outcome families investigated in the study and motivate the following key research questions of interest:

**Primary Research Questions:** How does CLPP affect land tenure security and community-level governance?

- Whether and how CLPP efforts function to effectively strengthen the land tenure security of rural communities;
- Whether and how CLPP efforts improve perceptions of governance and increase accountability of local leaders;
- Whether and how training, mentoring, and technical support help communities to document their land and to codify rules in order to protect their community land and natural resource claims;

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<sup>1</sup> Namati is an international global network that works with local civil society organizations to develop and implement legal empowerment interventions.

<sup>2</sup> SDI is a civil society organization in Liberia dedicated to protecting land, property and resource rights for Liberian citizens.

- Whether and how the program impacts land protection and governance participation of women, youth and minority group members.

The remaining five outcome families of interest consider the following questions: does the CLPP intervention reduce the prevalence of local land **conflict**, promote community **empowerment** and receipt of benefits during the negotiation and implementation of investments undertaken on community land, increase **natural resource conservation** and community **land development**<sup>3</sup>, and support community and household **livelihoods**, while safeguarding the rights of **women and other vulnerable groups**?

## 7 CLPP Outcome Families

1. Tenure security
2. Land and natural resource governance
3. Land Conflict
4. Empowerment
5. Natural resource conservation & community development
6. Livelihoods
7. Heterogeneous treatment effects for subgroups of interest

This document describes the midline analysis plan for the CLPP PE<sup>4</sup>. The plan serves as an important guide for assessing the rigor and validity of the final analysis, as the authors will complete and register the plan prior to the collection of midline data. The pre-analysis plan is structured as follows:

- Sections 1 and 2 provide the research motivation and background;
- Section 3 presents details of the evaluation design;
- Sections 4, 5 and 6 describe the data and indicators used for hypotheses testing and outline the empirical strategy;
- Section 7 summarizes study power and balance;
- Section 9 covers ethical considerations; and
- Section 10 lays out the estimated deliverable schedule.

<sup>3</sup> Community land development includes community driven labor and financial investment in infrastructure on individually and communally held land.

<sup>4</sup> This evaluation was designed to allow for a third (endline) round of data collection, but additional funding sources have not been identified for this purpose and, as of this plan's drafting, the midline will be the final round of panel data collection and analysis.

# I.0 BACKGROUND

Since the late 1960s, a number of African nations have passed laws that recognize and support the central role of customary tenure in rural land administration and management. These include Botswana, Burkina Faso, Ghana, Mali, Mozambique, Namibia, Niger, Senegal, South Africa, Uganda, and the United Republic of Tanzania. In some instances, customary land rights have received the same standing as state-issued land rights and included the integration of customary rules and dispute resolution bodies into the national formal system (Wily 2003).

This trend is also evident in Liberia, where nascent land reforms provide a potential legal framework for protecting community land. Liberia's land tenure has historically been characterized by a dual system, with a minority, urban-based elite, largely the descendants of freed slaves from the United States and the Caribbean, using a Western statutory system of land ownership based on individual titles along the coast, and the majority of indigenous Africans using their own customary tenure systems, often based on community or collective ownership, in the inland rural areas. While there were multiple causes of Liberia's 14-year civil war, which ended in 2003, conflict over land and natural resource rights, and in particular a policy framework that permitted the state to transfer large areas of customary lands for private concessions and national parks, played a central role (USAID, 2010b). Critically, Liberia's post-war democratically-elected government has made a number of key reforms to the country's land tenure system that aim to address a number of the inequalities and grievances created by the previous policy framework. These include the development of a comprehensive new national Land Rights Policy, which was adopted by the government in 2013.<sup>5</sup>

In a significant departure from the previous dual tenure system, the Land Rights Policy (referred to hereafter as the 'Policy') establishes four land tenure categories: *government land*, which is land used by the government for its operations; *private land*, which is land held in fee simple by an individual or legal entity; *customary land*, which is land held by a community in accordance with their customary practices and norms; and *public land*, which is a residual category of land that is expected to constitute the smallest area of Liberia's land mass—"a dramatic turn of events in a country that has long-regarded nearly all land as public" (Toe and Stevens, 2014, p. 4). The Policy also vests land and surface natural resource ownership with communities – addressing heretofore ambiguity in the legal system and closing the loop on the Community Rights Law – and provides for substantive and procedural protections for landholders whose rights are extinguished through expropriation (narrowly defining "public purpose" as it relates to expropriation). Perhaps most significantly, the Policy recognizes the full land ownership rights of communities in Liberia as equivalent to private land rights, regardless of whether the community has self-identified, established a legal entity, or holds a deed (Toe and Stevens, 2014).

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<sup>5</sup> The interim Liberia Land Commission was created in 2009, and its mandate included the development of the comprehensive new national Land Rights Policy. The Land Authority Act, passed in 2016, establishes a new Liberia Land Authority, which will assume land functions from the patchwork of national agencies that had previously been responsible for these tasks and coordinate land administration duties at the central and local levels.



Although parts of Liberia's land mass have been documented through "a patchwork of deeds and other quasi-legal documents, called tribal certificates<sup>6</sup>," there is no comprehensive and up-to-date information on the exact number of these documents, nor on the nature of rights they convey or the exact location of the claims held (Toe and Stevens, 2014, p. 5). An important remaining objective of the land reform process has been the development and implementation of a methodology for documenting community land rights. Such a path was included in the drafting of the Land Rights Act, which was submitted for parliamentary review by the President in July, 2014. Passage of the Act has since stalled.

Since Liberia's land reform process began in 2009, Namati, the International Development Law Organization (IDLO) and SDI have been assisting rural communities through CLPP to demarcate and protect their land and resources according to the process set out in the draft Land Rights Act (Knight et al., 2012). The CLPP approach is based on the argument that a thoughtful and effective documentation process for community lands held according to custom may help to protect rural communities' land claims, livelihoods, and way of life, reduce conflict and instability in the long term, and foster endogenously-driven community development (Rachael Knight, CLPP concept note). As the Land Rights Act remains under review and a formal process for legal certification does not currently exist, CLPP's documentation procedures for customary land have remained informal in Liberia and focused on community empowerment, boundary demarcation and good governance.

The impacts of supporting communities to protect their community land remain unknown, as to date there have been no rigorous studies on the relative efficacy of community land protection efforts. This study aims to fill the knowledge gap on the benefits of community land protection by investigating the effects of the CLPP model on improving tenure security, local empowerment, resource governance, and livelihoods. Previous research has focused on the economic impacts of *individual* land titling programs and the positive returns that these programs have for household-level economic development (Galiani et al. 2010; Lawry et al., 2014). In contrast, this evaluation will explore the political, social, and economic impacts of protecting *community* land. Outcomes will be evaluated at both the household and community level.

More generally, this evaluation has relevance for the broader question of the effectiveness of skills building, training, and technical support interventions by outside actors. While CLPP aims to provide comprehensive support to communities so that they might protect their land, it does not provide specific material benefits in the form of cash loans or grants. As a result, this evaluation presents an additional test of the general hypothesis that "soft" interventions, such as the CLPP, can spur economic development.

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<sup>6</sup> A tribal certificate is the first step in the public land sale process that denotes the community's consent to a purchaser's acquisition of the land. These tribal certificates are often used to individualize community land as fee simple holdings rather than complete the lengthy and expensive public land sale process. The Land Rights Act, implementing the Policy, may permit their conversion to leases or deeds if certain conditions are met.

# 2.0 INTERVENTION OVERVIEW

The CLPP is an international framework to support communities<sup>7</sup> to use national land laws to protect their customary and indigenous lands<sup>8</sup>. The overall community land protection process is broken into five distinct stages of intervention:

1. Stage 1: Laying the groundwork;
2. Stage 2: Strengthening community governance;
3. Stage 3: Harmonizing boundaries and demarcating lands;
4. Stage 4: Pursuing legal recognition; and,
5. Stage 5: Preparing communities to prosper.

However, during the course of the program in Lofa, Maryland and River Gee counties in Liberia, communities therein are expected to be exposed to only the first three program stages, due to the continued delay in passage of Liberia's Land Rights Act (for Stage 4) and funding constraints (for Stage 5). Therefore, in this context of land reform in Liberia, the CLPP seeks to support community-based structures in the following three stages, which are also the focus of the PE:

1. **Stage 1: Laying the Groundwork**—Community empowerment, including provision of legal education regarding rights and responsibilities in the context of decentralized land management;
2. **Stage 2: Strengthening community governance**—Documentation and formalization<sup>9</sup> of community natural resource governance structures, including cataloguing, discussing, amending, adopting rules for community land and natural resource management, establishing bylaws for community land administration, and electing an accountable governing body to manage community lands and natural resources; and
3. **Stage 3: Harmonizing boundaries and demarcating lands**—Boundary harmonization and conflict resolution, including comprehensive mapping of community land and negotiation with neighbors (to define the limits of community land).

These interventions are being delivered at the community (clan or town cluster) level in three rural counties in Liberia—Lofa, Maryland, and River Gee—over the course of 12–18 months from 2016–2017. The exact timeline for program implementation in each community depends on community capacity and various socio-political factors that impact community progress, including the quality of community leadership, the degree of community cohesion, and incidence of land conflicts. Due to the

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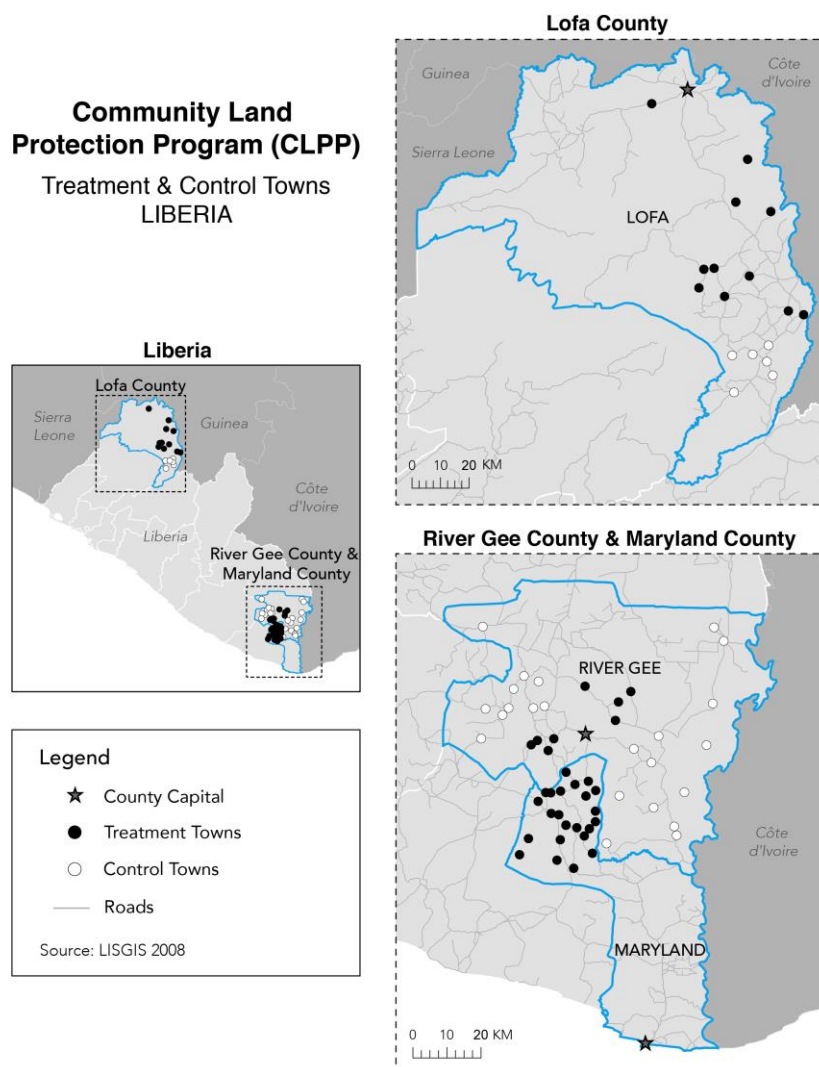
7 The definition of 'community' varies according to what is appropriate for a specific location. During the first step of the community land protection process, the facilitating organization consults regional leaders, relevant government officials, and community members about how best to define the 'community' that will undertake land protection activities based on cultural, political and geo-spatial realities on the ground and the preferences of local leadership and community members.

