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**Filling the Legal Void? Experimental Evidence from a
Community-Based Legal Aid Program for Gender-Equal
Land Rights in Tanzania**

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ABSTRACT

Gender disparities continue to exist in women's control, inheritance, and ownership of land in spite of legislation directing improvements in women's land access. Women are often excluded from traditional patrilineal inheritance systems, often lack the legal know-how or enforcement mechanisms to ensure their property rights are maintained, and often lack initial capital or asset bases to purchase land through market mechanisms. Community-based legal aid programs have been promoted as one way to expand access to justice for marginalized populations, through provision of free legal aid and education. Despite promising programmatic experiences, few rigorous evaluations have studied their impacts in developing countries. We evaluate the effect of a one-year community-based legal aid program in the Kagera Region of northwestern Tanzania using a randomized controlled trial design with specific attention to gender. We measure impacts of access to legal aid on a range of land-related knowledge, attitude, and practice outcomes using individual questionnaires administered to male and female household members separately. Effects were limited in the short term to settings with minimal transaction costs to the paralegal. Treatment women in smaller villages attend legal seminars and are more knowledgeable and positive regarding their legal access to land. Cost-effectiveness analysis shows that the costs of bringing about these changes are moderate. The difference between the impact of the intervention on men and on women is narrowed when taking into account the gender-differentiated paralegal effort, and thus costs, allocated to women and men.

Keywords: legal aid, gender, land rights, Tanzania

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1. INTRODUCTION

Violence, crime, and corruption have been linked to a myriad of negative consequences at the individual and societal levels, including increased fear, poor health, mortality, decreased income, and stagnating economic growth (Arvin and Byron 2012; Braakmann 2012; Campbell 2002; Haugen and Boutros 2014; Mauro 1995; Stöckl et al. 2013). For these reasons the UN has recognized that access to justice for all is a necessary step in tackling the root causes and consequences of poverty (UN 2012). The poor and other vulnerable populations are disproportionately affected by corrupt, dysfunctional, or nonexistent public justice systems, as they are often not able to purchase private legal services, leaving them susceptible to negative consequences (Haugen and Boutros 2014). In addition, the poor face multiple barriers to accessing justice. First, the cost of accessing legal advice and administrative or adjudication fees may be prohibitive (UN 2012). Furthermore, because of social inequalities such as low education or social capital levels, the poor may lack the awareness of their rights or information on how to seek redress (UN 2012). Cultural barriers may also marginalize certain groups who then fear backlash or stigmatization from more powerful community members if they seek aid from legal systems, particularly when customary systems prevail within a community (Behrman, Billings, and Peterson 2013).

In their recent book *The Locust Effect*, Haugen and Boutros (2014) argue that dysfunctional and corrupt legal systems have persisted in developing countries, partially due to the lack of willingness of outside organizations to tackle reforming the legal infrastructure. In addition, comprehensive legal reform is a long and complex process involving many actors and may take decades to improve. Expenditures on legal aid in Africa (excluding South Africa) range from US\$0.2 to \$1.3 million,¹ which suggest that resources may be too limited to modify existing systems (UNODC 2011). In the shorter term, a number of interventions aimed at improving access to justice have gained momentum, including community-based legal aid (CBLA) programs (Behrman, Billings, and Peterson 2013; Knox et al. 2007; Knox 2012; Kolisetty 2014).² In basic terms, CBLA programs provide underserved populations access to legal services by training a community member to serve as a paralegal within their own community, often on a voluntary basis. In this paper, we use the term *paralegal* in reference to community paralegals rather than professional legal assistants. Paralegals may conduct outreach and community education on legal rights and procedures, dispute mediation, provide lawyer referrals for formal cases, and advocate for individuals who choose to pursue their cases in the legal system. CBLA programs have been implemented in numerous countries, primarily in Africa and Asia, and are seen as a promising approach to improving access to justice for marginalized populations.

Despite the proliferation of CBLA programs, little quantitative evidence exists as to their effectiveness in improving concrete well-being indicators for the rural poor. Sandefur and Siddiqi (2013) use a randomized design to examine the six-month impacts of a paralegal program on the trade-off that plaintiffs face between customary and formal justice systems in Liberia. Consistent with their expectations, paralegals encourage marginalized groups who face discrimination or disadvantage in the customary system to access the formal system. In addition, legal aid was found to have significant impacts on legal case outcomes as well as household- and child-level food security (by 0.24 and 0.38 standard deviations, respectively). One limitation in the external validity of the study is that they draw their sample from individuals already seeking legal aid, which leaves the program implications for legal aid demand unknown. Furthermore, resolution in court is a minor aspect of most CBLA programs, as they also serve to shift perceptions toward equality and justice through community awareness campaigns and legal education activities.

¹ All dollar amounts noted in the text are in US dollars.

² Formally, *legal aid* is defined by the Cambridge Dictionary as “a system of providing free advice about the law and practical help with legal matters for people who are too poor to pay for it.” Here, we adopt the definition of the Lilongwe Declaration, which defines legal aid as “legal advice, assistance, representation, education and mechanisms for alternative dispute resolution; and as including a wide range of stakeholders, such as nongovernmental organizations, professional bodies and academic institutions” (LSF 2012).

Blattman and colleagues (2014) complement previous work through investigation of a one-year mass education campaign to promote alternative dispute resolution (ADR) in Liberia. ADR is similar to CBLA in that it is intended to reduce the length and cost of disputes through informal third-party mediation processes including arbitration, neutral evaluation, conciliation, and negotiation, among others (Lieberman and Henry 1986).³ Blattman and colleagues (2014) found that the campaigns reached approximately 15 percent of adults in treatment communities. Land disputes were 29 percent less likely to remain unresolved, property destruction decreased by 32 percent, and disputants were 10 percent more satisfied with outcomes. In addition, the campaign generated demand for legal aid.

However, the authors also found some unintended consequences of ADR. The proportion of individuals experiencing extrajudicial punishment (for example, witch hunts, trials by ordeal) doubled. Nonviolent disagreements, including youth–elder disputes, increased, indicating that education campaigns may encourage youth to challenge authority. The authors hypothesize that discussions of equal rights in the community offered the opportunity for groups with lower power (including youth) to challenge current dynamics and stand up to existing structures that they deemed unfair. In addition, in contrast to positive impacts on property disputes, no significant impacts were observed on monetary disputes. Therefore, although showing benefits of increased access to ADR among certain types of disputes, the evaluation points to important unintended consequences, including the risk that illegal forms of punishment may increase.

Despite the promising but somewhat mixed evidence to date, our knowledge of whether CBLA programs will result in favorable outcomes for the marginalized rural poor in developing countries has many gaps. The most obvious gap is in replication in geographically diverse environments. As the two aforementioned studies are both in postconflict Liberia, there is reason to believe that the environment and legal framework around land and other property is somewhat unique. In addition, one heavy focus of current programming is on women’s land rights, where paralegals are intended to address the gap between *de jure* women’s land rights and the *de facto* practices that often undermine women’s land tenure security. A gendered focus is particularly important because the perception among practitioners, researchers, and advocates working on women’s land rights is that enactment of legislation equalizing gendered land rights will not, without further programming, necessarily translate into the realization of rights. However, neither of the interventions and evaluations have a particular gender focus in their design. Finally, we do not have any paired measures of cost-effectiveness in which to assess the trade-off between CBLA and other similar women’s land rights or justice-sector interventions.

We evaluate the effect of a one-year CBLA program in Kagera, Tanzania, run by a local nongovernmental organization (NGO). We identify the gendered impacts of access to legal aid on a range of land-related knowledge, attitudes, and practice outcomes using individual questionnaires administered separately to male and female household members. The intervention is designed as a randomized controlled trial (RCT) with baseline and endline surveys occurring in April 2013 and September 2014, respectively. In addition to impacts, we assess the cost-effectiveness of the intervention, to provide policymakers and program implementers with information on how NGO-run legal aid compares with alternative programming.

We find that changes in legal knowledge, attitudes, and practices related to land are limited for women exposed to CBLA programs in the short term. Treatment women are more aware of paralegals, yet their presence resulted in only slight shifts in women’s perceptions of their rights to inherit land *and* their knowledge when government can expropriate land. *Intention to treat on the treated* (ITT) estimates by village size corroborate insights from the qualitative literature, which note paralegal transaction costs as an obstacle to program success (Behrman, Billings, and Peterson 2013). In particular, women in low-populated villages are 8 percent more likely to have the view that women and men should have equal land rights. They also are 7 percent more likely to indicate that women should inherit land following their husband’s death. Additionally, 9 percent of treatment women in low-populated villages behold that the

³ Although similar to CBLA programming in its objectives, ADR generally does not include the legal education component and thus is less likely to change attitudes or knowledge at scale surrounding a particular legal issue.

land and housing tribunal treats cases fairly. These shifts in perceptions follow equivalent increases in paralegal awareness (10 percent) and seminar attendance (2 percent) in low-populated villages. Gender-differentiated land practices remain constant throughout, perhaps due to the duration of the program.

Cost-effectiveness analysis sheds light on the comparative costs per person of achieving outcomes in knowledge, attitudes, and practices with regard to land rights, and is able to disaggregate and compare these costs by gender. Improving the knowledge of women about the rights (and limits to these rights) of government to expropriate land amounts to \$9.90 per woman in the treatment areas, whereas the equivalent cost per man is \$6.50. Increasing the awareness of paralegals costs \$15.50 and \$9.00 for women and men, respectively. Considering that these costs-per-person are not cumulative—for example, the costs incurred in raising awareness and those in improving knowledge are not to be seen as additive but based on the same set of expenditures undertaken in the intervention—these unit costs can be seen as moderate.