8 For more information about CLPP, please visit: <https://namati.org/ourwork/communityland/>.

9 Please note that communal land formalization through titling is Stage 4 of CLPP, but it will not be undertaken in these counties due to the delay in passage of the Land Rights Act in Liberia. In Stage 2, 'formalization of natural resource governance structures' refers to the adoption of written bylaws governing resource use and the election of a Land Management Committee to oversee land issues in the community.

outbreak of the Ebola virus in Liberia in the second half of 2014, program implementation was put on hold in July 2014 and resumed in the first quarter of 2016. Figure 2.1 presents a map of Liberia with the study counties and towns highlighted. The following sub-sections outline the program activities for the three program components that are the being undertaken in the study area. For more information about CLPP, please visit: <https://namati.org/ourwork/communityland/>.

**FIGURE 2.1—CLPP TREATMENT AND CONTROL SITES**



## STAGE I: LAYING THE GROUNDWORK

The community empowerment and legal education component seeks to educate participants about community rights and responsibilities in the context of Liberia's emerging legal framework for land. These efforts include:

- A community history and planning for the future exercise<sup>10</sup>;
- A valuation exercise in which community members undertake a basic calculation of the replacement costs of their common resources;
- The election of a community wide Interim Coordinating Committee (ICC)<sup>11</sup> and the selection of community animators, who work closely with the NGOs to lead their communities through the community land protection process.

Meetings occur at the community (clan or town cluster) level, or in large clans at the level of a subset of towns within the clan. There is a single coordinating committee per community (clan or town cluster). Each community (clan or town cluster) has two animators.

## **STAGE 2: STRENGTHENING COMMUNITY GOVERNANCE**

Bylaw drafting represents an intervention to promote good governance. There is a four-part process for the drafting of bylaws/constitutions:

- First, a community meeting is organized at which a community-wide “shouting out”/brainstorming of all existing land rules, norms and practices occurs.
- Second, SDI supports the community to create the first draft of its bylaws through analysis of all existing the rules, norms and practices, taking into consideration those that are in-line with or contradict national laws. This effort also considers evolving community needs, for example, any customary norms that might discriminate against women and other vulnerable groups.
- Third, second and third drafts of the bylaws governing community land are written following debate and discussion concerning any amendments, additions or deletions of rules.
- The final step in the process is formal adoption of the bylaws governing community land, either by full community consensus or super-majority vote.

This process is systematically designed to promote a culture of participatory local governance by fostering direct participation by community members in rule-making decisions previously made only by customary and state authorities. It enables the community (clan or town cluster) to set up a Land Management Committee and mechanisms, such as election and impeachment criteria, to hold local leaders accountable. Having written, vetted rules and penalties for infractions enables communities to establish guidelines and norms for land and natural resource management that are clear and well known to all members of the community. The process is also designed to provide a mechanism for protecting the land and inheritance rights of women and other vulnerable groups.

Two additional important effects of the bylaw process include the generation of a natural resource management plan and creation of rules to more closely control and monitor outsiders’ use of land and natural resources. For natural resource management, this includes reviving or adding rules to promote sustainable hunting or fishing practices, and the conservation of key forest resources such as fuelwood

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<sup>10</sup> In a community meeting, community members analyze the past and present conditions of their community’s natural resources, and then begin to plan for future goals and improvements.

<sup>11</sup> The Interim Coordinating Committee is composed of representatives from key stakeholder groups in the community who: 1) Spread news and updates about the community land protection work throughout their networks; 2) Seek out the ideas, comments and reflections of people in their network who cannot attend meetings, then share their contributions at meetings (to ensure that all voices are heard); and 3) Report what happened at each meeting back to their networks. The ICC is a temporary body: it will be replaced by an elected Land Management Committee (Land Governance Council) after the community drafts and adopts its bylaws.

and building materials. CLPP encourages the introduction or reinforcement of bylaws that ensure benefits and protections for communities during negotiations with investors.

### **STAGE 3: HARMONIZING BOUNDARIES AND DEMARCATING LANDS**

Boundary harmonization represents a three-step process, including community mapping, boundary negotiation with neighboring clans, and boundary demarcation. Boundary harmonization involves conflict resolution at each stage of mapping and demarcation that requires internal and external agreement, spearheaded by a community (clan or town cluster) boundary team. The conflict resolution process involves holding community meetings to facilitate dialogue, working with trusted community leaders and government officials, and mediation. Once boundaries are agreed upon, the demarcation steps include:

- Map-making (hand drawn sketch maps);
- Tree planting;
- MOU-signing ceremonies between neighboring communities/clans; and
- GPS mapping/formal surveying.

# 3.0 RESEARCH DESIGN

## OBSERVATION UNITS

A key factor in both the program design and in the PE is working with the correct community land governance unit. In the areas of Liberia included in this study, community land is managed by different governance structures depending on context. In some cases, a single town has historically managed and used communal land and natural resources on its own. This is the result of a confluence of historical, geographic, demographic and political factors, including the history of settlement in Liberia, the ways that the central government interacted with different areas under customary tenure in the 20<sup>th</sup> century, and local customary governance mechanisms, which vary across Liberia (Sawyer, 2005). In other cases, however, towns in a given area are too small, thus several towns in a cluster share the responsibility for managing and using communal land and natural resources.

Large towns in some cases, and town clusters in others, roughly correspond to the governance unit of a clan, although there are exceptions. In Liberian history, clans were a subunit of local or customary ethnic governance structures (known as “tribes” in local parlance). However, starting in the first half of the 20<sup>th</sup> century, local chiefs who were part of this customary system became government employees. In many parts of rural Liberia, chiefs were essential to the collection of taxes and, as such, became representatives of the central government (Konneh, 1996; Sawyer, 2005). Areas of Liberia that did not historically have clans were integrated by the government into this absorbed chief system (e.g., Brown, 1982). As a result, this report refers to community-based land management systems, as opposed to customary land management systems. Taking this history into account, SDI conducted a mapping “self-identification” exercise to determine which towns and town clusters (and corresponding clans) were eligible for the program.

For a town or town cluster to qualify as a community for inclusion in CLPP, community leaders had to identify the town or the cluster of towns as sharing communal land and natural resources. Membership in the same clan, while almost always the case, was not a necessary condition<sup>12</sup>. As designed, the units eligible for inclusion in the baseline survey were either standalone towns or the largest town within the town cluster, which is typically the town of first (oldest) settlement<sup>13</sup> whose governance structures control communal land management for the entire cluster of towns. However, the baseline sample actually includes multiple towns within the same clan or town cluster, while the unit of program intervention is the clan or town cluster, necessitating the distinction between the community (clan or town cluster) unit of intervention and the town unit of observation.

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<sup>12</sup> It is important to note that the term “town” is synonymous with “village” in Liberian English, so the towns included in the study can have a very small population and/or lack other development that is commonly thought of as a definitional characteristic of a town in American English.

<sup>13</sup> Satellite settlements subsequently grew out of these towns, starting as outposts/bases from which to harvest forest resources and crops from farther out. These settlements eventually became towns of their own.

## EVALUATION DESIGN

The original evaluation plan was to conduct an impact evaluation in the form of a Randomized Control Trial (RCT) involving 45 treatment communities and 45 control communities. However, given the travel time to reach communities in River Gee and Maryland counties—8 to 10 hours between communities through thick forest and over dirt roads—the CLPP implementation team decided that randomization was not feasible due to logistical and budget concerns.

Once the decision was made not to conduct a “pure” RCT, treatment was assigned to towns randomly in Lofa county and block randomization was used in River Gee and Maryland counties. To complete block randomization, the CLPP program implementation team divided each county into four “quadrants” of towns based on population/community size and transportation logistics<sup>14</sup>. From these four quadrants, two were randomly selected as treatment areas and two as control areas. All randomization was completed in-country by the CLPP field team at SDI. Block randomization was implemented to avoid the selection of towns that were closer to roads, thereby promoting a more rigorous evaluation design.

The study design was therefore revised to use a Difference-in-Differences (DD) approach to determine the program’s impact comparing the changes in outcomes over time between 45 communities that are involved in CLPP and 45 communities that are not involved in CLPP. The DD approach represents the next best evaluation technique for analyzing the impact of the program using a rigorously defined counterfactual. Baseline data was collected in 2014 across the study sample.

In 2016, funding constraints prompted SDI to reduce the number of treatment communities from 45 to 23 by cutting communities from River Gee and Maryland counties. The reduced list of treatment communities was selected by SDI based on the following descending priorities:

1. **Level of interest:** Assessed through previous efforts by community (2014 to 2015)—community has shown interest in the project, has started the process already by selecting community animators<sup>15</sup> and an ICC;
2. **On-the-ground challenges:** Number of land related conflicts, degree of urbanization, rate of concessions;
3. **Accessibility:** How easy is it for the team to reach a community by car, bike, and footpath;
4. **Clustering:** How a group of communities are clustered to benefit from spillover.

Due to funding constraints, data will not be collected across all control towns in these counties from baseline, but only to a subset that are matched to treatment towns. Selecting control towns by matching on baseline characteristics was pursued to reduce the selection bias caused by the program’s purposeful selection of treatment sites after the quasi-randomization.

A further nine control communities were randomly selected to revisit at midline because of missing baseline data in nine treatment communities (clans or town clusters). All control communities were chosen from the original control quadrants to preserve the Intention to Treat (ITT) distinction and the associated quasi-randomization and to minimize the possibility of contamination through spillover from treatment to control communities. Please refer to Annex I (CLPP Baseline Report) for a more detailed description of the baseline data collection process and challenges. As such, the total sample size

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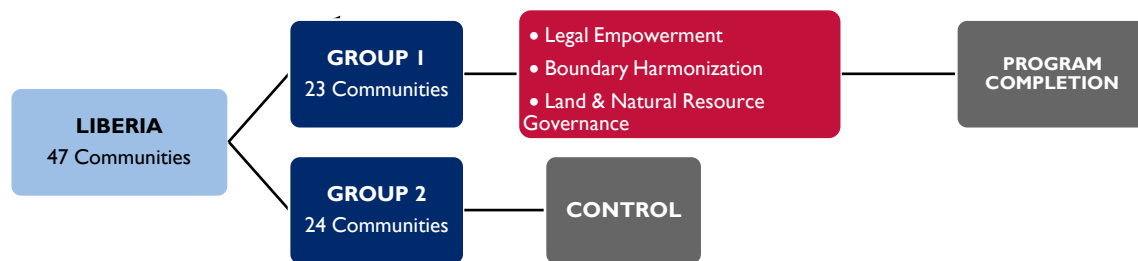
<sup>14</sup> One of these quadrants is located in Maryland: Maryland South Quadrant of Barrobo (borders River Gee and Grand Kru). Three quadrants are located in River Gee: the Center Quadrant (borders Ivory Coast and Grand Kru), the Northern-West Quadrant (borders Grand Gedeh and Sinoe), and the Eastern Quadrant (borders Ivory Coast and Maryland).

<sup>15</sup> Community Land Animators work closely with the facilitating organization and help lead each land protection activity.

decreased from 90 to 54 towns, which correspond to 41 clan clusters, and the evaluation was reclassified as a PE (instead of an impact evaluation) due to the associated losses in study power. Figure 3.1 illustrates the design of the midline PE of CLPP.

Matching was accomplished using the Match It package in R to select 12 control communities from the 34 control communities in River Gee and Maryland for which baseline data exists<sup>16</sup>. The following baseline and geospatial characteristics were used to match treatment observations to comparable controls:

- Ethnicity: 2=All Grebo; 1=Mixed (Grebo and non-Grebo); 0=All non-Grebo;
- Presence of investor: 0=No; 1=Yes;
- Presence of land dispute at baseline: 0=No; 1=Yes;
- Institutions and governance index<sup>17</sup>: 0=Weak; 1=Medium; 2=Strong;
- Quality of life index<sup>18</sup>: 0=Low; 1=Medium; 2=High;
- Distance to road (km);
- Distance to forest cover hot spot (km);
- Distance to mining concession (km);
- Distance to forestry concession (km);
- Population density (per km<sup>2</sup>).



**FIGURE 3.1—PROGRAM IMPLEMENTATION DESIGN**

<sup>16</sup> The statistics presented in this report are based on the information available to the evaluation team from SDI about treatment assignment. Because SDI has not to date collected GPS information about treatment areas, matching the baseline data to implementer data had to be completed based on town and clan name only, and may need to be updated if better information becomes available prior to midline data collection.

<sup>17</sup> The Institutions and Governance Index was created from a simple mean of three household survey scale variables that were collapsed to the community level: 1) leaders are trusted and honest, 2) leaders can conserve and protect our community land and forests, and 3) leaders can do patrols and punish rule breakers. These variables were chosen because they are on the same scale and can be interpreted together easily and because they get at several aspects of governance, like rule enforcement, resource conservation, and trust in leaders. Means for the communities were then grouped into three bins (weak, medium, strong) based on the value of the index.

<sup>18</sup> This Quality of Life index was created from six binary enumerator observation variables in the leader survey (has paved road, has health clinic, has secondary school, etc.).



# 4.0 DATA

## DATA SOURCES

Baseline and midline data collection utilize four primary data collection instruments: (1) household survey, (2) leader survey, (3) focus group protocol for women, youth, hunters, members of minority groups, and elders, and (4) leader key informant interview (KII) tool. The evaluation also relies on secondary data from project Monitoring and Evaluation (M&E) and geospatial data. All four sources contribute information toward answering research questions in each of the seven outcome families, which were introduced in the Introduction of this report. Specific indicators tied to each outcome family and their sources will be outlined in detail in Section 5 (Midline-only or cross sectional indicators), Section 6 (Qualitative analysis), and Section 7 (Panel indicators).

## QUANTITATIVE DATA SOURCES

The household and leader surveys are structured quantitative instruments approximately 45 minutes in length<sup>19</sup>. The midline leader survey also includes an open-ended qualitative module, which is discussed in more detail in the following sub-section. The evaluation team aims to conduct the household and leader surveys as a panel survey. This involves tracking the same respondents over time between the baseline, midline, and (if the evaluation secures funding for future rounds) endline data collection. The strategy for collecting this panel is contained in the “Attrition” sub-section of Section 8.

For the baseline data collection effort, the research team designed specific guidelines for selecting the sample of households and community leaders in the towns/town clusters. Based on power calculations at the design stage, it was determined that 15 households would be selected in each study village for the household survey<sup>20</sup>—stratified to target female-headed households, youth-headed households, and members of minority groups—as well as the 2–3 community leaders who would complete the leaders’ survey and the community diary survey<sup>21</sup>. These leaders include those historically responsible for community natural resource management such as the town chief, as well as women, youth, and minority leaders (where applicable). Households for the household survey were randomly selected following a standard protocol that involved making a simple map of the community and selecting respondents based on the size of each “quarter” or neighborhood (for more details, see Annex 1).

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19 Concerns about survey length and respondent fatigue have been expressed throughout the evaluation. At baseline, this resulted in truncated quantitative instruments that are insufficient to measure all outcomes of interest. In order to include more questions in the quantitative surveys at midline while assuaging concerns about survey length, the instruments were developed well in advance of midline data collection and pre-piloted in Liberia using electronic data collection, so that time stamps on the surveys could be analyzed by the research team and appropriate adjustments made to the surveys to ensure a length of 45 min. This pre-pilot of the household and leader surveys occurred in two towns in Margibi county, Liberia, in September 2016.

20 At baseline, the enumerators also interviewed the “most important” female, or the female who makes the most decisions, in each household. The evaluation lacks the funds to collect panel intra-household data, and at midline only heads of household (male and female) will be surveyed.

21 At baseline, this data was gathered through the administration of two separate instruments—the Leader Survey and the Community Diary, the latter of which was designed to be a high frequency data source, but repeated collection of this data was not feasible due to funding constraints. For the next round of data collection these instruments have been combined into a single Leader Survey that will be administered to all of the aforementioned leaders in each study town.

Baseline data was collected from February–July 2014 using electronic data collection methods and Pendragon software.<sup>22</sup> In the baseline sample, there are an average of 13 households in each village, with a mean of 4 female-headed households, 4 youth-headed households and 5 households headed by members of minority groups.

Midline data will be collected using SurveyCTO, a flexible computer-assisted interviewing platform. Data collection will be subject to a full complement of data quality control measures to identify and resolve data quality issues in real time, including spot checks by supervisors<sup>23</sup>, site visits by field managers<sup>24</sup>, and weekly back checks by the evaluation team<sup>25</sup>.

Once all midline quantitative data is collected from the field, it will be compiled together with the baseline data into a single household dataset and a single leader dataset, de-identified, cleaned, and labeled to produce a final STATA dataset and csv file that will be submitted to USAID’s Data Development Library and made available to the public through USAID’s LandLinks Data Hub. Table 4.1 below provides the household, town and clan sample sizes for the midline data collection (and cross-sectional analysis)<sup>26</sup>.

**TABLE 4.1—SAMPLE SIZES FOR MIDLINE DATA COLLECTION**

county	Total N (Households)	Total towns	Treatment			Control		
			N (Households)	Towns	Communities (Clans or town clusters)	N (Households)	Towns	Communities (Clans or town clusters)
Lofa	270	18	165	11	3	105	7	3
Maryland	165	11	165	11	10	0	0	0
River Gee	375	25	150	10	10	225	15	15
Total	810	54	480	32	23	330	22	18

22 Data collection took place in River Gee and Maryland counties from February–March of 2014. Due to programming and upload errors with the electronic data collection, over half of the quantitative data collected during the first week of the baseline project was lost. This required a ‘recollect’ of the lost data in Lofa county, which was completed in mid-July 2014. Given the complications with Pendragon, the evaluation team has switched to SurveyCTO software for subsequent data collection and does not anticipate the same degree of challenges for future waves of data collection. Please see Annex I (CLPP Baseline Report) for a detailed description of the baseline data collection process and challenges.

23 Each enumerator will be spot checked by their supervisor a minimum of five times each week, and one of those times the supervisor will be present for the entire interview. Spot checks have an accompanying ERC-designed checklist through which supervisors score the enumerator on a scale from 1-5 on their surveying technique, including the informed consent process, probing ability, and relationship with the respondent.

24 In addition to supervisor checks, the field manager randomly visits each team at a survey site once a week to observe the enumerators and supervisors and confirm compliance to survey methodology. Feedback from the field manager and supervisors is continuously used to improve enumerator performance and discourage data falsification.

25 Finally, the most thorough checks are back checks conducted by the ERC Country Coordinator. These checks are conducted on 100% of all household surveys using SurveyCTO, and results are compiled and shared with the survey firm daily for the first two weeks, then weekly in the remaining weeks. The back checks compare 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, or a low average number of rows completed on each roster.

26 Nine clans are missing baseline data and will be excluded from panel analysis.

## QUALITATIVE DATA SOURCES

The evaluation collects two types of qualitative data: focus group discussions (FGDs) with members of subgroups of interest and semi-structured KIIs<sup>27</sup> with town leaders. The qualitative instruments serve five primary purposes:

1. To add a social context to ground the quantitative data—including i) community (clan or town cluster) self-identification, and ii) social relationships between key subgroups;
2. To triangulate responses from the household and the leader surveys, particularly about sensitive topics, like land disputes and governance;
3. To elucidate processes and mechanisms linking CLPP interventions to outcomes of interest;
4. To add depth and nuance to the overall research effort; and
5. Because of the deliberate selection of subgroups of interest to the evaluation, the focus groups are another key data source for examining heterogeneous treatment effects.

At baseline, the qualitative data collection occurred in a subset of the towns involved in the evaluation (9 towns). FGDs were 90–120 minutes in length, and KIIs were 30 minutes in length. For the next round of data collection, the evaluation is expanding this qualitative data collection to all units of observation. FGD will be 60 minutes in length, and KII will be 15 minutes in length (integrated as a module within the leader quantitative survey). As part of midline data collection, the evaluation will conduct 162 FGDs—three discussions in each study town—and 162 qualitative interview modules with leaders.

The FGD sampling plan is designed to capture the experiences of a variety of subgroups. There are five subgroups of interest: women, youth, elders, members of minority groups (where applicable), and hunters (where applicable<sup>28</sup>). All towns will receive a FGD with women and with youth. In towns with a minority population of sufficient size, the third FGD will be with members of minority groups. In towns where minority groups have smaller presence, the third FGD will be with hunters. If a town has neither a minority community nor a sizable population of hunters, the third FGD will be with elders.

## SECONDARY DATA

### ERC M&E DATA

The evaluation team designed two rapid assessment M&E data collection tools in July 2016, to obtain additional information about CLPP implementation from SDI field staff. The first round of data collection with these tools will take place in winter 2016-17. The M&E data collection tools consist of a short structured survey and a short open-ended qualitative questionnaire. This information will be used to provide context information to better interpret results and allow the study to investigate variations in implementation and community characteristics.

The quantitative survey collects basic community (clan or town cluster) and implementation information, including the capacity and program engagement of leaders and community groups, as perceived by field staff. This will allow the midline analysis team to more accurately analyze and interpret reasons for

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<sup>27</sup> At baseline these occurred as standalone interviews in the nine qualitative communities. For the next round of data collection, this interview will immediately follow the quantitative Leader Surveys in all study communities.

<sup>28</sup> In communities where hunting continues to an important source of livelihood (more common in the Southeastern regions of Liberia, including River Gee and Maryland counties) hunters play a specific role in community governance and in particular in natural resource governance and access to forest resources.

impact variation. It also helps the research explain how program implementation differences might moderate effects.

The qualitative tool is designed to elicit detailed description of implementation activities, including information about selection process into the community groups who drove different stages of the program (community animators, ICC, boundary team<sup>29</sup>, etc.), the presence and possible explanations for variations in program implementation, and open-ended feedback on the program. This description will be used, for example, for stronger identification of selection factors for the CLPP intervention that the evaluation team will account for in the midline analysis.