The remainder of this paper is structured as follows: Section 2 provides a brief history of gendered land rights in Tanzania and an overview of the demand and supply of legal aid in our study region. Section 3 provides details on the study design, data collection, and methodology; Section 4 presents the impact evaluation results; and Section 5 presents cost-effectiveness results. Section 6 concludes and discusses policy and research implications of findings.

2. COMMUNITY-BASED LEGAL AID IN TANZANIA

Motivation and Legal Context

Similar to governments in other African countries, the Tanzanian government did not give women formal land rights, and most customary law has denied women the right to own property (Peterman 2011; Tsikata 2003). In the late 1990s a government study captured the prevailing status of women's land rights. It found that women's access to land was indirect and available only through their husbands, fathers, or sons. Married women generally did not control land, livestock, or farm produce that was not used for home consumption. Furthermore, women perceived that dispute settlement institutions were corrupt and biased in favor of men (Tsikata 2003).

In 1999, two landmark pieces of legislation were passed in Tanzania, altering the legal environment for women: the Land Act, which requires spousal consent before the sale or transfer of land; and the Village Land Act, which upholds the rights of women to co-ownership of land, as well as the individual right to acquire, sell, and use land. The latter law places village land under the jurisdiction of a Village Land Council (VLC) and specifies that one-third of council members should be women. Although these acts recognize women's *de jure* rights to land, in reality the interpretation and implementation of these laws varies widely. This is particularly the case in rural areas where customary law is dominant. Women often lack the legal know-how or enforcement mechanisms to ensure their property rights are maintained. Although access to land is critical to maintain a secure livelihood and food security for farming households in rural Tanzania, women still represent less than 20 percent of rural landholders (FAO 2011), and just 38 percent of widows receive a majority of their late husband's assets (Peterman 2012). Research conducted in 2009 reports on the status of gender and land issues 10 years after the passage of the 1999 land laws (WLAC 2009). The study employed qualitative techniques and a cross-sectional case study design to sample nine villages and 1,204 women over the age of 18. The principal finding of the study was that the land laws appear to have had a limited impact on women's landownership.

Spurred by the inequalities and barriers to rural men and women in accessing the legal system, in 2010, the Tanganyika Law Society (TLS) was commissioned by the Legal Sector Reform Program to conduct a baseline assessment of paralegal programs in all regions of Tanzania. The study identified 49 paralegal centers operating in Tanzania with 1,770 total trained paralegals. Paralegal services were offered in all 21 regions of mainland Tanzania, with centers typically based either at the regional level or at the district level. Despite the intention of comprehensive coverage, it was noted that access to paralegal services diminished in more remote areas and it was unlikely that district services had the capacity to provide full coverage within the district (TLS 2011). A more recent assessment of CBLA in Tanzania was conducted by the Legal Services Facility (LSF) in 2012, identifying 79 organizations with CBLA programs, 20 of which were included in the survey. The LSF study also found that legal aid service providers are generally concentrated in urban areas, preventing many potential clients in rural areas from accessing services. Moreover, they concluded the legal framework for supporting aid is generally weak, with no guiding policy, national strategy, or legislation to regulate legal aid services.

Due to donors' and policymakers' interests in the potential of CBLA programs to fill gaps in access to legal aid, and given the notable lack of research, a formative, qualitative evaluation was undertaken by the International Food Policy Research Institute (IFPRI) in 2012 in Uganda and Tanzania. The objectives of the study were threefold: (1) to elicit opinions from implementers, government, and rural men and women on how current CBLA activities are functioning, and how to most effectively design and deliver future programming, focusing on gender and land rights; (2) to assess current knowledge and attitudes of rural men and women with respect to gender and land rights in areas with and without CBLA services; and (3) to assess the potential for CBLA programming expansion in Uganda and Tanzania (Behrman, Billings, and Peterson 2013). Taken together, results demonstrate a clear demand for enhanced CBLA services that focus on gender and land rights issues in both countries. However, scale-up efforts must be focused on improving both the coverage and quality of CBLA services. Two key aspects

in service provision were the selection of paralegals and the sustainability of volunteer service provision, which potentially results in paralegal dropout. In addition, there was a need to enhance and standardize CBLA training, encourage CBLA providers to exemplify practices for improved women's land rights, bolster land registration efforts at the community level, expand use of media for community sensitization efforts, support the process for changing attitudes at the community level, and improve coordination among service provider organizations. Despite the promise of CBLA programs, the IFPRI report again highlighted the lack of research, particularly evaluations with the ability to clearly measure the impact and cost-effectiveness of rural paralegals.

Demand and Supply of Legal Aid in Kagera

Land disputes are common in Tanzania, indicating large demand and potential for legal aid in the country (LSF 2012). To give further contextual and descriptive information on the study region, we present supply and demand indicators for legal aid from the baseline study sample (Tables 2.1 and 2.2, respectively). Table 2.1 shows that among the survey sample, 7 percent of all households have experienced a dispute in the past 12 months on at least one of their land parcels. On average, households spend a little over 19,000 Tanzanian shillings (TZS), or approximately \$11, to resolve land disputes, as the majority of cases are handled locally within the village; however, some households report spending more than 9 million TZS (approximately \$5,500) on land dispute cases. Of those households in the sample that reported a current or past dispute at baseline, the most common source for adjudication was the village government (44 percent). Only 1 percent of disputes were mediated by a paralegal, indicating low access to this source of free legal aid. Most communities in the sample recognize the rights of women to own land. Yet women in 20 percent of the sample villages are not allowed to obtain a customary right of occupancy (CRO) in their own name. Across all villages, women are the minority in control of household-held land, as only about half as many female respondents compared with 74 percent of male respondents reported having exclusive or joint rights to sell household-held parcels.

Table 2.1 Demand for community-based legal aid in Kagera, Tanzania

Variable	Mean	SD	N
<i>Household variables</i>			
Household has at least one parcel with a dispute in the last 12 months	0.07	0.26	1,628
Total amount spent by household on resolving past land disputes (TZS)	19,696	271,177	1,628
Local/village government was the highest authority to hear dispute (conditional on if HH has a disputed parcel)	0.44	0.50	167
Paralegal was the highest authority to hear dispute (conditional on if HH has a disputed parcel)	0.01	0.11	167
Female respondent holds the right to sell household land exclusively or jointly with others	0.45	0.50	1600
Male respondent holds the right to sell household land exclusively or jointly with others	0.74	0.44	896
<i>Community variables</i>			
Woman can obtain a CRO in her own name	0.80	0.40	139
Woman can have shared CRO with a family member	0.90	0.30	139
Woman can inherit land according to customary rights practiced in village	0.94	0.25	139

Source: Authors.

Notes: CRO = customary right of occupancy; HH = household; N = number of observations; SD = standard deviation; TZS = Tanzanian shilling. Statistics drawn from baseline data

Table 2.2 Supply of community-based legal aid in Kagera, Tanzania

Variable	Mean	SD	N
<i>Household variables</i>			
Female respondent received legal advice from a CBLA in last year	0.00	0.04	1,600
Male respondent received legal advice from a CBLA in last year	0.00	0.07	896
<i>Community variables</i>			
Travel time to access free legal services (hours)	1.62	1.06	119
Travel time to reach court (hours)	1.36	1.01	139
Travel time to reach ward tribunal (hours)	0.54	0.92	139
Cost to reach court (TZS)	2,729.50	3,004.21	139
Cost to reach ward tribunal (TZS)	830.94	2,047.05	139
Cost to bring a case to the ward tribunal (TZS)	5,944.00	2,920.46	125
Village has a VLC	0.56	0.50	136
Number of meetings held by the VLC in past 12 months (conditional on if village has a VLC)	7.09	13.33	79
Number of land disputes handled by the VLC in past 12 months (conditional on if village has a VLC)	4.10	4.22	79
Number of land disputes referred to court in past 12 months (conditional on if number of land disputes > 0)	0.54	1.10	59
Number of land disputes referred to ward tribunal in past 12 months (conditional on if number of land disputes > 0)	1.00	1.35	59
Number of land disputes resolved by the VLC in past 12 months (conditional on if number of land disputes > 0)	3.03	2.88	59

Source: Authors.

Notes: Statistics drawn from baseline data. CBLA = community-based legal aid; TZS = Tanzanian shillings; VLC = village land council.

Access to free legal services in the study region is very low among most communities that are more than 1.5 hours away from free services. As an indication of this barrier, only seven of the respondents in the sample had received legal advice from a CBLA worker in the 12 months preceding the interview. Significant barriers exist in accessing other legal services to bolster claims to land, such as those offered by a ward tribunal or court due to both travel time and cost. On average, it costs nearly 6,000 TZS (more than \$3) to bring a case to the ward tribunal. Although every village is legally mandated to have a VLC, only 56 percent of the villages in the sample reported having an active council. Of those villages with a VLC, the average number of land disputes heard by the council in the 12 months preceding the interview was four, and the majority of these disputes were settled by the VLC without referral to a higher authority. Based on this information, it is clear that there is little or no access to free legal aid, and access is limited to other village customary or ward-level services, particularly given financial constraints of the population.