## CLPP M&E DATA

The evaluation team is gathering the data collected throughout project implementation by Namati and SDI and supplementing this data with the ERC M&E data, described above. This implementer data includes internal M&E tools and written/digital products that are created as part of the program. Our ability to measure some outcomes of interest (e.g., presence of protections for vulnerable groups in written bylaws) relies on the availability of output indicators that will be captured by the implementing partner through their M&E system. Namati/SDI uses two main types of M&E tools:

1. **Activity logbooks** provide a qualitative description and assessment of program meetings and activities, including stories of impact and quotes from community members, for clusters of towns (for large clans) and for the entire clan (in small clans). Based on the initial analysis of the Lofa county activity logbook, the information demonstrates fairly strong similarity in implementation processes across the different towns, but also highlights some potentially important differences, such as prior training in some communities by SDI in community land protection that was interrupted by the Ebola crisis in 2014. The logbook data may be useful for midline results interpretation and to provide additional rich contextual information around implementation processes in the program area.
2. **Stage assessments** are specific to each stage of the community land protection approach and are completed by field staff after the conclusion of each stage of the program. These questions reflect on all of the activities completed during the stage and prompt review by field staff of products created by the community (for example, various drafts of bylaws, valuation worksheet, etc.). These assessments, especially the content review of program products such as the bylaws, are an important detailed record of the progress made in each community and an important source of subjective assessment by field staff, who are most knowledgeable about the specific program context in each community.

Additionally, important products are created during the course of CLPP that the evaluation will incorporate into analysis:

1. **Written bylaws** are a key product generated during Stage 2 of CLPP (Strengthening community governance). Obtaining these documents allows the research team to use them as a primary source of data and analyze differences in their content between communities.
2. Initial **sketch** and then **final boundary maps** are key products generated during Stage 3 of CLPP (Harmonizing boundaries and demarcating lands). Obtaining these documents allows the research team to use them as a primary data source. In addition, these maps may also augment the geospatial

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<sup>29</sup> The Boundary Team meets with the community's neighbors to discuss boundaries. The team may include traditional leaders, youth, women, elders, and Community Land mobilizers (animators).

analysis that can be undertaken by the evaluation team, if the data produced is of sufficiently high quality.

As of this plan's writing, the evaluation team is in the process of obtaining this M&E information. The evaluation team received the following datasets or information from Namati and SDI from June-December 2016:

- Overview of Namati M&E forms
- SDI-CLPP Process flowchart
- Blank M&E forms (logbooks and Stage assessments)
- Lofa county activity logbook
- Sketch maps<sup>30</sup> (images)

The evaluation team has requested that the following datasets or information be shared when they become available, which is expected to be early 2017:

- River Gee and Maryland county activity logbooks
- Draft bylaws Initial stage assessments (Stage I)

The evaluation team is also interested in receiving the following datasets or information whenever they become available, recognizing that this may not occur until after midline data collection:

- Adopted bylaws
- Final boundary maps<sup>31</sup> (GIS files, associated metadata and attributes, and methodology documentation)
- Final stage assessments (Stages II, III)

### **NAMATI/SDI SPOT CHECK M&E**

Finally, the evaluation team will integrate the Namati/SDI Spot Check M&E form into the next round of data collection, administering this Namati/SDI Spot Check M&E tool to a subsample of households in each treatment town. This data will primarily be used by Namati to understand specific changes of interest to the organization in treatment households' beliefs and perceptions about natural resource conditions and community self-identification.

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<sup>30</sup> This is the product of the initial boundary mapping exercise.

<sup>31</sup> This is the final, digitized boundary map that is produced.

# 5.0 MIDLINE ONLY INDICATORS AND ANALYSIS

As described in Section 1 above, the seven main outcome families of the CLPP evaluation include: tenure security, land governance, conflict, empowerment, land and natural resource conservation and community development, livelihoods, and differential treatment impacts for subgroups of interest. Cross-sectional analysis on indicators from each of these outcome families will be conducted on the midline data. All types of indicators (cross-sectional and panel) have been divided into four categories, ordered according to their importance for answering the evaluation's central questions:

- Primary indicators: Central indicators used to assess program impact on outcomes;
- Secondary indicators: Other indicators analyzed to further assess program impact;
- Mechanism indicators: Elucidate hypothesized mechanisms for change in key indicators; and,
- Context indicators: Provide additional information about conditions related to outcomes.

Please refer to Annex 2 (CLPP PE Other Indicators) for more information about these indicator variables.

## MIDLINE ONLY DEPENDENT VARIABLES

### TENURE SECURITY

Outcome Family 1, Tenure Security, is constructed primarily through a series of variables pertaining to the overall perceived potential for land expropriation and reallocation by any party. Indicators from Outcome Family 1 will be used to test the following hypotheses:

- *H.1. Communities receiving the CLPP intervention will perceive different levels of tenure security over communal lands and natural resources in their community.*
- *H.2. Households in communities receiving the CLPP intervention will perceive different access rights, levels of tenure security, and protection of land their household customarily uses.*
  - *H.2A. Female-headed, youth-headed, and minority households in communities receiving the CLPP intervention will perceive different access rights, levels of tenure security, and protection of land their household customarily uses.*

Midline-only variables used in measuring tenure security are indicators of perceived encroachment threat and instances of expropriation that are disaggregated by the actor, or source, threatening encroachment on communal land and by communal land type<sup>32</sup> (e.g., town land, community forest, or

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<sup>32</sup> We ask about these types of property separately because different rules and regulations govern each type. We hypothesize that in some towns there may be more (or less) pressure on different kinds of property and that the program may have different effects on changing norms around natural resource management by property type. If we do not separate out these different types of property, it is possible that successful changes to governance for one type of property and less change for another might not be identified and instead be (incorrectly) assumed to be evidence for no change as a result of the program.

Three of the property types are communal. The fourth (household farmland) is individual, although it is perhaps best described as a hybrid type. In many towns, household farmland is actually held communally but distributed or "given" to individual households at different intervals; the level of "privatization" varies. In addition, many of the key questions in the debate about promoting individual property rights versus protecting communal structures centers around economic development at the household level. As a result, we want to capture some

communal farmland). Outcome Family I is measured by the following midline-only primary indicators at the *household* level:

- TS-1: Confidence in household ability to access and use household farmland and resource assets, as measured by length of time farmland is left fallow (index)
- TS-2: Frequency of loss of household rights to communal land (index)
- TS-3: Perceived risk of encroachment on communal land, among households (index)

Outcome Family I is measured by the following midline-only secondary indicator at the *community* level:

- TS-4: Perceived risk of encroachment on communal land by government or investors (index)

Outcome Family I is examined by the following midline-only context indicators at the *community* level:

- TS-5: Perceived risk of encroachment on communal land, among households (index)
- TS-6: Loss of local user rights to use and access communal land and natural resources, as reported by leaders (index)
- TS-7: Aggregated loss of local user rights to use and access communal land and natural resources, as reported by households (index)
- TS-8: Frequency of unauthorized expropriation of forest land by outsiders or powerful insiders, as reported by leaders
- TS-9: Frequency of unauthorized expropriation of forest land by outsiders or powerful insiders, as reported by households
- TS-10: Community land documentation

Other variables, such as the component variables of indexes, will undergo descriptive analysis and provide context for the findings on the indicators described above. Outcome Family I is examined by the following descriptive and context variables:

- TS-11: Frequency of loss of household rights to communal land (disaggregated by land type)
- TS-12: Perceived risk of encroachment on communal land, among households (disaggregated by land type)
- TS-13: Perceived risk of encroachment on communal land, among leaders (disaggregated by actor)
- TS-14: Perceived risk of encroachment on communal land, among households (disaggregated by actor)
- TS-15: Loss of local user rights to use and access communal land and natural resources, as reported by leaders (disaggregated by land type)
- TS-16: Loss of local user rights to use and access communal land and natural resources, as reported by households (disaggregated by land type)
- TS-17: Change in size of community land (disaggregated by land type)

## LAND GOVERNANCE

Outcome Family 2, Land Governance, will be assessed through variables measuring incidence of land management meetings and household participation, overall household perceptions of equity in land allocation, the existence of written bylaws regulating land use, and the election of a Land Management

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measures of household level property rights in order to speak to these debates and capture any spill over from the program that focuses more specifically on communal land.

Committee to oversee land issues. Indicators from Outcome Family 2 will be used to test the following hypotheses:

- *H.3. Communities receiving the CLPP intervention will have different local land governance.*
  - *H.3A. Communities receiving the CLPP intervention will have a different likelihood of having written bylaws governing communal lands and natural resource use, and different community-wide knowledge and perceived transparency over these rules.*
  - *H.3B. Communities receiving the CLPP intervention will have different governance representation of women, youth and minority group members.*
- *H.4. Households in communities receiving the CLPP intervention will have different perceptions of local land governance.*
  - *H.4A. Households in communities receiving the CLPP intervention will have different perceptions of the transparency, accountability, and representativeness of legal and customary governance institutions.*
  - *H.4B. Households in communities receiving the CLPP intervention will have different knowledge and awareness of written bylaws governing communal lands and natural resource use, and different awareness and perceived transparency over these rules.*
  - *H.4C. Female-headed, youth-headed, and minority households in communities receiving the CLPP intervention will have different governance participation.*

The primary midline-only variables used to measure Outcome Family 2 pertain to land allocation practices and the perception of and participation in specific activities by households and/or leaders. Outcome Family 2 is measured by the following primary midline-only indicators at the *household* level:

- G-1: Change in household trust in village leaders involved in land and natural resource governance (fairness)
- G-2: Changes in household perception of transparency in decision-making processes, including decisions with broad local understanding and agreement (specific to negotiations with investors)

Outcome Family 2 is measured by the following secondary midline-only indicators at the *community* level:

- G-3: Land governance index

Outcome Family 2 is measured by the following secondary midline-only indicators at the *household* level:

- G-4: Change in household perceived capacity of village and other local leaders to manage communal natural resources sustainably (specific to poor)
- G-5: Level of monitoring, enforcement, and sanctions for communal land and forest resources

Outcome Family 2 is examined by the following midline-only mechanism indicators at the *community* level:

- G-6: Change in levels of household voice and participation in communal lands and natural resource management, local planning, and decision-making (specific to negotiations with investors)

Descriptive and context midline-only variables pertain to actors in decision making about communal land and natural resources and the presence of unwritten (as opposed to written) rules about land and



natural resources. Outcome Family 2 is examined by the following descriptive and context variables at the *community* level:

- G-7: Change in aggregate household perceived capacity of village and other local leaders to manage communal natural resources sustainably (specific to land conflicts)
- G-8: Presence of women, youth and minorities in local leadership positions besides subgroup leader
- G-9: Community members have voice and participation in communal lands and natural resource management, local planning, and decision-making (specific to negotiations with investors)
- G-10: Land allocation practices (disaggregated by land type)
- G-11: Presence of unwritten rules governing community land and natural resources (for outsiders)
- G-12: Actors in decision making about access to and management of communal land and natural resources (disaggregated by land type)

Outcome Family 2 is examined by the following descriptive and context variables at the *household* level:

- G-13: Actors in decision making about access to and management of communal land and natural resources (disaggregated by land type)

## LAND CONFLICT

Outcome Family 3, Land Conflict, is evaluated through variables counting the number of communities and households which have experienced a land conflict and the severity of those conflicts. Indicators for Outcome Family 3 will be used to test the following hypotheses:

- *H.5. Communities receiving the CLPP intervention will have different community-wide incidence of land conflicts.*
- *H.6. Households in communities receiving the CLPP intervention will experience a different number of land conflicts.<sup>33</sup>*
  - *H.6A. Female-headed, youth-headed, and minority households in communities receiving the CLPP intervention will experience a different number of land conflicts.*

The midline-only variables used to measure Outcome Family 3 are midline-only indicators of perceived conflict severity and satisfaction with the conflict resolution process. Conflict prevalence as reported by households is also a midline only indicator, as this data was not collected from households at baseline. Outcome Family 3 is measured by the following secondary midline-only indicators at the *household* level:

- LC-1: Number of land and natural resource-based conflicts that involve households
- LC-2: Household satisfaction with the process to resolve land and natural resource conflicts

Outcome Family 3 is examined by the following midline-only context indicators at the *community* level:

- LC-3: Prevalence of land and natural resource-based conflicts (disaggregated by land type)
- LC-4: Prevalence of severe conflicts
- LC-5: Leader satisfaction with the process to resolve land and natural resource conflicts

Outcome Family 3 is examined by the following midline-only context indicators at the *household* level:

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<sup>33</sup> It is possible that in the short term (at midline) conflicts may increase due to the boundary harmonization process, but this is a key program goal. The evaluation team will use qualitative data to understand the processes and mechanism observed during midline data collection.

- LC-6: Number of conflicts involving women, youth and minority group members
- LC-7: Number of severe conflicts that involve households

## EMPOWERMENT

Outcome Family 4, Empowerment, measures perceptions of community capacity to negotiate with outside actors. Indicators for Outcome Family 4 will be used to test the following hypotheses:

- *H.7. Communities receiving the CLPP intervention will have different capacity to negotiate with government actors and outside investors in the instance of a proposed land concession.*
- *H.8. Households in communities receiving the CLPP intervention will perceive different capacity of local leaders to negotiate with government actors and outside investors in the instance of a proposed land concession.*
  - *H.8A. Female-headed, youth-headed, and minority households in communities receiving the CLPP intervention will have different levels of participation in negotiations with government actors and outside investors.*

Secondary midline only indicators pertain to knowledge and awareness of Liberian laws. Outcome Family 4 is measured by the following secondary midline-only indicators at the *household* level:

- E-1: Knowledge of laws regarding decentralized lands and natural resource management
- E-2: Knowledge of Liberian property law for women

Outcome Family 4 is examined by the following context indicators at the *community* level:

- E-3: Receipt of benefits by community from investor activity (each active investor)
- E-4: Knowledge of value of communal forest land (Ranking)

Outcome Family 4 is examined by the following midline-only context indicators at the *household* level:

- E-5: Knowledge of value of communal forest land (Ranking)

## NATURAL RESOURCE CONSERVATION AND COMMUNITY DEVELOPMENT

Outcome Family 5, Natural Resource Conservation and Community Development, is evaluated through: variables counting the number of communities and households which have engaged in land improvements on communal and household farmland; and indicators of shared resource quality. Indicators for Outcome Family 5 will be used to test the following hypotheses:

- *H.9. Communities receiving the CLPP intervention will have different levels of natural resource conservation and community land development.*
  - *H.9A. Communities receiving the CLPP intervention will have a different level of development in communal lands and resources.*
  - *H.9B. Communities receiving the CLPP intervention will have different natural resource conditions, including increased availability of communal land resources and reduced degradation of communal lands and resources.*
- *H.10. Households in communities receiving the CLPP intervention will report different levels of natural resource conservation and community land development.*

- *H.10A. Households in communities receiving the CLPP intervention will contribute different amounts to community development in communal lands and resources.*
- *H.10B. Households in communities receiving the CLPP intervention will perceive different levels of natural resource conditions, including increased availability of communal land resources and reduced degradation of communal lands and resources.*
- *H.10C. Heterogeneous effects in amount of community development by subgroups and perception of natural resource conditions.*

The midline-only variables used to measure Outcome Family 5 provide information about land investment activities in the study area. Outcome Family 5 is measured by the following primary midline-only indicators at the *household* level:

- NRC-1: Participation index

Outcome Family 5 is measured by the following secondary midline-only indicators at the *household* level:

- NRC-2: Household participation in investment in communal land and natural resources (disaggregated by type of land and/or activity)

Outcome Family 5 is examined by the following midline-only context indicators at the *community* level:

- NRC-3: Level of, frequency of and community participation in investment in communal land and natural resources (disaggregated by land type)
- NRC-4: Presence of plantations / commercial agriculture

## **LIVELIHOODS**

Outcome Family 6, Livelihoods, is evaluated using secondary indicators that measure household socio-economic standing. The household's standing will be evaluated based on household assets and the changes in those assets since baseline. Outcome Family 6 is intended to test the following hypothesis:

- *H11. Households in communities receiving the CLPP intervention will have different livelihood and welfare outcomes.*

The midline-only indicators used to measure Outcome Family 6 provide information about asset holdings and earnings. Outcome Family 6 is measured by the following secondary midline-only indicators:

- L-1: Size of household land (disaggregated by land type)
- L-2: Income/prevalence of poverty and overall welfare (disaggregated by activity)

## **SURVEY EXPERIMENTS**

In order to assess the perspectives of survey respondents on several key issues, we also include four survey experiments in the midline survey:

- SE-1: Perception of value of communal forest land
- SE-2: View of Liberian property reform for women
- SE-3: Assessment of capacity of authorities to enforce investor accountability
- SE-4: Assessment of Land Rights Policy / Land Rights Act

The experiments follow a priming/endorsement experiment logic whereby survey respondents are randomly divided into two groups during the survey. Each group receives one version of the experimental question set and differences between average group answers provide information about validity of the prime or the endorsement (as applicable) embedded in the experiment.

The first experiment explores how individuals value their individual and community property and whether priming individuals to consider the sacred value of their property shifts their valuation of it. Survey respondents are randomly divided into treatment group A that received the sacred prime prior to the valuation questions and control group B that receives the sacred prime after the valuation prime.

The second experiment explores whether support for new land policies is increased or decreased by the focus on women's rights. Survey respondents in control group A are asked whether they support new land policies that increase the control that communities have over their land. They are compared with survey respondents in treatment group B who are asked about their support for these policies, including the fact that they include giving women and men equal rights.

The third experiment explores respondents' perceptions of the capacity of different authorities by measuring which type of land authorities are believed to be able to best monitor investors who break laws meant to protect natural resources. Survey respondents in control group A are asked about whether new initiatives to monitor investors will be successful. Survey respondents in treatment group B are asked whether new initiatives to monitor investors that involve local authorities will be successful. Survey respondents in treatment group C are asked whether new initiatives to monitor investors that involve national authorities will be successful.

The fourth experiment explores whether discussion of tenure security on communal land modifies perceptions about the Land Rights Policy and Land Right Act. Survey respondents are randomly divided into treatment group A that received the series of tenure security questions prior to the questions on the Land Rights Policy / Land Rights Act and control group B that receives the tenure security series after the Land Rights Policy / Land Rights Act prime.

## **INDEPENDENT VARIABLES—TREATMENT INDICATOR**

An indicator variable that equals 1 was assigned to towns assigned to receive the CLPP intervention. An indicator variable that equals 0 was assigned to those towns not assigned to receive the CLPP intervention.

## **CONTROL VARIABLES**

We control for the following characteristics in our cross-sectional regression models.

### **VILLAGE LEVEL CONTROL VARIABLES**

- C-1: Community land types
- C-2: Access/distance to markets/major urban centers (continuous - travel time in hours)
- C-3: County fixed effects
- C-4: Overlap with other similar projects currently or in the past (binary)
- C-5: Presence of Ebola (continuous - distance to treatment center in km)

Additionally, some control variables were accounted for by matching treatment towns to comparable control towns, as described in Section 3. These characteristics are:

- C-6: Strength/quality of management of current natural resource management regime (index)
- C-7: Prior land conflict (binary)
- C-8: Land concession history in the area (continuous – distance to concession in km)
- C-9: Presence of investor at baseline (binary)
- C-10: Access to roads/road density (market integration) (continuous – distance to road in km)
- C-11: Population density

## HOUSEHOLD LEVEL

- C-12: Ethnicity (1=Member of majority ethnic group, 2=Member of minority ethnic group)
- C-13: Household size (continuous)
- C-14: Educational attainment (binary – has formal education)
- C-15: Age (continuous)
- C-16: Gender (1=Male, 2=Female)
- C-17: Socio-economic status (binary – relative poverty)
- C-18: Level of dependence on communal lands natural resources (binary – primary livelihood activity involves communal land and natural resources)
- C-19: Household land documentation (binary)

## MIDLINE ONLY ANALYSIS

The three equations below represent our household and community specifications of interest for the cross-sectional analysis of the midline-only outcome indicators and survey experiments described above at the household and community level.

The regression specification for household outcomes is as follows:

$$[4a] \quad Y_{ij} = \beta_0 + \beta_1 T_{ij} + B_2 X_{ij} + \phi_d + u_{ij}$$

where  $Y_{ij}$  is the outcome measure of household  $i$  in village  $j$ .  $T_{ij}$  is the treatment dummy for CLPP in comparison to the control group.  $\beta_1$  will provide the regression estimate for CLPP program respondents versus those in the control group.  $X_{ij}$  is a vector of control variables, described above, and included imbalanced covariates.  $\phi_d$  is county-fixed effects, and  $u_{ij}$  are robust standard errors clustered at the village level, using Huber-White sandwiched standard errors (Lin et al., 2013).

We will also estimate equation 1b below for outcomes measured at the community level. The parameters of the equation are the same as equation 1a, with the exception of household measures  $i$  and the inclusion of standard errors clustered at the village level.

$$[4b] \quad Y_{ij} = \beta_0 + \beta_1 T_{ij} + B_2 X_{ij} + \phi_d + u_{ij}$$

## HETEROGENEOUS TREATMENT EFFECTS

Based on the program theory and literature, we expect to find variation in the treatment effect across certain sub groups, and where applicable, we will test outcomes for heterogeneous treatment effects. This analysis comprises the final outcome family—outcome family 7.

Our household sub groups of interest include:

- Household head gender (male-headed households versus female-headed households);
- Household baseline wealth status (continuous asset-based wealth index, and lowest quartile vs. others);
- Age of household head at baseline (continuous, and under 35 vs. others); and
- Minority status of household head.

To test for heterogeneous treatment effects across these subgroups, we estimate the following equation:

$$[3] \quad Y_{ij} = \beta_0 + \beta_1 T_{ij} + \beta_2 T_{ij} * Het_{ij} + \beta_3 Het_{ij} + \beta_4 Y_{ij}^0 + B_5 X_{ij} + \phi_d + u_{ij}$$

$T_{ij}$  represents the treatment dummy of interest.  $Het_{ij}$  is the indicator variable for the subgroup of interest.  $\beta_2$  is the marginal increase in treatment effect in villages in the subgroup under evaluation. All other parameters are the same as those described above for equation [1a].

As with the main effects analysis described above, we will present the results of specifications for heterogeneous effects with and without controls for ITT and Treatment on the Treated (TOT).

# 6.0 QUALITATIVE ANALYSIS

The evaluation's quantitative hypotheses and indicators will be used to guide and focus the analysis of the data obtained from the leader survey qualitative module and FGDs. Analysis will involve reading and re-reading the transcripts of the exercises and carefully coding and grouping the data in a consistent manner according to similar or related pieces of information presented, allowing comparison of responses and identification of common themes and trends. Topics of particular interest include:

- Local perceptions of tenure security,
- Details of participation by different groups in land governance and negotiations with investors,
- Prevalence of land disputes, and
- Descriptions of how the community and town leaders collaborate with district, county and national government officials.

The evaluation team will compile transcripts, code similar responses into a set of themes, and define codes for each of the key themes and subtopics we anticipate. The evaluation team has developed an initial coding scheme for the qualitative data during pre-analysis planning, drawing on the hypothesized outcomes and review of the baseline data. As such, the coding scheme will align with the evaluation research questions and quantitative indicators which are described in detail in Sections 5 and 7. Proposed themes are outlined in Table 6.1 (below).