3. EXPERIMENTAL DESIGN, DATA, AND METHODOLOGY

Experimental Design and Description of Intervention

The CBLA program evaluation was conducted in the Biharamulo and Karagwe districts of the Kagera Region in northwestern Tanzania. Seventy villages were randomly allocated to receive trained paralegals, and an additional 69 villages were reserved as control communities (both groups stratified by district).⁴ Paralegals in the targeted treatment villages were trained according to the national standardized curriculum for paralegals (TLS 2011).⁵ A stipend of approximately \$13 per month was provided to each paralegal to cover transportation expenses associated with the delivery of monthly reports to the paralegal district office documenting cases and legal education activities. Professional legal service providers from the local NGO Mamas' Hope Organization for Legal Assistance (MHOLA)⁶ visited the district offices monthly to monitor the program operations, provide technical assistance, and identify cases requiring official resolution in court. Paralegals were given the phone numbers of MHOLA legal officers to contact when in need of urgent council regarding their local cases.

The selection process of paralegals was conducted by MHOLA. MHOLA notified officials in the assigned treatment villages about the program and requested recommendations for three paralegal candidates who had completed a Form IV education (high school equivalency) and who had good standing in their community. These selection criteria were set in accordance with the proposed national standards for legal aid service provision; however, the criteria also seriously limited the pool of eligible candidates in the study villages (Billings, Meinzen-Dick, and Mueller 2014). MHOLA interviewed all candidates and selected one volunteer paralegal from each village based on the individual's perceived leadership abilities and commitment to community service. The 70 selected paralegals participated in an intensive four-week training course following the national paralegal curriculum and then provided legal education and legal advising in their home villages for approximately 12 months, with technical support from MHOLA.

The objective of the MHOLA program was to increase access to legal services and improve legal knowledge in underserved, primarily rural communities. In this study, any community members living in a treatment village could benefit from the services offered by the paralegal through access to free legal advising and participation in legal education opportunities. While the paralegal curriculum of the training covered a range of topics,⁷ a qualitative review of CBLA programs in Uganda and Tanzania notes the potential of these programs to improve women's land rights as the majority of cases are related to land disputes and women are identified as a vulnerable group due to customary practices (Behrman, Billings, and Peterson 2013). We therefore examine the gender-differentiated impacts of the one-year intervention, focusing on outcomes related to legal issues surrounding land.

⁴ The study was originally designed to have 35 comparison communities in each district. One village had confusion over divisional lines driven by a recent government reform. At baseline, the village was considered a distinct comparison village, but we later learned at endline that the community was actually part of an adjacent comparison community already in our sample. We omit the community from the sample to maintain the original sampling frame in our analysis.

⁵ One unique feature of this program, relative to other CBLA programs in Tanzania, is that paralegals are responsible for providing services to clients at the village level. The standard CBLA program in Tanzania places an individual paralegal at the ward level, an administrative unit comprising several villages. The paralegal is responsible for covering clients from all villages within the assigned ward (for example, Karagwe and Biharamulo have four villages per ward on average). We were concerned that we would not have enough statistical power to confidently examine the impacts of CBLA programs at the ward level since the two study districts have only 37 wards. Since our intervention likely increases the intensity of exposure to legal services beyond what would be expected from a typical CBLA program by a factor of four, the results likely offer an upper bound estimate of impacts from a CBLA program with paralegals at the ward level.

⁶ MHOLA has provided services in the region since 2006. The NGO has CBLA programs in three other districts of Kagera but had never offered any community-level services in the study districts prior to this intervention.

⁷ Topics include land law; marriage law; sexual offences; probate law; human rights concepts and laws; rights for disabled, elderly, and people living with HIV; labor law; and child law.

Data

Household and community survey instruments were administered in all 139 study villages at baseline (2013) and endline (2014) (timeline displayed in Figure 3.1). The analysis here draws mainly from the household survey, which includes information on household composition; landholdings, assets, and livestock; tenure security of land parcels; and household experiences of land disputes. The questionnaire also includes separate sections that were administered privately to both the head of household and, when the head was married, to the spouse. Topics in the sections for the head and spouse included awareness of paralegal activity, knowledge of laws and procedures related to land and women's land rights, inheritance practices, labor and time use, household decisionmaking, and respondents' experience of violence.

Figure 3.1 Timeline of CBLA evaluation and intervention

Source: Author's analyses based on household surveys.

The final sample comprises 1,339 households, with approximately 600 male and 1,200 female respondents, from 139 villages in the Biharamulo and Karagwe districts. Twelve households were randomly selected in each village, stratified equally by the gender of household head. Studies indicate divorced and widowed women are particularly vulnerable to land expropriation, which implies they might serve as the primary beneficiaries of existing CBLA programs (Peterman 2012; Yngstrom 2002). We therefore stratified the sample by the gender of the household head to increase the number of potential beneficiaries included in our sample.

Two additional survey instruments were used to collect information about the paralegals before and after the intervention. A short survey was administered by MHOLA to all 165 paralegal candidates interviewed for the intervention to obtain baseline information on the paralegals' demographics (for example, age, education, occupation, and place of birth) and to understand the final selection process of paralegals. In addition, at endline, an in-depth questionnaire was administered to the 70 trained paralegals. The purpose of the questionnaire was to learn the range of services offered by the paralegals and the challenges they faced in providing legal aid to community members over the course of one year. We also included demographic questions collected in the household survey to allow for descriptive comparisons between the paralegals and those they serve. Previous work on rural service delivery highlights the importance of similarities between information messengers and their peers on intervention impacts (Munshi 2004; Feder and Savastano 2006; Kondylis, Mueller, and Zhu 2014).

Measurement of Land-Related Knowledge, Attitudes, and Practices

The key outcomes analyzed at the individual level can be divided into three categories: legal knowledge, attitudes with respect to access to legal aid and land rights, and legal and land practices.⁸ The following paragraphs describe the variables that are analyzed under each category.

Knowledge

We asked a series of questions surrounding land titling, inheritance regimes, gendered access to land and dispute mechanisms, and marital law. The questions are drawn from material in the standardized paralegal curriculum (TLS 2011). For the purpose of this study, we concentrate on four questions related to legal knowledge surrounding land rights. Binary variables were created to reflect whether the respondent answered accurately with respect to (1) a widow's entitlement to her deceased husband's land, (2) a recognized son's entitlement to inheritance, (3) the government having the right to expropriate land for public use, and (4) the ward tribunal being the entity to settle an individual conflict over a piece of land worth 2 million TZS when the village land council is unable to resolve the conflict.⁹

Attitudes

We analyze four indicator variables to demonstrate male and female respondents' attitudes regarding equitable access to legal support and rights to land. The first variable defines whether the individual thinks women ought to have the same right as men to own land. The second variable captures whether the individual thinks a wife ought to inherit the land when her husband dies and no children are involved. The third variable indicates whether the respondent feels it is possible to receive fair treatment from the land and housing tribunal. The fourth variable exhibits whether the individual believes she ought to have the right to matters pertaining to her own interests. All attitude variables were collected only in the endline survey.

Practices

We divide the behavioral variables into the following two categories: landownership, management, rights of use, and land security. The state of landownership, management, and rights of use is demonstrated through the observation of four variables: (1) the individual has exclusive or joint right to sell at least one parcel of household-held land; (2) the individual has exclusive or joint right to bequeath at least one parcel of household-held land; (3) the individual is the primary business decisionmaker (or primary manager of inputs) on at least one parcel of household-held land; and (4) the individual is the primary output decisionmaker (or primary manager of income generated from outputs) for at least one parcel of household-held land. Land security is measured by two additional variables: (1) whether the individual lives in a household that experienced a dispute on at least one parcel in the last 12 months, and (2) whether the individual lives in a household that expects a future dispute on at least one parcel during the next five years.

⁸ We focus on variables that we are well-powered to detect as statistically significant, which is determined by whether our study includes a sufficient number of clusters to detect a 0.4 standard deviation increase in the outcome at endline. Table A.1 presents the power calculations for an array of outcomes using the pooled sample of men and women at baseline. We compare the number of clusters in our design (139) to the minimum number of clusters required to statistically detect an effect of 0.4 standard deviations for a given outcome. All power calculations are computed using the number of households per cluster (12) and the means, standard deviations, and intracluster correlations for each outcome.

⁹ Two additional knowledge questions were suitable to include in the analysis: knowledge of a married man's inability to sell land without his wife's consent, and knowledge of the government not having the right to expropriate one's land to another household to farm. Ninety-five and 89 percent of respondents, respectively, answered these questions correctly. The questions were therefore omitted from the analysis as the majority of respondents were already knowledgeable of these aspects of legal knowledge at baseline.

Empirical Strategy

We causally estimate the intent-to-treat (ITT) effect of residing in a community j that was randomly allocated a trained paralegal on the aforementioned knowledge, attitude, and practice outcomes of individual i using the following difference-in-difference regression:

$$\Delta Y_{ij} = \beta_0 + \beta_1 T_j + \beta_x X_{ij} + \Delta \varepsilon_{ij}, \quad (1)$$

where ΔY represents the change in the outcomes of interest from baseline to endline. T is an indicator for whether the individual resides in a treatment community, and where β_1 is the ITT effect. X is a vector of baseline covariates that are included to increase the precision of the estimates and control for any minor differences between comparison arms at baseline (indicators for age and age-squared, monogamous and polygamous unions, completion of primary education, first and third value of landholding tercile categories). District indicators are included in the vector X because the randomization was stratified by district. Standard errors are clustered at the community level to allow for correlation of outcomes within treatment communities (Bertrand, Duflo, and Mullainathan 2004). Equation (1) is estimated for female and male respondent samples separately. F statistics testing the difference between coefficient estimates across samples are presented for comparison.

The likelihood of determining any given ITT estimate to be statistically significant will increase with the number of outcomes analyzed. We therefore provide the Sidak–Bonferroni-corrected p-values that account for familywise error rates (Abdi 2007). The families of hypotheses are based on the following stratification of outcomes in the tables: individual land knowledge (four outcomes); attitudes with respect to access to legal aid and land rights (four outcomes); landownership, management, access, and security (six outcomes); and awareness and use of legal services regarding land issues (four outcomes).