**TABLE 6.1—PROPOSED QUALITATIVE THEMES AND SUBTOPICS**

No.	Theme	Subtopic
1a.	Women's land rights	Content
1b.		Impression of response
2a.	Minorities' land rights	Content
2b.		Impression of response
3a.	Governance	Practices
3b.		Rules
3c.		Punishment
3d.		Authorities
3e.		Community involvement
4a.	Investor relations	Investor scenario <sup>34</sup>
4b.		Presence of investors or NGOs
4c.		Benefit sharing
5a.	Tenure security	Change in perceived tenure security
5b.		Land expropriation
5c.		Conflict
6.	Self-identification and community definition	-
7.	Change in relationship with district/county/national government officials	-

<sup>34</sup> Focus group and interview respondents were presented with an "investor scenario" about a rubber company that promised to build a school and a clinic in a community if allowed to operate there and then failed to do so. Respondents were then asked to discuss what the fictional village should do to remedy the situation.

After the midline qualitative data is collected, the evaluation team will review the themes and codes, along with initial transcripts, and refine the coding scheme as necessary to ensure they adequately capture the themes and topics being collected during this round of data collection.

Two evaluation team members will be trained to code the qualitative data. To ensure reliability, both team members will code an initial transcript and compare codes to identify and resolve discrepancies. In addition, one team member will review a subsample of coded data to check reliability as coding proceeds.

Thematic coding will be accomplished manually in Microsoft Excel in a single master coding repository to ensure consistency and ease of reference. Quotations will be selected from the transcripts to illustrate the findings with simple, focused pieces of information representing key themes. Because qualitative data is being collected across all study sites, the evaluation team will also explore coding appropriate elements of the qualitative data into quantitative community-level variables, tabulating descriptive statistics on these measures, and perhaps adding these variables to the cross-sectional or DD models.

This process will allow the evaluation team to organize and compare similar and related pieces of information in the qualitative data and to identify key themes and trends across the project area. The analysis will therefore evaluate progress made on qualitative only indicators, add depth and social context to inform the interpretation of the results of the empirical analysis, and shed light on the multiplicity of perspectives and potential mechanisms surrounding outcomes of interest to the evaluation.



# 7.0 PANEL INDICATORS AND ANALYSIS

## PANEL DEPENDENT VARIABLES

A DD method will be applied to panel indicators from the seven outcome families for clusters where observations from both baseline and midline exist.

As introduced in Section 5, there are 16 hypotheses across the seven outcome families that this evaluation seeks to answer, and all types of indicators (cross-sectional and panel) have been divided into four categories, ordered according to their importance for answering the evaluation's central questions (Primary, Secondary, Mechanism, and Context)<sup>35</sup>. Please refer to Annex 3 (CLPP PE Panel Indicators) for more information about these indicator variables.

Tenure Security Outcome Family I is measured by the following primary panel indicators at the *household* level:

- TS-18: Perceived risk of encroachment on communal land, among households (index)
- TS-19: Change in HH perception of bundle of land rights, including exclusion rights, land access, and land management (index)

Secondary panel variables used in measuring tenure security include the component variables used to make the above indices and practices and perceptions of land rights. Outcome Family I is measured by the following secondary panel indicators at the *community* level:

- TS-20: Perceived risk of encroachment on communal land, among leaders and households (index)

Outcome Family I is measured by the following secondary panel indicators at the *household* level:

- TS-21: Confidence in household ability to access and use household farmland and resource assets
- TS-22: Change in perception of informal/customary rights over forest resources or communal land

Outcome Family I is examined by the following context panel indicators at the *community* level:

- TS-23: Change in size of community land (log)
- TS-24: Perceived risk of encroachment on communal land by neighbors, among leaders and households (index components)
- TS-25: Perceived risk of encroachment on communal land by elites/big people, among leaders and households (index components)
- TS-26: Perceived risk of encroachment on communal land by neighboring clan, among leaders and households (index components)

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<sup>35</sup> Please see Section 5 for a more detailed description of evaluation hypotheses and indicator types.

- TS-27: Perceived risk of encroachment on communal land by outside corporation, among leaders and households (index components)
- TS-28: Change in perception of informal/customary rights over forest resources or communal land.
- TS-29: Loss of local user rights to use and access communal land and natural resources, as reported by leaders
- TS-30: Loss of local user rights to use and access communal land and natural resources, as reported by households

Outcome Family 1 is examined by the following context panel indicators at the *household* level:

- TS-31: Perceived risk of encroachment on communal land by neighbors, among leaders and households (index components)
- TS-32: Perceived risk of encroachment on communal land by elites/big people, among leaders and households (index components)
- TS-33: Perceived risk of encroachment on communal land by neighboring clan, among leaders and households (index components)
- TS-34: Perceived risk of encroachment on communal land by outside corporation, among leaders and households (index components)

## LAND GOVERNANCE

Outcome Family 2 is measured by the following primary panel indicators at the *community* level:

- G-14: Land governance index

Outcome Family 2 is measured by the following primary panel indicators at the *household* level:

- G-15: Land governance index

Outcome Family 2 is measured by the following secondary panel indicators at the *household* level:

- G-16: Change in household perception of accountability of community leaders and decision makers over land and natural resources
- G-17: Change in level of household satisfaction with land governance processes in the community
- G-18: Change in household trust in village leaders involved in land and natural resource governance (index)
- G-19: Change in household perceived capacity of village and other local leaders to manage communal natural resources sustainably (index)
- G-20: Level of monitoring, enforcement, and sanctions for communal land and forest resources
- G-21: Changes in household perception of transparency in decision-making processes, including decisions with broad local understanding and agreement (index)

The mechanism and descriptive panel variables used to examine Outcome Family 2 pertain to certain outputs of CLPP (such as bylaws and the LMC), the level of success in rule monitoring and enforcement, and community participation in land governance. Outcome Family 2 is examined by the following mechanism panel indicators at the *community* level:

- G-22: Presence of written bylaws governing customary/traditional land (mechanism)
- G-23: Presence and strength of Land Management Committee (mechanism)
- G-24: Change in leaders' knowledge of communal land boundaries (mechanism)

- G-25: Leader knowledge of Liberian property law for women (mechanism)

Outcome Family 2 is examined by the following mechanism panel indicators at the *household* level:

- G-26: Change in levels of household voice and participation in communal lands and natural resource management, local planning, and decision-making (index)
- G-27: Participation of women, youth and minority leaders and community members in negotiations with government actors and outside investors
- G-28: Perceived level of equity for women and other vulnerable groups in the receipt of benefits from communal lands and natural resources
- G-29: Household awareness of written bylaws' existence
- G-30: Household knowledge of Liberian property law for women

Outcome Family 2 is examined by the following context panel indicators at the *community* level:

- G-31: Level of monitoring, enforcement, and sanctions for communal land and forest resources (index)
- G-32: Existence of community meetings about communal land and natural resources
- G-33: Change in aggregate household perception of accountability of community leaders and decision makers over land and natural resources
- G-34: Change in aggregate level of household satisfaction with land governance processes in the community
- G-35: Change in aggregate level of household trust in village leaders involved in land and natural resource governance (index)
- G-36: Change in aggregate household perceived capacity of village and other local leaders to manage communal natural resources sustainably (index)
- G-37: Perceived level of equity for women and other vulnerable groups in the use and access of communal lands and natural resources (index)

Outcome Family 2 is examined by the following context panel indicators at the *household* level:

- G-38: Actors in decision making about access to and management of communal land and natural resources

## LAND CONFLICT

Outcome Family 3 is measured by the following secondary panel indicator at the *community* level:

- LC-8: Prevalence of land and natural resource-based conflicts

Outcome Family 3 is not measured through panel analysis at the *household* level because household-level indicators of conflict were not asked at baseline due to concerns about the sensitive nature of the topic.

The descriptive or context panel variable used to examine Outcome Family 3 relates to the number of land conflicts that become violent. Outcome Family 3 is examined by the following context indicator at the *community* level:

- LC-9: Prevalence of land and natural resource-based conflicts that lead to violence

## EMPOWERMENT

The secondary panel variables used to measure Outcome Family 4 are indicators of knowledge of Liberian land laws. Outcome Family 4 is measured by the following secondary panel indicators at the *household* level:

- E-6: Knowledge of individual and community rights around engaging with outside investors and land concession processing
- E-7: Knowledge of laws regarding decentralized lands and natural resource management
- E-8: Change in households' knowledge of communal land boundaries

Outcome Family 4 is examined by the following context panel indicators at the *community* level:

- E-9: Receipt of benefits by community from investor activity
- E-10: Knowledge of Liberian laws regarding decentralized lands and natural resource management, among leaders and households

Outcome Family 4 is examined by the following context panel indicator at the *household* level:

- E-11: Receipt of benefits by community from investor activity, as reported by households

## **NATURAL RESOURCE CONSERVATION AND COMMUNITY DEVELOPMENT**

Outcome Family 5 is measured by the following secondary panel indicators at the *household* level:

- NRC-5: Conservation as household priority
- NRC-6: Change in perceptions of availability and quality of forest other communal natural resources, including timber, fuel wood, rivers/streams, animals, etc.
- NRC-7: Change in perceptions of forest conditions and degradation
- NRC-8: Frequency of engaging in unsustainable forest practices
- NRC-9: Level of, frequency of and household participation in investment in communal land and natural resources

Outcome Family 5 is examined by the following context panel indicators at the *community* level:

- NRC-10: Change in perceptions of availability and quality of forest other communal natural resources, including timber, fuel wood, rivers/streams, animals, etc.
- NRC-11: Change in perceptions of forest conditions and degradation
- NRC-12: Frequency of engaging in unsustainable forest practices
- NRC-13: Level of, frequency of and community participation in investment in communal land and natural resources
- NRC-14: Conservation as community priority

## **LIVELIHOODS**

Outcome Family 6 is measured by the following secondary panel indicators at the *community* level:

- L-3: Standard of living index with several of the enumerator observation variables (Electricity, road condition, number of hand pumps, presence of public buildings (meeting house, health clinic, secondary school, post office, cell service))

Outcome Family 6 is measured by the following secondary panel indicators at the *household* level:

- L-4: Wealth index (Assets, livestock, size of household cultivated land)

## INDEPENDENT VARIABLES—TREATMENT INDICATOR

Our treatment indicator for the panel analysis is the same as for the cross-sectional analysis described in Section 5.

## CONTROL VARIABLES

We include a vector of control variables in our regressions (all measured at baseline) to improve the precision of our estimates. These include those control variables introduced in Section 5 that were not balanced at baseline, as defined by imbalance at the 10 percent significance level and percent bias greater than 25 percent.

## PANEL ANALYSIS

### MAIN EFFECTS: INTENT TO TREAT

The PE is designed to rigorously assess the direct and joint impacts of the land protection intervention on the seven outcome families described above. The analysis will test the impact of CLPP on the primary panel indicators described above at the household and community level. The main effect of the treatment will be estimated with the following main specification for household outcomes:

$$[1a] \quad Y_{ij} = \beta_0 + \beta_1 T_{ij} + \beta_2 Y_{ij}^0 + B_3 X_{ij} + \phi_d + u_{ij}$$

where  $Y_{ij}$  is the outcome measure of household  $i$  in village  $j$ .  $T_{ij}$  is the treatment dummy for CLPP in comparison to the control group.  $\beta_1$  will provide the intent-to-treat effect, which is the effect of being selected to participate in the CLPP program among the study sample.  $X_{ij}$  is a vector of control variables, described in Section 5, and included imbalanced covariates.  $Y_{ij}^0$  is the baseline vectors for the outcome measure,  $\phi_d$  is county-fixed effects, and  $u_{ij}$  are robust standard errors clustered at the village level, using Huber-White sandwiched standard errors (Lin et al., 2013).