We also provide estimates of the treatment on the treated (TOT), given that 16 percent of the paralegals no longer resided in the communities and ceased to provide legal aid at endline. The TOT adjusts the ITT for the compliance rate. Specifically, we substitute T for T_C in equation (1), where the latter indicates whether the village had a paralegal present in the community at endline. We then use an instrumental variables model to estimate equation (1), using the randomized village eligibility for treatment indicator T as an instrument for T_C . We report the estimated coefficient on T_C and ITT estimates for robustness.

Internal Validity

We first check that the demographic and wealth characteristics of individual respondents were similar across treatment and control groups at baseline. Table 3.1 (columns 1–3) provides the results of the balancing tests, which compare the means of 12 demographic and wealth variables by treatment status. The tests indicate that there is a small, statistically significant difference in the proportion of individuals in a polygamous marriage across groups. We therefore include whether the respondent was in a formal or informal polygamous union at baseline (among other variables) in the regression-based calculation of the treatment effect to ensure that preexisting differences between treatment and control do not confound our estimates of interest.

Table 3.1 Balance and attrition patterns (demographic and wealth characteristics)

Variable	(1) Control Nonattritors	(2) Nonattritors	(3) Difference	(4) Beta2	(5) Beta3	(6) Beta3– Beta2
Respondent is female	0.66 (0.02)	0.66 (0.02)	–0.00 [0.93]	–0.08	0.00	0.08 [0.25]
Respondent is in a monogamous marriage or informal union	0.54 (0.02)	0.58 (0.02)	–0.04 [0.12]	0.03	–0.01	–0.04 [0.57]
Respondent is in a polygamous marriage or informal union	0.11 (0.01)	0.08 (0.01)	0.03 [0.05]	0.06	–0.04	–0.10 [0.14]
Household member has completed primary school (1 = yes, 0 = no)	0.44 (0.02)	0.47 (0.02)	–0.03 [0.18]	–0.03	–0.06	–0.03 [0.73]
Age	45.65 (0.56)	44.99 (0.53)	0.65 [0.40]	–3.05	1.59	4.64 [0.12]
Household size	4.86 (0.09)	5.08 (0.10)	–0.20 [0.12]	0.01	–0.51	–0.52 [0.22]
Household has a female head	0.33 (0.02)	0.33 (0.02)	–0.00 [0.92]	–0.06	0.02	0.09 [0.24]
Head's primary occupation is in agriculture	0.87 (0.01)	0.87 (0.01)	–0.00 [0.94]	–0.04	–0.02	0.02 [0.80]
First tercile land asset category	0.39 (0.02)	0.40 (0.02)	–0.02 [0.42]	0.06	0.04	–0.02 [0.79]
Third tercile land asset category	0.25 (0.01)	0.25 (0.01)	0.00 [0.86]	0.03	–0.06	–0.09 [0.14]
First tercile asset category	0.32 (0.02)	0.33 (0.02)	–0.01 [0.81]	0.03	– 0.04	0.02 [0.85]
Third tercile asset category	0.32 (0.02)	0.32 (0.01)	0.01 [0.79]	–0.04	0.00	0.04 [0.64]
N	913	966				

Source: Author's calculations.

Notes: Standard errors in parentheses. P values in brackets for t tests of difference in means. Columns 4–6 are coefficients of a regression where column 1 indicator is predicted as a function of attrition (Beta2) and the interaction of treatment and attrition (Beta3).

Table 3.2 (columns 1–3) displays the averages of 15 outcomes collected at baseline by treatment assignment. Balancing tests are susceptible to the problem of multiplicity, where the chance of a Type I error (rejection of the null hypothesis when it is true) increases along with the number of hypotheses. To determine whether any detected outcome differences between treatment and control groups are due to multiplicity, a Sidak adjustment is made to the p-value, such that a difference is considered significant only when the p-value is less than $1 - (1 - \alpha)^{1/K}$ assuming a significance level α of 0.1 and K is the number of outcomes under investigation (Abdi 2007). Our findings indicate a small pretreatment difference in only one outcome between the control and treatment groups upon accounting for the familywise error rates.

Table 3.2 Balance and attrition patterns (outcomes)

Variable	(1) Control Nonattritors	(2) Treated Nonattritors	(3) Difference	(4) Beta2	(5) Beta3	(6) Beta3– Beta2
Answered question about widow's entitlement to deceased husband's land correctly	0.66	0.70	–0.04	0.03	–0.07	–0.10
	(0.02)	(0.01)	[0.09]			[0.13]
Answered question about recognized son's entitlement to inheritance correctly	0.79	0.78	0.01	–0.02	–0.00	0.02
	(0.01)	(0.01)	[0.51]			[0.79]
Answered question about government having the right to expropriate land for public use	0.47	0.46	0.02	0.01	–0.07	–0.08
	(0.02)	(0.02)	[0.51]			[0.31]
Answered question about who to approach in unresolved land conflict correctly	0.09	0.05	0.04	–0.03	0.03	0.06
	(0.01)	(0.01)	[0.00]			[0.13]
Respondent has exclusive or joint right to sell land	0.59	0.60	–0.00	–0.13	0.06	0.19
	(0.02)	(0.02)	[0.88]			[0.01]
Respondent has joint or exclusive right to bequeath land	0.74	0.72	0.02	–0.13	0.03	0.16
	(0.01)	(0.01)	[0.35]			[0.02]
Primary business decisionmaker on at least one parcel exclusively	0.67	0.66	0.01	–0.11	0.06	0.17
	(0.02)	(0.02)	[0.66]			[0.01]
Primary output decisionmaker on at least one parcel exclusively	0.66	0.65	0.01	–0.08	0.04	0.12
	(0.02)	(0.02)	[0.70]			[0.07]
Household experienced a dispute on at least one parcel in the last 12 months	0.08	0.08	–0.01	–0.02	0.02	0.04
	(0.01)	(0.01)	[0.61]			[0.23]
Household expects dispute on at least one parcel in the next 5 years	0.12	0.12	0.01	–0.01	0.04	0.05
	(0.01)	(0.01)	[0.66]			[0.39]
Aware of paralegal in village	0.03	0.04	–0.01	–0.03	0.01	0.04
	(0.01)	(0.01)	[0.27]			[0.01]
Has sought paralegal advice in the last 12 months	0.00	0.00	–0.00	–0.00	–0.00	0.00
	(0.00)	(0.00)	[0.76]			[0.66]
Would refer one to paralegal for help on land, familial, and marital disputes	0.02	0.03	–0.01	–0.00	–0.00	–0.00
	(0.01)	(0.01)	[0.19]			[0.88]
Attended seminar on legal rights in the last 12 months	0.01	0.01	–0.00	–0.01	–0.00	0.00
	(0.00)	(0.00)	[0.93]			[0.75]
N	890	942				

Source: Author's calculations.

Notes: Standard errors in parentheses. P values in brackets for t tests of difference in means. Columns 4–6 are coefficients of a regression where column 1 indicator is predicted as a function of attrition (Beta2) and the interaction of treatment and attrition (Beta3).

We next verify that any changes in the sample due to attrition are also uncorrelated with treatment assignment. Twenty-five percent and 22 percent of the respondents attrited in the control group and treatment group, respectively. Even though the attrition rates appear similar across treatment groups, we determine whether the composition of the control and treatment groups is the same postbaseline. In particular, we use the following regression to compare the difference in the average characteristics between the nonattriters and attriters in the control and treatment groups:

$$Y_{ij} = \beta_0 + \beta_1 T_j + \beta_2 \text{Attrit}_i + \beta_3 T_j \times \text{Attrit}_i + \varepsilon_{ij}. \quad (2)$$

Parameter estimates for β_2 , β_3 , and $\beta_3 - \beta_2$ are provided in columns 4–6 of Tables 3.1 and 3.2. The results indicate no compositional differences in the demographic and wealth characteristics of the respondents in each assigned group. However, compositional differences are found in five of the outcomes collected at baseline.

To address the concern that the estimates of interest may be biased due to compositional differences in assignment groups posttreatment, we perform two additional robustness checks when estimating the ITT effects. First, we provide estimates of the regressions using inverse probability weights (Fitzgerald, Gottschalk, and Moffit 1998). The inverse probability weights are formulated using the ratio of the predicted probabilities of remaining in the sample from restricted and unrestricted probit models. The results from the unrestricted probit model including the sample of attriters and nonattriters are included in the Table A.2, where the number of visits needed to complete the baseline survey and indicators for interviewers at endline are used as instruments. Second, we provide upper and lower bounds of the treatment effect accounting for selective attrition using the method in Lee (2009). Upper and lower bounds of the ITT are generated nonparametrically. The proportion of nonmissing observations between the treatment and control groups divided by the total number of observations in the treatment group is used to establish thresholds p and $1 - p$ in which to trim the distribution of the outcome in the treatment group. The upper (lower) bound is computed by taking the difference between the average outcome of the treatment group where the distribution is trimmed below (above) threshold p ($1 - p$) and the control group.

A final threat to the internal validity is the possibility of information spillovers across villages. In our region of study, religious places of worship can service multiple communities. Churches and other communal structures offer forums for celebration and other organized meetings (which might include those initiated by a paralegal).¹⁰ We therefore use exogenous variation in the assignment of near treatment villages generated by the village-level randomization to account for cross-village spillovers in specification (3):

$$\Delta Y_{ij} = \beta_0 + \beta_1 T_j + \beta_x X_{ij} + \beta_d \check{T}_d + \Delta \varepsilon_{ij}. \quad (3)$$

The additional variable $\check{T}_d$ signifies whether the individual lives within distance d from a treatment community. We assume potential spillovers in control communities within 3 kilometers of a treatment community (the average distance between control and treatment villages is 5 kilometers). Thus, specification (3) allows for the measurement of the spillover effects on individuals within close proximity of the intervention sites, β_d .

Because we had not stratified the design explicitly to measure spillover effects (Baird et al. 2014), a few assumptions are underlying the justification of this model. The first assumption is that we have sufficient power to detect an effect. Our power calculations suggest that the ability to detect a statistically significant effect for a cluster size as small as 19 (the number of villages in the spillover category) will be possible only for effects much larger than an increase of 0.4 standard deviations from the mean. Second,

¹⁰ A recent study in the United States shows that social networks, exogenously measured by historical church mergers, can have strong influences on rural behavior, such as agricultural input adoption (Wilkes and Stevens 2014).

we presume that the characteristics are balanced across the three control, treatment, and spillover groups. The results in Table A.3 suggest that the covariates are balanced across most categories.

Summary Statistics

Table 3.3 displays the average values of the demographic and wealth characteristics of men and women in our sample, as well as their legal knowledge, attitudes, and practices related to land over time. The average ages of women and men at baseline were 46 and 43 years old, respectively. The fraction of men having completed a primary education exceeds the fraction of women by 20 percent, despite the only slight difference in average ages. Only 23 percent of women live in households falling in the third land asset tercile category, compared with 30 percent of men. These figures suggest that women in our sample are deficient in wealth and human capital as compared with men.

Comparing the legal knowledge and awareness of legal service providers by the gender of the respondent at baseline elicits the information barriers women face in securing their access to land. Fewer women are aware of a paralegal residing in their village at baseline than men. Moreover, only 3 percent of women (compared with 13 percent of men) are able to give an accurate response of the appropriate institution to turn to for unresolved land conflicts, the ward tribunal. Approximately 33 percent of women (compared with 49 percent of men) hold the point of view that the land tribunal treats cases fairly. The above factors suggest two possible mechanisms in which a paralegal program could increase women's access to legal aid: enhancing institutional knowledge of where to seek legal counsel and increasing women's confidence in formal legal service providers.

Marked differences in land practices suggest that cultural barriers additionally constrain women's access to land. Only 48 percent of women at baseline have the right to jointly or exclusively sell land, compared with 82 percent of men. Similarly, the majority of men (90 percent) claim they have the joint or exclusive right to bequeath land, compared with 64 percent of women. The gendered differentials in property rights translate to decisionmaking on parcels. For example, a lower proportion of women report themselves as the primary decisionmaker with regard to agricultural inputs (54 percent compared with 92 percent) or decisions related to agricultural output on at least one parcel of the household (51 percent compared with 92 percent). The inertia in cultural beliefs that favor men in landownership and decisionmaking support the dual components of the paralegal program. That is, not only does the paralegal program place trained volunteers for the purpose of providing free legal services, but also the community volunteers seek to shift perceptions toward gender equality through the periodic implementation of sensitization campaigns and seminars.

Table 3.3 Means of gender-differentiated outcomes over time

Variable	Female baseline	Female endline	Female diff p-value	Male baseline	Male endline	Male diff p-value
<i>Demographic and Wealth Characteristics</i>						
Monogamous union	0.43	0.42	0.60	0.81	0.83	0.60
Polygamous union	0.08	0.08	0.72	0.12	0.11	0.61
Primary education	0.39	0.38	0.47	0.59	0.57	0.58
Age	46.39	47.91	0.03	43.28	44.51	0.18
Total land first tercile	0.43	0.42	0.50	0.32	0.30	0.54
Total land third tercile	0.23	0.25	0.21	0.30	0.34	0.16
<i>Knowledge Outcomes</i>						
Widow's entitlement to deceased husband's land	0.69	0.71	0.26	0.67	0.77	0.00
Recognized son's entitlement to inheritance	0.76	0.70	0.00	0.83	0.78	0.06
Government has the right to expropriate land for public use	0.39	0.38	0.56	0.60	0.51	0.00
Should approach ward tribunal for unresolved land conflict	0.03	0.04	0.21	0.13	0.18	0.03
<i>Attitude Outcomes</i>						
Equal rights to land		0.62			0.63	
Wife should inherit land		0.66			0.68	
Land tribunal treats cases fairly		0.33			0.49	
Right to express opinion		0.69			0.83	
<i>Practice Outcomes</i>						
Right to sell	0.48	0.33	0.00	0.82	0.67	0.00
Right to bequeath	0.64	0.46	0.00	0.90	0.78	0.00
Primary business decisionmaker	0.54	0.56	0.26	0.92	0.80	0.00
Primary output decisionmaker	0.51	0.56	0.02	0.92	0.83	0.00
Had dispute	0.08	0.08	0.59	0.09	0.10	0.58
Expect dispute	0.11	0.09	0.08	0.13	0.11	0.24
Aware of paralegal	0.03	0.07	0.00	0.06	0.15	0.00
Paralegal advice in last year	0.00	0.00	0.45	0.01	0.00	0.46
Would refer one to paralegal	0.04	0.04	0.79	0.01	0.06	0.00
Attended seminar	0.01	0.01	0.76	0.02	0.02	0.97
N	1,215			617		

Source: Author's calculations.

Finally, we describe the characteristics of paralegals relative to the average respondents in our sample since the messenger's human and social capital endowments will likely influence the quality and transmission of legal information. The descriptive statistics in Table 3.4 illustrate that a minority of paralegals are female. Furthermore, they are much younger than the average respondent (30 years old compared with 47 years old) and significantly more educated per the requirements of the program. While the predominant sex and age group of the paralegals raise concern about their approachability to members in need of legal services, their social capital exceeds that of the average respondent. Paralegals are much more likely to participate in women and youth, credit, and farmer groups than the average respondent. They are also more likely to be engaged in paid employment and in self-employed activities outside of agriculture. The employment profile of paralegals sheds light on the pervasive opportunity costs of paralegals spending time counseling, which possibly explains the 16 percent attrition rate from the program over the period of a year.

Table 3.4 Comparing characteristics of paralegals and farmers in the sample at endline

Characteristics	Sample mean	Sample SD	Paralegal mean	Paralegal SD
Female	0.67	0.47	0.29	0.46
monogamous union	0.55	0.50	0.48	0.50
polygamous union	0.09	0.29	0.08	0.27
primary education	0.44	0.50	0.98	0.12
Age	46.79	16.82	29.98	9.23
Household size	5.03	2.72	4.97	2.33
Paid work	0.10	0.29	0.17	0.38
Self-employed agriculture	0.82	0.38	0.76	0.43
Self-employed nonagriculture	0.09	0.29	0.30	0.46
Unpaid work	0.75	0.43	0.74	0.44
Women or Youth Group Participation	0.20	0.40	0.38	0.49
Credit group participation	0.12	0.33	0.23	0.42
Farmer group participation	0.09	0.29	0.17	0.38
N	1,754		66	

Source: Authors.

4. RESULTS

Legal Knowledge, Attitudes, and Practices Related to Gender-Equal Land Rights

We first describe the extent to which individuals in the treatment communities were cognizant of the paralegal program and reported taking advantage of the services offered in the community. ITT and TOT¹¹ estimates are reported in Table 4.1. A greater proportion of women (7 percent) and men (12 percent) in the treatment communities knew of a paralegal living in their village. There is, however, no statistically significant ITT (treatment assignment by village) or TOT (actual treatment) evidence that the men and women in our sample, within the last year, sought help from the paralegals (Panel A); attended a seminar on legal rights; or would refer a person to a paralegal for advice on conflict over land boundaries with a neighbor, family arguments over who should inherit their land, stolen property, or marital disputes and separation (Panel B).

We next examine whether individuals exposed to the paralegal program were more knowledgeable on land-related legal issues. Table 4.2 exhibits ITT and TOT estimates of the paralegal intervention on changes of four legal knowledge indicators.¹² We find that both men and women were significantly more knowledgeable on whether the government had the right to expropriate land for public use. For example, the ITT estimates suggest treated women were 11 percent and treated men were 17 percent more likely to answer this legal question correctly. The TOT estimates produce slightly larger magnitudes of the program effects on the order of 13 and 20 percent, respectively, for women and men. However, the program affected knowledge of men regarding whom to approach in an unresolved conflict over a piece of land worth more than 2 million TZS, whereas there was no significant measurable impact for women. These male knowledge effects alone remain significant when adjusting the p-value for the familywise error rate.

Tables 4.3 and 4.4 present the ITT and TOT estimates of the impact of the intervention on the attitudes and land practices of women and men. Of the set of 10 outcomes, only one of the attitude outcomes changes due to the intervention. Specifically, 6 percent (according to the ITT estimate) of women in communities with trained paralegals were more likely to believe that wives should inherit land when their husbands die and no children are involved at endline. We further verify that the attitudes and land practices remain consistently unaffected by the program when accounting for selective attrition using inverse probability weights (Tables A.6 and A.7) and by calculating the Lee Bounds for the ITT effects (Table A.8). Interestingly, the Lee Bound estimates suggest modest negative impacts of the program on individual rights to sell (men and women) and bequeath (men alone) land. For example, taking the most conservative estimate (that is, the upper bound) attributes a reduction in the proportion of women who jointly or exclusively have the right to sell at least one parcel of their land to the intervention on the order of 1 percent (or an effect size relative to the mean control of 1.3 percent).