We will also estimate equation 1b below for outcomes measured at the community level. The parameters of the equation are the same as equation 1a, with the exception of household measures  $i$  and the inclusion of standard errors clustered at the village level.

$$[1b] \quad Y_j = \beta_0 + \beta_1 T_j + \beta_2 Y_j^0 + B_3 X_j + \phi_d + u$$

The equations described above for [1a] and [1b] represent our primary specifications of interest. However, we will also run a series of secondary specifications without covariate adjustment. Because of the clustered design, we will not run the simple difference in means estimator (Aronow & Middleton, 2013).

### MAIN EFFECTS: TREATMENT ON THE TREATED

Since not all individuals who reside in treatment communities may have actually participated in the CLPP interventions, and some of the control group may have attended some trainings, we will also estimate the impact of the treatment on those individuals who actually received the intervention.

To measure the treatment on the treated for household outcomes, we will estimate the following equation:

$$[2] \quad Y_{ij} = \beta_0 + \beta_1 C_{ij} + \beta_2 Y_{ij}^0 + B_3 X_{ij} + \phi_d + u_{ij}$$

$C_{ij}$  is an indicator for attending treatment  $i$ , which is instrumented by assignment to treatment status,  $T$ .

## HETEROGENEOUS TREATMENT EFFECTS

Our household sub groups of interest for the panel analysis are the same as for the cross-sectional analysis described in Section 5.

$$[5] \ Y_{ij} = \beta_0 + \beta_1 T_{ij} + \beta_2 T_{ij} * Het_{ij} + \beta_3 Het_{ij} + B_4 X_{ij} + \phi_d + u_{ij}$$

## MULTIPLE TESTING CORRECTION

Given the number of outcomes that we will test in the evaluation, we expect to find false positives in our results. As such, our evaluation results will report both uncorrected p-values and corrected p-values using the Benjamini & Hochberg (1995) False Discovery Rate Correction. Our main findings and summary sections will rely on the uncorrected values, because we are analyzing a number of closely related interdependent outcomes and, therefore, the standard corrections for the false discovery rate are likely too conservative (Gelman, Hill, and Yajima, 2012).

## SPILLOVERS

There are a number of techniques for estimating the Average Treatment Effect (ATE) in the presence of spillovers (see Aronow and Samii, 2015; Athey and Imbens, 2016). However, these require significant assumptions about how spillover works. Specific survey questions have been included in the endline surveys to measure the likelihood and/or extent of spillover and qualitative data might be used to assess spillover. If we determine that spillover is a serious problem, we will use inverse propensity score weighting to calculate an ATE (Aronow and Samii, 2015).

# 8.0 BALANCE AND POWER

## POWER

To assess the power of this evaluation, we estimate the minimum detectable effect size (MDES) for each variable using the processes described by [Optimal Design](#) and [PowerUp!](#). The calculations for household-level outcomes and village-level outcomes are different, as it is typically more difficult to detect changes at the village level than the household level.

The parameters used are:

- $\alpha = 0.5$  —the probability of a false positive (Type I) error
- $P = 0.8$  —the power we would like to estimate effect size with
- $rel$  —cluster (community) level reliability
- $\rho$  —intraclass correlation; calculated for each variable
- $J$  —number of clusters (communities)<sup>36</sup>
- $n$  —average cluster size; calculated for each variable
- $\mu$  —mean; calculated for each variable
- $\sigma$  —standard deviation; calculated for each variable

In addition to calculating MDES, we calculate the point change as  $MDES \times \sigma$ , and the percent change as

$$\frac{MDES * \sigma}{\mu} \times 100$$

Typically, the number of responses and the ICC have the biggest impact on MDES, where a higher number of responses gives a smaller MDES, and a higher ICC gives a larger MDES. When variables have a mean close to zero, the detectable percent change may appear to be very high—though it is not necessarily a large substantive change. This is often the case with variables measuring rare events. We highlight rare event indicators as necessary.

Of the four primary panel indicators analyzed, all are from the household dataset. Three of these indexes measure changes at the household level. One household level index is detectable at the 10% level. Two household level indexes and one community level index are detectable at the 20%-25% level.

Of the 27 secondary panel indicators analyzed, 24 are from the household dataset and three are from the leader dataset. With respect to the 24 household variables, 23 measure changes at the household level and one is aggregated to the community level to measure cluster level change. For changes at the household level, two are detectable at the 10% level, seven are detectable at the 11%–20% level, eight are detectable at the 21%-30% level, eight are detectable at the 31%-40% level, and one is detectable above the 40% level. Concerning the three community level indicators, all are detectable above the 40 percent level.

Overall, the analysis shows that we *likely* have power to measure changes in our primary indicators, and we *may* have power to see changes in secondary indicators across our seven outcome families, but we

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<sup>36</sup> For most models, the cluster is the level of SDI intervention: the community (clan or town cluster). In rare cases, the cluster is the town unit of observation. Please see Section 3: Observation Units for more information about the unit of intervention and the unit of observation.

will likely miss detecting some changes due to insufficient power. In particular, it will be difficult to identify statistically significant changes in community (clan or town cluster) level outcomes. Please refer to Annex 3 (CLPP PE Panel Indicators) for a detailed Power analysis for each proposed indicator used in the study.

## **BALANCE**

Overall, the balance assessment shows that the matching was successful. For the 31 primary and secondary indicator variables being tested for balance, only seven are highly significant ( $p < 0.01$  or bias  $> 25\%$ ) by at least one measure, and only three of those are variables for which both the standardized mean difference (SMD) and the regression agree there is a highly significant difference.

There are two caveats to be noted. First, it is important to distinguish between statistical significance and substantive significance. In some cases, we may see a 'statistically significant' difference, but in real or 'policy' terms, the substantive difference may be quite small. For example, a two or three percent difference may be statistically significant but not represent a large difference as far as the policy is concerned. Second, we must pay attention to indicators that measure events or practices that are not common in the sample, for example disputes. It can be difficult to assess the balance of variables that measure rare events, as a single one of these rare events happening in one group can make the groups look highly imbalanced by the regression and SMD measures.

## **ATTRITION, OUTLIERS, AND MISSING VALUES**

### **ATTRITION**

The expected attrition rate at midline is five percent. This figure is based on similar panel surveys conducted in recent years by Parley Liberia, a nongovernmental organization that specializes in land dispute resolution and research.

The midline data collection will take several steps to minimize attrition to the extent possible. Baseline data collection included completing detailed tracking sheets for each community that include the name and phone number of a key contact for the town, the name of each household respondent, the town quarter in which they reside, and the names and positions of the leaders who were interviewed. This information will be shared with enumerator teams before they survey a town to help locate the correct respondent and reduce instances of attrition where the correct respondent cannot be identified.

The survey firm will be instructed to make a minimum of three visits to each respondent. Whenever possible, appointments will be made in advance to maximize the ability to survey the respondent during a visit. Mobile phone numbers will be collected and appointments confirmed by mobile phone whenever possible. Survey respondents will also receive an in-kind incentive for participating in the midline survey. However, due to the nature of the interventions, households who have moved from their town to another town not included in the study sample will be replaced, not tracked.

The attrition rate will be calculated from the reduced baseline sample ( $N=810$  households). Several tests will be run after midline data collection is complete in order to determine if there is attrition bias. These tests include t-tests and ANOVA tests to answer the following questions:

- Is the magnitude of attrition different between treatment and control households?
- Are the baseline characteristics of attrited households in the control group significantly different than the baseline characteristics of the attrited households in the treatment group?



If statistical tests reveal attrition to be happening at random, and attrition is rare enough to not strongly affect the power of the design, attrited households will be dropped from the analysis. Power calculations indicate that an attrition rate under 15% will not affect the power of the study. At 15% attrition, slight decreases in power are discernable, but the magnitude of this decrease is not large (about one percentage point). Please refer to Annex 3 (CLPP PE Panel Indicators) for estimates of percent change detectable with a 15% attrition rate for each proposed indicator used in the study.

However, if statistic tests reveal non-random differences in magnitude or baseline characteristics of the attrited in the treatment and control areas, the analysis will adjust the sample through the use of imputation, weighting or Lee bounds so the share of observed individuals is equal for both treatment and control groups.

## **OUTLIERS**

We will address outliers by capping continuous variables at the 99<sup>th</sup> percentile of the observed values in our data.

## **MISSING VALUES**

For missing outcome measures, we will use the method proposed by Kling, Liebman and Katz (2007) and impute missing observations by setting them equal to the mean of each outcome variable for the relevant treatment arm.

For missing control variables, we will use the following rules proposed by Lin & Green (2016):

- For covariates missing less than 10 percent of observations, we will recode missing values to the overall mean.
- If more than 10 percent of observations are missing for a given covariate, we will include a dummy variable for missingness and recode the missing value with a filler estimate.

Annex 3 (CLPP PE Panel Indicators) presents this analysis.

## **VARIABLES WITH LIMITED VARIATION**

We have removed variables that have 95 percent of observations with the same value for a response category from the analysis. These variables will not be included as covariates or indicators. Annex 3 (CLPP PE Panel Indicators) presents this analysis.

# 9.0 ETHICAL CONSIDERATIONS

Participation in the study is voluntary, and all respondents were required to give their informed consent at the beginning of the survey process. All proposed research activities and supporting materials were submitted to the University of Michigan's Institutional Review Board (IRB) on April 17, 2013, for review and clearance. The investigators were informed that the scope of the study implied it was exempt from IRB approval. Approval was received from the Clark University IRB and from the University College London IRB in January 2017 for midline data collection. 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. Participants were assured their participation was voluntary and could be withdrawn at any point and their answers would be kept confidential. At midline, this consent included consent to share their data without revealing their identities to facilitate further research.

Respondents receive compensation for their time. At baseline, they received rice and sugar, and at midline, they will receive a similar in-kind payment.

As described in section 4.0 Data, quantitative data is collected through an electronic data collection platform (Pendragon at baseline and Survey CTO at midline) on Android mobile phones. Phones are password protected, and data is uploaded to an encrypted server every three days.<sup>37</sup> Data is stored on password encrypted computers, with PII removed.

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<sup>37</sup> When network connectivity is low, data is uploaded every other day.

# 10.0 DELIVERABLES & CALENDAR

On the following page is an estimated deliverable and planning timeline for the midline data collection and analysis activities. All dates and deliverables are estimated assuming timely feedback from reviews and barring impediments outside of ERC control.

## ESTIMATED TIMELINE

	2016			2017							
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Issue RFP for data collection, proposal review, and survey firm selection											
Midline Pre-Analysis Plan—draft for E3/Land review											
Survey instruments finalized											
IRB renewal											
Midline Pre-Analysis Plan—draft for 3rd party review											
Survey translation											
Country approvals, initial setup and electronic device shipping											
Programmed instruments											
Data collection—training											
Data collection—launch											
Qualitative translations due from the survey firm											
Data cleaning for submission to DDL											
Data analysis for Midline evaluation											

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# ANNEX I: CLPP IE BASELINE REPORT

The CLPP PE Design report can be found in PDF format at

<http://www.usaidlandtenure.net/documents/tgcc-zambia-impact-evaluation-design>.



# ANNEX 2: CLPP PE OTHER INDICATORS

Please refer to the Microsoft Excel file titled “CLPP\_PAP\_Indicators\_Other”.

# ANNEX 3: CLPP PE PANEL INDICATORS

Please refer to the Microsoft Excel file titled “CLPP\_PAP\_Indicators\_Panel”.