¹¹ The randomized assignment indicator is deemed a strong instrument for communities that had a trained paralegal for the duration of the one-year program, according to the t statistics (Table A.4) and F statistics on the excluded instruments (Tables 4.1 and 4.2, both panels).

¹² The parameters included in Table A.5 indicate that the ITT estimates are robust to accounting for selective attrition using the inverse probability weights.

Table 4.1 Effects of community-based legal aid program on paralegal awareness and use

PANEL A		Aware of paralegal in village				Paralegal advice in 12 months			
CBLA treatment assignments by village (ITT)	0.07	0.12			0.00	0.00			
	(0.02)***	(0.03)***			(0.00)	(0.01)			
CBLA actual treatment (TOT)			0.08	0.15			0.00	0.00	
			(0.02)***	(0.04)***			(0.01)	(0.01)	
R^2	0.03	0.04	0.03	0.01	0.00	0.00	0.00	0.00	
N	1,241	638	1,241	638	1,241	638	1,241	638	
Sample	Women	Men	Women	Men	Women	Men	Women	Men	
P-value (score): Treatment_Male=Treatment_Female		0.01				0.81			
Bonferroni–Sidak adjusted p-value	0.00	0.00			0.94	0.99			
Kleibergen–Paap Wald F statistic			348.36	376.66			348.36	376.66	
Baseline means	0.03	0.04			0.00	0.01			

PANEL B		Would refer one to paralegal for help on land, familial, and marital disputes				Attended seminar on legal rights in the last 12 months			
CBLA treatment assignments by village (ITT)	0.01	0.01			–0.00	0.01			
	(0.01)	(0.01)			(0.00)	(0.01)			
CBLA actual treatment (TOT)			0.02	0.01			–0.01	0.01	
			(0.01)	(0.01)			(0.01)	(0.01)	
R^2	0.02	0.01	0.02	0.01	0.02	0.02	0.01	0.02	
N	1,241	638	1,241	638	1,219	618	1,219	618	
Sample	Women	Men	Women	Men	Women	Men	Women	Men	
P-value (score): Treatment_Male=Treatment_Female		0.90				0.37			
Bonferroni–Sidak adjusted p-value	0.69	0.97			0.76	0.92			
Kleibergen–Paap Wald F statistic			348.36	376.66			364.07	350.28	
Baseline means	0.03	0.01			0.01	0.02			

Source: Author's calculations.

Notes: CBLA = community-based legal aid; ITT = intent to treat; TOT = treatment on the treated. Standard errors in parentheses, * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Baseline marital status, education, age, age-squared, land tercile categories, and district variables included.

Table 4.2 Effects of community-based legal aid program on legal knowledge

PANEL A	Answered widow's entitlement to deceased husband's land question correctly				Answered question about recognized son's entitlement to inheritance correctly			
CBLA treatment assignments by village (ITT)	0.02	−0.01			0.03	−0.04		
	(0.03)	(0.04)			(0.04)	(0.04)		
CBLA actual treatment (TOT)			0.03 (0.04)	−0.01 (0.05)			0.04 (0.05)	−0.05 (0.05)
R^2	0.00	0.03	0.00	0.03	0.01	0.04	0.01	0.04
N	1,219	617	1,219	617	1,219	618	1,219	618
Sample	Women	Men	Women	Men	Women	Men	Women	Men
P-value (score): Treatment_Male=Treatment_Female		0.64				0.22		
Bonferroni–Sidak adjusted p-value	0.93	1.00			0.92	0.85		
Kleibergen–Paap Wald F statistic			364.07	351.44			364.07	350.28
Baseline means	0.67	0.66			0.77	0.83		

PANEL B	Answered question about gov't having the right to expropriate land for public use correctly				Answered question about who to approach in unresolved 2 million TZS land conflict correctly			
CBLA treatment assignments by village (ITT)	0.11	0.17			0.02	0.10		
	(0.05)**	(0.06)***			(0.01)	(0.04)**		
CBLA actual treatment (TOT)			0.13 (0.06)**	0.20 (0.08)***			0.02 (0.02)	0.12 (0.05)**
R^2	0.01	0.02	0.01	0.01	0.01	0.02	0.01	0.02
N	1,219	618	1,219	618	1,241	638	1,241	638
Sample	Women	Men	Women	Men	Women	Men	Women	Men
P-value (score): Treatment_Male=Treatment_Female		0.06				0.02		
Bonferroni–Sidak adjusted p-value	0.14	0.03			0.61	0.05		
Kleibergen–Paap Wald F statistic			364.07	350.28			348.36	376.66
Baseline means	0.40	0.62			0.04	0.16		

Source: Author's calculations.

Notes: CBLA = community-based legal aid; ITT = intent to treat; TOT = treatment on the treated. Standard errors in parentheses, * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Baseline marital status, education, age, age-squared, land tercile categories, and district variables included.

Table 4.3 Effects of community-based legal aid program on attitudes

PANEL A		Equal rights to land				Wife should inherit land		
CBLA treatment assignments by village (ITT)	0.01 (0.03)	−0.06 (0.04)			0.06 (0.03)**	−0.01 (0.04)		
CBLA actual treatment (TOT)			0.01 (0.03)	−0.07 (0.04)			0.07 (0.03)**	−0.01 (0.05)
R^2	0.03	0.03	0.03	0.03	0.03	0.05	0.02	0.05
N	1,241	638	1,241	638	1,241	638	1,241	638
Sample	Women	Men	Women	Men	Women	Men	Women	Men
P-value (score): Treatment_Male=Treatment_Female		0.09				0.33		
Bonferroni–Sidak adjusted p-value	0.99	0.41			0.16	1.00		
Kleibergen–Paap Wald F statistic			348.36	376.66			348.36	376.66
Baseline means	0.61	0.65			0.63	0.68		

PANEL B		Land and housing tribunal treats cases fairly				Right to express my opinion		
CBLA treatment assignments by village (ITT)	0.04 (0.03)	0.05 (0.04)			−0.03 (0.03)	−0.05 (0.03)		
CBLA actual treatment (TOT)			0.05 (0.03)	0.05 (0.05)			−0.04 (0.04)	−0.05 (0.04)
R^2	0.05	0.03	0.05	0.03	0.03	0.03	0.03	0.02
N	1,241	638	1,241	638	1,241	638	1,241	638
Sample	Women	Men	Women	Men	Women	Men	Women	Men
P-value (score): Treatment_Male=Treatment_Female		0.48				0.37		
Bonferroni–Sidak adjusted p-value	0.48	0.66			0.70	0.44		
Kleibergen–Paap Wald F statistic			348.36	376.66			348.36	376.66
Baseline means	0.32	0.46			0.71	0.85		

Source: Author's calculations.

Notes: CBLA = community-based legal aid; ITT = intent to treat; TOT = treatment on the treated. Standard errors in parentheses, * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Baseline marital status, education, age, age-squared, land tercile categories, and district variables included.

Table 4.4 Effects of community-based legal aid program on land practices

PANEL A	Right to sell				Right to bequeath				Primary business decisionmaker on at least one parcel			
CBLA treatment assignments by village (ITT)	−0.04	−0.06			−0.01	−0.06			0.00	−0.01		
	(0.05)	(0.05)			(0.04)	(0.04)			(0.02)	(0.04)		
CBLA actual treatment (TOT)			−0.05	−0.07			−0.01	−0.07			0.00	−0.01
			(0.06)	(0.06)			(0.05)	(0.05)			(0.03)	(0.05)
R^2	0.03	0.01	0.03	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
N	1,241	638	1,241	638	1,241	638	1,241	638	1,241	638	1,241	638
Sample	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
P-value (score): Treatment_Male=Treatment_Female		0.44				0.24				0.81		
Bonferroni–Sidak adjusted p-value	0.96	0.77			1.00	0.68			1.00	1.00		
Kleibergen–Paap Wald F statistic			348.36	376.66			348.36	376.66			348.36	376.66
Baseline means	0.46	0.78			0.64	0.85			0.54	0.89		
PANEL B	Primary output decisionmaker on at least one parcel				Experienced dispute				Expect dispute			
CBLA treatment assignments by village (ITT)	−0.01	0.01			0.01	−0.02			0.01	−0.01		
	(0.03)	(0.04)			(0.02)	(0.03)			(0.02)	(0.03)		
CBLA actual treatment (TOT)			−0.01	0.01			0.01	−0.02			0.01	−0.01
			(0.03)	(0.05)			(0.02)	(0.03)			(0.03)	(0.04)
R^2	0.02	0.03	0.02	0.03	0.01	0.02	0.01	0.02	0.01	0.01	0.01	0.01
N	1,241	638	1,241	638	1,237	638	1,237	638	1,237	638	1,237	638
Sample	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
P-value (score): Treatment_Male=Treatment_Female		0.75				0.34				0.73		
Bonferroni–Sidak adjusted p-value	1.00	1.00			1.00	0.99			1.00	1.00		
Kleibergen–Paap Wald F statistic			348.36	376.66			350.72	376.66			350.72	376.66
Baseline means	0.51	0.90			0.08	0.07			0.12	0.12		

Source: Author's calculations.

Notes: CBLA = community-based legal aid; ITT = intent to treat; TOT = treatment on the treated. Standard errors in parentheses, * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Baseline marital status, education, age, age-squared, land tercile categories, and district variables included.