# ANNEX 4: AMMENDMENT TO THE PRE-ANALYSIS PLAN

## FURTHER SPECIFICATION OF HYPOTHESIS TESTING WITH QUALITATIVE DATA SOURCES

### RATIONALE

The qualitative instruments serve to collect data for five primary purposes:

1. To add a social context to ground the quantitative data—including i) community (clan or town cluster) self-identification, and ii) social relationships between key subgroups;
2. To triangulate responses from the household and the leader surveys, particularly about sensitive topics, like land disputes and governance;
3. To elucidate processes and mechanisms linking CLPP interventions to outcomes of interest;
4. To add depth and nuance to the overall research effort; and
5. Because of the deliberate selection of subgroups of interest to the evaluation, the focus groups are another key data source for examining heterogeneous treatment effects.

### DESCRIPTION OF THE DATA AND SAMPLING

The evaluation collects two types of qualitative data: focus group discussions (FGDs) with members of subgroups of interest and semi-structured KIs<sup>38</sup> with town leaders. At baseline, the qualitative data collection occurred in a subset of the towns involved in the evaluation (9 towns). FGDs were 90–120 minutes in length, and KIs were 30 minutes in length. For the next round of data collection, the evaluation is expanding this qualitative data collection to all units of observation. FGD will be 60 minutes in length, and KI will be 15 minutes in length (integrated as a module within the leader quantitative survey). As part of midline data collection, the evaluation will conduct 162 FGDs—three discussions in each study town—and 162 qualitative interview modules with leaders.

The FGD sampling plan is designed to capture the experiences of a variety of subgroups. There are five subgroups of interest: women, youth, elders, members of minority groups (where applicable), and hunters (where applicable<sup>39</sup>). All towns will receive a FGD with women and with youth. In towns with a minority population of sufficient size, the third FGD will be with members of minority groups. In towns where minority groups have smaller presence, the third FGD will be with hunters. If a town has neither a minority community nor a sizable population of hunters, the third FGD will be with elders.

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<sup>38</sup> At baseline these occurred as standalone interviews in the nine qualitative communities. For the next round of data collection, this interview will immediately follow the quantitative Leader Surveys in all study communities.

<sup>39</sup> In communities where hunting continues to an important source of livelihood (more common in the Southeastern regions of Liberia, including River Gee and Maryland counties) hunters play a specific role in community governance and in particular in natural resource governance and access to forest resources.

## CODING

### PRELIMINARY CODING

In order to meet the five primary purposes of the qualitative data mentioned above, the following general themes will be coded from the KII and FGD discussion transcripts.

General variables
Founding myth
State of the resources
Governance practices
Governance rules
Governance authorities
Governance changes in the past year
Women's Rights/ access to citizenship
Minority rights / access to citizenship
Youth rights / access to citizenship
Presence of investors or NGOs
Land expropriation
Value of resources
Self identification and community definition
Changes in perceived tenure security
Investors

For a full list of pre-specified themes, please see the table at the end of this Annex.

As a preliminary analysis, a sample of at least FGD transcripts (at least two, one from a treatment community and one from a control community but not more than six) will be coded following the coding rule outlined above. During the pilot two coders will code each transcript and results will be compared to validate the consistency of the coding rule. Updates will be made to increase consistency. Additional codes not included in the existing set of themes will be added and will be labeled as “added after pilot analysis.” If there are additional hypotheses or mechanisms identified, these can also be added as an addendum to this pre-analysis plan, but also identified as “added after pilot analysis.” The transcripts used for the pilot will be removed from the general pool and not used for data analysis (unless there is some unforeseen key reason for doing so, in which case it will be clearly noted in the write-up).

### COMPREHENSIVE CODING

Following the preliminary analysis of quantitative data, the research team will code the result of the transcripts according to the specified codes. The information will be stored in a qualitative data collection matrix. The matrix will have two parts: Treatment communities and control communities.

## COMPARATIVE ANALYSIS AND HYPOTHESIS TESTING

To meet purposes 2 and 3 mentioned above, and also to provide an additional tests of the hypothesized links between the CLPP intervention and the outcomes of interest, the research team will conduct a comparative analysis of the qualitative data. For each hypothesis listed below, a specific mechanism linking the treatment to the outcome is specified, as well as the observable implications in the qualitative data. For each hypothesis, the researchers will write a short comparative case study of the situation in the treatment communities versus the situation in the control communities and make a case about whether there is sufficient evidence to confirm the pre-

specified hypothesis. If evidence for other mechanisms or additional variables of interest emerge during this comparative analysis, this can be included in the large analysis of the project, but will be labeled as “exploratory.”

*H.2. Households in communities receiving the CLPP intervention will perceive different access rights, levels of tenure security, and protection of land their household customarily uses.*

*H.2A. Female-headed, youth-headed, and minority households in communities receiving the CLPP intervention will perceive different access rights, levels of tenure security, and protection of land their household customarily uses.*

- M2-1: The CLPP intervention increased perceived security of land tenure by educating community members about their rights to decide who can and cannot use their community’s land.
  - OI2-1: If the above hypothesis is correct, we expect to see mentions of these kind of education and awareness building activities by CLPP in transcripts from treatment communities through mention of the activities and through the ability to articulate their ownership of and rights regarding their community land.
- M2-2: The CLPP intervention decreased perceived tenure security by reviving dormant land disputes or otherwise increasing treatment community awareness of potential threats to their community land.
  - OI2-2: If the above hypothesis is correct, we expect to see low levels of tenure security described by members of treatment communities due to the prevalence of land conflicts or other potential threats.

*H.4. Households in communities receiving the CLPP intervention will have different perceptions of local land governance.*

*H.4A. Households in communities receiving the CLPP intervention will have different perceptions of the transparency, accountability, and representativeness of legal and customary governance institutions.*

- M4A-1: The CLPP intervention increased positive perceptions of leaders because in the treatment communities the leaders are credited with “doing something” about challenges facing natural resource governance in the community.
  - OI4A-1: If the above hypothesis is correct, we expect to see mentions of the CLPP program in the transcripts from treatment communities, in particular that the leaders are linked to the CLPP program or “brought” the CLPP program to the community and that the residents feel favorably about this development.
- M4A-2: The CLPP intervention increased positive perception of leaders because in the treatment communities households will have more opportunities to participate in local land governance through meeting attendance, meeting participation, rule making, or rule monitoring and enforcement.
  - OI4A-2: If the above hypothesis is correct, we expect to see description of increased participation with specific examples in transcripts from treatment communities.

*H.4C. Female-headed, youth-headed, and minority households in communities receiving the CLPP intervention will have different governance participation.*

- M4C-1: The CLPP intervention changed levels of governance participation by specific social groups by changing norms around the participation of specific social groups in these communities.

- OI4C-1: If the above hypothesis is correct, we expect that all respondents indicate that members of specific social groups have participated and that this is linked to the CLPP intervention.
- M4C-2: The CLPP intervention changed levels of survey response about the participation of specific social groups because of social desirability bias in treatment communities (the program taught respondents how to answer survey questions in a specific way).
  - OI4C-2: If the above hypothesis is correct, we expect indications that these social groups have participated, but no clear indication for why these rights have changed and not specific reference to the CLPP intervention.

*H.5. Communities receiving the CLPP intervention will have different community-wide incidence of land conflicts.*

- M5-1: The CLPP intervention increased levels of conflict in treated communities by causing people to discuss dormant disagreements, by challenging the flexibility of boundaries, or in other ways through the by-law production and boundary definition process.
  - OI5-1: If the above hypothesis is correct, we expect that respondents talk about increased land disputes in treated communities and that these disputes are linked to the processes of the CLPP program.
- M5-2: The CLPP intervention decreased levels of conflict in treated communities providing additional dispute resolution mechanisms and helping to reduce a back log of land cases.
  - OI5-2: If the above hypothesis is correct, we expect fewer reports of conflict in treated communities and references to how community leaders are resolving conflict.

*H.6. Households in communities receiving the CLPP intervention will experience a different number of land conflicts.<sup>40</sup>*

*H.6A. Female-headed, youth-headed, and minority households in communities receiving the CLPP intervention will experience a different number of land conflicts.*

- M6A-1: The CLPP intervention increased levels of conflict for specific subgroups by supporting those subgroups to make claims they previously would not make before the program.
  - OI5-1: If the above hypothesis is correct, we expect that there will be more conflicts reported and that members of specific subgroups will report more claims and changes to their participation in governance / and or property rights.
- M6A-2: The CLPP intervention decreased levels of conflict for specific subgroups by supporting those subgroups in a way that reduced conflict.
  - OI6A-2: If the above hypothesis is correct, we expect that compared to other people, members of subgroups report fewer disputes over land and property but still report positive changes to participation and/or property rights.

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<sup>40</sup> It is possible that in the short term (at midline) conflicts may increase due to the boundary harmonization process, but this is a key program goal. The evaluation team will use qualitative data to understand the processes and mechanism observed during midline data collection.

## PRE-SPECIFIED THEMES FOR THE KII AND FGD DISCUSSION TRANSCRIPTS

### Founding myth

Is there a specific founding myth that members of the FDG agree on?

How detailed is the founding myth?

What is the most detailed component of the founding myth?

Is the founding myth based on the idea of first-come status?

Who do the respondents state "owns" the community?

### State of the resources

Overall, do respondents say the state of the natural resources is improving or getting worse?

Why are the natural resources improving or getting worse?

### Governance practices

What are the most common ways that people use the natural resources in the community?

Governance rules

Examples of how people are excluded from using natural resources in the community.

What are specific rules of natural resource use in the community?

### Governance authorities

Who are the authorities concerned with governing natural resources?

Why is the respondent feeling good / not good about the governance of communal natural resources?

Governance changes in the past year

Do the respondents mention CLPP as a change in the past year in the ways that people "work together" to govern their community?

### Women's Rights/ access to citizenship

What rights do women have?

Why do they have these rights?

How has this changed?

### Minority rights / access to citizenship

What rights do minorities have?

Why do they have these rights?

How has this changed?

### Youth rights / access to citizenship

What rights do youth have?

Why do they have these rights?

How has this changed?

### Presence of investors or NGOs

What NGOs, investors, or other actors are specifically mentioned and in what context?

For each actor mentioned, please indicate whether it was positive, negative or neutral in context.

Land expropriation

Which actors are named in response to questions about actors crossing the community boundaries?

### Value of resources

Which resources are important for economic reasons?

Which resources are important for social cohesion?

## **PRE-SPECIFIED THEMES FOR THE KII AND FGD DISCUSSION TRANSCRIPTS**

Which resources are important for religious or sacred reasons?

### **Self-identification and community definition**

What does the respondent report about community boundaries?

Any change in their knowledge or feelings about boundaries (any reference to CLPP or another program)?

### **Changes in perceived tenure security**

How do the respondents feel about the security of the boundaries of their community?

How has this changed and why?

### **Investors**

What kinds of investments are being made in the community?

Who gave the company power to be on the land/resources?

What kind of work is being done now?

### **Benefit sharing from investments**

Who is benefitting from investments?

Does the government provide help in dealing with investments?

### **Investor scenario**

What rights do community members have with regard to the hypothetical investor?

What should the community do in the scenario?

Who should the community ask for help?

### **Conflict**

What kinds of land conflict are mentioned?

How were conflicts resolved?

If they were not resolved, why not?

### **Change in relationship with district/county/national government officials**

Overall, how do respondents feel about the relationship between their community and other government governance structures?

Has this changed recently?

### **Challenging topics**

What topics were hard for respondents to understand?

What topics were respondents reluctant to discuss?

What topics were respondents eager to discuss?



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