Spillover

We next examine the possibility that the existence of information spillovers, particularly due to the proximity between the treatment and control villages, may attenuate the ITT estimates of the effect of the intervention on individual knowledge, attitudes, and land practices. Table 4.5 presents the results from the spillover model, which focuses on changes in knowledge and attitudes surrounding land. The effects on the knowledge of whether the government has the right to expropriate public land, knowledge of whom to approach in a conflict over valuable land, and opinions of whether a wife should inherit land when no children are involved remain largely robust and isolated to the treatment group. However, in accounting for proximity to the treatment group, we observe a few additional effects unobserved in the previous specification. First, we witness a large effect of 15 percent on the males' knowledge of whether a recognized son is entitled to his inheritance in the spillover group. Second, we witness in both the spillover and treatment groups a greater tendency for men and women to view that the land and housing tribunal treats cases fairly. Our initial specification indicated no significant differences in the sentiment of the land and housing tribunal, while the estimates generated from the spillover model suggests an increase in positive perceptions of the land and housing tribunal by 9 (11) percent in the spillover groups and 6 (8) percent in the treatment groups for women (men).

Table 4.5 Intent-to-treat estimates of community-based legal aid program effects accounting for spillovers

PANEL A: Knowledge	Answered widow's entitlement to deceased husband's land question correctly		Answered question about recognized son's entitlement to inheritance correctly		Answered question about gov't having the right to expropriate land for public use		Answered question about who to approach in unresolved 2 million TZS land conflict correctly	
Spillover	-0.01 (0.05)	0.03 (0.07)	-0.01 (0.07)	0.15 (0.06)**	0.04 (0.08)	0.02 (0.11)	-0.01 (0.02)	-0.06 (0.07)
CBLA treatment assignments by village	0.02 (0.04)	0.00 (0.05)	0.03 (0.04)	0.01 (0.05)	0.12 (0.06)**	0.18 (0.07)**	0.01 (0.01)	0.08 (0.04)**
R^2	0.00	0.03	0.01	0.05	0.01	0.02	0.01	0.02
N	1,219	617	1,219	618	1,219	618	1,241	638
Sample	Women	Men	Women	Men	Women	Men	Women	Men
Baseline means	0.67	0.66	0.77	0.83	0.39	0.62	0.04	0.17

PANEL B: Attitudes	Equal rights to land		Wife should inherit land		Land and housing tribunal treats cases fairly		Right to express my opinion	
Spillover	0.02 (0.05)	0.01 (0.06)	0.04 (0.05)	-0.03 (0.07)	0.09 (0.03)**	0.11 (0.05)**	0.03 (0.04)	0.05 (0.04)
CBLA treatment assignments by village	0.02 (0.03)	-0.05 (0.04)	0.07 (0.03)**	-0.02 (0.04)	0.06 (0.03)**	0.08 (0.04)*	-0.03 (0.03)	-0.03 (0.03)
R^2	0.03	0.03	0.03	0.05	0.06	0.04	0.03	0.03
N	1,241	638	1,241	638	1,241	638	1,241	638
Sample	Women	Men	Women	Men	Women	Men	Women	Men
Baseline means	0.61	0.65	0.63	0.69	0.31	0.45	0.71	0.85

Table 4.5 Continued

PANEL C: Awareness	Aware of paralegal in village		Paralegal advice in 12 months		Would refer one to paralegal for help on land, familial, and marital disputes		Attended seminar on legal rights in the last 12 months	
Spillover	-0.03 (0.03)	0.06 (0.04)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.02)	0.00 (0.01)	0.02 (0.01)**	0.01 (0.02)
CBLA treatment assignments by village	0.06 (0.02)***	0.14 (0.04)***	0.00 (0.00)	0.00 (0.01)	0.01 (0.01)	0.01 (0.01)	0.00 (0.00)	0.01 (0.01)
R^2	0.03	0.04	0.01	0.00	0.02	0.01	0.02	0.02
N	1,241	638	1,241	638	1,241	638	1,219	618
Sample	Women	Men	Women	Men	Women	Men	Women	Men
Baseline means	0.03	0.04	0.00	0.01	0.03	0.01	0.01	0.02

Source: Author's calculations.

Notes: Baseline means and standard errors computed using inverse probability weights. Standard errors are in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Baseline marital status, education, age, age-squared, land tercile categories, and district variables included. CBLA = community-based legal aid.

The spillover effects on legal knowledge and attitudes are further corroborated by indications of paralegal exposure in both groups. Men in communities within close proximity of the treatment groups were more likely to be aware of paralegals in their village than men in the pure control group, although the ITT is imprecisely estimated (Table 4.5, Panel C). Furthermore, women in the spillover group (not the treatment group) reported a greater incidence of attending a seminar on legal rights in the last 12 months than the pure control.¹³ These auxiliary outcomes suggest positive externalities to the program, through access to legal seminars and information that improved relations or knowledge regarding the main formal institution available to resolve conflicts, the land and housing tribunal.

Heterogeneity in Vulnerability and Transaction Costs

The demand for legal services to a certain extent will depend on the vulnerability of the community to land conflict. Moreover, a recurrent problem in the implementation of programs is the mobility constraints incurred to reach those in need in remote places. We thus explore how the utilization of services and knowledge, attitudes, and practice outcomes vary with the potential for land conflict and size of communities.

CBLA programs target women and children vulnerable to land confiscation. Women who have recently separated from their husbands because of death or divorce are typically considered the most at risk. We therefore first compare the effects of our program on women's outcomes by whether they live in a community with a greater prevalence of adult mortality (above-median mortality of 15–49 year olds) and divorces (above-median number of divorces) at baseline. We estimate (1) including the community indicators and their interaction with the treatment variable in separate regressions.¹⁴ Then we graph the 90 percent confidence intervals and point estimates of the ITT effects by vulnerability groups in Figures 4.1 and 4.2 (see Tables A.12 and A.13 for estimates of the parameters and standard errors).

¹³ These results are robust to defining the spillover groups according to the median minimum distance of a control community from a treatment group (4.3 kilometers). We additionally observe that women were also more likely to expect a dispute in the future (Table A.9), but these are not robust to the definition of the spillover group.

¹⁴ While the experimental design did not intrinsically account for these stratifications, balancing tests suggest that the statistically significant differences in variable means across treatment and control groups within these stratifications are rather small in magnitude (Tables A.10 and A.11).

Figure 4.1 ITT estimates of CBLA program effects by adult mortality

Source: Authors.

Note: ITT = intention to treat on the treated; CBLA = community-based legal aid.

Figure 4.2 ITT estimates of CBLA program effects on women by prevalence of divorce

Source: Authors.

Note: ITT = intention to treat on the treated; CBLA = community-based legal aid.

Women exposed to the program who live in areas with lower incidence of adult mortality and divorce were more likely to benefit from the program. They obtained a heightened awareness of the paralegals in their village. Furthermore, they were more likely to attend a legal seminar. However, we also witness systematic drawbacks from the program in that women in these villages were more likely to expect a dispute and feel less able to express their opinion.

In contrast, women in program villages where divorce is pervasive were less aware of paralegals and less likely to attend a seminar (p-value = 0.12) than women in other treated communities. They also experienced a decline in their right to bequeath land though imprecisely estimated (p-value = 0.12). This is consistent with men generally reacting negatively to the program in the treatment communities where divorce is more common. First, we observe a reduction in the accuracy in males' responses to the question regarding a widow's entitlement to her deceased husband's land. Second, the attitudes of men in divorce-prone areas shift away from notions of equality, a wife's entitlement to inheritance (p-value = 0.15), and the right to express one's opinion. The aforementioned findings suggest that the one-year program may not be sufficient to remove the barriers women encounter to legal justice in communities at greater jeopardy of land disputes.

We next examine whether transaction costs inhibited the paralegals' ability to reach potential beneficiaries of the program by comparing the ITT estimates by village size at baseline. Figures 4.3 and 4.4 display the 90 percent confidence intervals and point estimates from regressions that include an above-median population and above-median acreage indicator and their interactions with the treatment variable.¹⁵ Tables A.16 and A.17 include estimates of the parameters and standard errors. In the smaller villages, we consistently observe that women were aware of the paralegal and were more likely to attend a legal seminar. Additionally, the paralegal program improved women's perceptions of equal rights, inheritance, and the land and housing tribunal in smaller villages. The paralegal program appeared to shift women's perceptions through activities such as seminars in areas with lower constraints on paralegal mobility. These efforts were not sufficient to modify land practices on behalf of women over the period of one year, but they did reduce men's rights to sell and bequeath land.

¹⁵ Balancing tests of treatment and control groups within village size stratifications reveal small differences in the means of variable averages except for the land asset variables, which are derived from the size of household farms (Tables A.14 and A.15).

Figure 4.3 ITT estimates of CBLA program effects on women by village population

Source: Authors.

Note: ITT = intention to treat on the treated; CBLA = community-based legal aid.

Figure 4.4 ITT estimates of CBLA program effects on women by village size

Source: Authors.

Note: ITT = intention to treat on the treated; CBLA = community-based legal aid.

5. COST-EFFECTIVENESS ANALYSIS

A critical complement to the findings in Section 4 from the impact evaluation is the assessment of the cost-effectiveness of providing legal aid services to rural men and women on land rights. This analysis contributes to thinking about how scarce public resources can be best allocated to achieve improved knowledge, attitudes, and practices on land rights through CBLA interventions. While cost-effectiveness analysis (CEA) has been applied in the literature mostly to public health activities,¹⁶ such studies have also been conducted in the context of other types of development interventions, such as education investments, in poor countries (Coady and Parker 2004; Tan, Lane, and Coustère 1997; Bedi and Marshall 1999).

CEA in the context of this study brings together cost and other information with the results from the impact evaluation. An important aspect of CEA is the determination of costs based on an appropriate framework. We collected detailed monthly data on costs incurred by the implementation agency for the intervention for the period of May 2013 through July 2014. The costs were all based on actual expenditures, and not on budgeted figures. Cost data were submitted by MHOLA every three months, giving opportunity for the research team to obtain timely clarification and ask for corrections in cases of incorrect entries. Data were obtained highly disaggregated by labor cost (including type of labor and type of compensation such as allowances, salary, stipends, and so forth), transport costs (for example, fuel), capital outlays (such as purchase of motorcycles, furniture), office operational costs, workshop and training expenses, and other categories. Where appropriate, expenditures were recorded at the district level of the two intervention districts, such that the intervention cost can be measured separately for each district. Some types of costs that were more centralized and were not direct field outlays were assigned to the central project office in Bukoba.

Since implementing staff also worked on other projects and interventions, information was obtained through timesheets on the actual time they allocated to the CBLA program, and this time was costed using salary information. This process captured actual staff contributions to the intervention, regardless of the extent of staff officially assigned to the project. A percentage of the agency's indirect costs equivalent to the share of this intervention's budget in the overall agency's budget for the two years concerned (2013 and 2014) are allocated to CBLA costs.

In CEAs it is necessary to keep in mind that the public (including third-sector) costs are not limited to those incurred by the institution that carried out the evaluated intervention. To consider how scaling up or replicating a given intervention can affect the full public expenditures necessary to implement it at a wider scope, it is important to also account for the expenses incurred by other public-sector entities in regard to the program, even if these entities are not the actual implementation agencies of the program. In the CBLA program, we collected monthly data on the time cost of public officials who were not project staff yet provided their services to the program, including through their involvement in workshops to train paralegals, CBLA meetings, and other program activities.

For all cost items, we estimate the share of the costs that is assumed to be accrued to provide services to women and men, using two types of gender-disaggregated data. One type, estimated based on the listing survey, is the gender breakdown in each village of the most likely target population for the intervention (household heads and spouses of household heads—which is also consistent with the demographic sampled for the impact evaluation). The other data type is the gender breakdown of the clients of the paralegals, which was collected in the paralegal survey at endline. The gendered cost share is then obtained under the corresponding two assumptions that (1) the larger the female population share in a given area, the larger the share of the costs in that area that can be assigned to women, and vice versa; and (2) the larger the female population share in the paralegals' client pool, again the larger the gender cost share. We apply the simplest rule for obtaining a cost breakdown by gender based on these gendered data on population size and paralegal effort, such that the rule has basic desirable properties.¹⁷ The cost

¹⁶ For example, Galárraga et al. (2009) provides a systematic review of CEA studies in one area of public health.

¹⁷ These include, for example, that if women's share both in population and in paralegal clientele is 0.5, the cost breakdown

breakdown by gender for a given cost item C then is $C_i = \frac{1}{2} C \cdot \left[(p_i s_i)^{1/2} - (1 - p_i)^{\frac{1}{2}} (1 - s_i)^{\frac{1}{2}} + 1 \right]$ where the subscript i indicates gender (men or women), and p and s are the gender share in the population in the intervention area and among service recipients, respectively.

All cost data are converted to real values,¹⁸ and present values are derived to the time of the endline evaluation (time T) for each (deflated) cost item C_t in month t , as $C_t^{pv} = \frac{C_t}{(1-\delta)^{(T-t)/12}}$. Sensitivity of the results are tested based on different assumptions about the annual discount rate δ . The cost of capital goods is spread out over time to reflect the fact that although they are acquired at one point in time, they are consumed over time. Specifically, the per-period costs of such goods can be computed as $C_t^K = \delta \cdot \frac{C_0^K \cdot (1+\delta)^n - S_n}{(1+\delta)^n - 1}$, where C_t^K is the computed cost per period of the capital good, C_0^K refers to the direct cost incurred to obtain the capital good at time 0, and S_n is the nominal amount at which the good could be resold after n periods. In principle, it is possible that time $t = 0$ in this context is well before the start of the evaluated intervention, and n as defined here is larger than the number of periods from the start of the evaluated intervention until the endline survey. However, the relevant spread-out cost of a capital good would take into account only the time periods in the study's time frame. In our analysis, rather than consider a resale value, we consider n to be the last period of the useful life of the capital good, and thus S_n to be zero.¹⁹

To derive cost-effectiveness ratios (CERs), the marginal effects obtained from the impact evaluation regressions, β_1^w and β_1^m in equation (1)²⁰ are used to obtain measures of total impact, that is, $\beta_1^w P^w$ and $\beta_1^m P^m$, respectively, where P^w and P^m are the number of women and men among all heads and spouses of heads in the intervention areas, respectively, as previously discussed. The total impact measures are made to correspond to the different types of marginal effects estimates. For example, in the case of β_1^w in the ITT estimation, P^w uses the relevant population based on the random assignment of villages to treatment, in the TOT estimates it is based on the actually treated villages, and in the spillover analysis it is based on the villages considered proximate enough to the treatment areas to be potentially subject to spillover effects, as was described in Section 4. Similarly, for the corresponding numerators in the CERs, the gender shares discussed above are adjusted to the different definitions of treatment or spillover areas.

Table 5.1 presents the cost-effectiveness ratios for outcomes related to CBLA services. Naturally, the CERs are derived only for those outcomes for which a statistically significant effect was detected, given that the “effectiveness” element of cost-effectiveness cannot apply where no impact was discerned in the regression analysis. As Table 5.1 shows, the cost per person of achieving outcomes related to knowledge and attitudinal changes with regard to land rights is moderate, ranging from approximately 10,600 TZS to 32,500 TZS, or \$6.50 to \$20.

At this point it needs underlining that the very nature of the intervention does not lend itself to disaggregation of costs by the different outcomes they bring about. In other words, it is not the case that certain inputs and activities are solely dedicated to bringing about certain outcomes, and other inputs to achieving other outcomes. Therefore, for example, the CER of 10,549 in Table 5.1 tells us that, accounting for the total costs of the intervention attributable to providing paralegal services to men, it takes about 10,600 TZS (or \$6.50) per man to improve his knowledge on land rights with regard to

is equal between men and women; in a hypothetical extreme case of women's population share being 0 (1), the female cost component is 0 (equal to the total amount of the cost item); symmetrically applying the rule to obtain the female and the male cost components and adding these up results in the size of the cost item.

¹⁸ The monthly cost data are expressed in 2010 constant values using Tanzania's National Bureau of Statistics monthly consumer price index.

¹⁹ As it was not possible to obtain Tanzania-specific useful lives for different capital items, we estimated these conservatively by doubling the useful lives as stated by US government guidelines for property and equipment capitalization of the different types of capital goods in our cost data (Section 1.35.6.10, “Property and Equipment Capitalization,” in IRS (2014)), assuming that capital goods in Africa south of the Sahara will be in active use at least double as long as those in developed countries.

²⁰ Equation (1) doesn't explicitly use these gender subscripts for notational simplicity.

government expropriation—but the same total expenditures on providing services to men also brought about other additional outcomes for men, as seen in the table.

Table 5.1 Results of cost-effectiveness analysis for treatment based on assignment and compliance

Outcome	Based on treatment assignment		Based on actual treatment	
	Women	Men	Women	Men
Aware of paralegal in village	25,088.78	14,611.69	26,183.20	15,435.97
Answered question about who to approach in unresolved 2 million TZS land conflict correctly		17,873.61		18,881.90
Answered question about gov't having the right to expropriate land for public use correctly	16,064.69	10,548.96	16,839.54	11,073.14
Wife should inherit	31,163.23		32,522.62	

Source: Authors.

Given the consistent methodology in deriving the CERs, these ratios can be compared against each other. A gender comparison of the ratios shows that in all cases of statistically significant results, the cost of bringing about any given outcome per man is lower than the cost per woman for the same outcome. For example, the cost per man of improving knowledge about the government expropriation of land is 66 percent of that of the cost of educating a woman on this topic. Similarly, the cost to raise awareness among men about the presence of paralegals in the village (about 14,600 TZS per man) is approximately 60 percent of that of the cost to raise such awareness among women (about 25,000 TZS per woman). However, the gender gap in cost-effectiveness is quantitatively somewhat narrower than if one considered the gender gap merely in terms of the marginal effects. For example, the marginal effect of the intervention on women's knowledge about government expropriation is 63 percent that of the effect on men's knowledge on this topic. This is because the CERs also take into account not only total impact, which is affected by differential population size between men and women in the treatment areas, but also total costs—affected among other things by differential effort placed in providing land paralegal services to men versus women, as discussed above in the context of the cost and noncost data used and analyzed.

Table 5.2 presents the CERs that account for spillover of the project beyond the intervention areas. The CERs in the first two columns of Table 5.2 are naturally much larger, since they reflect the cost of the total intervention but consider its improvement of knowledge, attitudes, and practices per person only in the areas outside of, but proximate to, the treatment areas. With these spillover areas being relatively small in scale, while the costs incurred by the intervention pertain to a much larger treatment area, the significantly larger CERs are not surprising. A gender comparison of the CERs with regard to spillover areas wherever this comparison is possible—namely, on the cost-effectiveness of increasing the sense of fair treatment by the land tribunal among men and women in spillover villages—shows that here the gender gap in cost-effectiveness dramatically narrows. The cost of increasing the experience of fair treatment by the land tribunal among men is nearly 90 percent that of the cost of doing so among women in spillover villages. Across all gender comparisons in the cost-effectiveness ratios that account for potential for spillover in Table 5.2, the gender gap is narrower in all cases than the equivalent gender comparisons of just the marginal effects.

Table 5.2 Results of cost-effectiveness analysis accounting for spillovers

Outcome	Spillover		Treatment assignment (control excludes spillover-villages)	
	Women	Men	Women	Men
Aware of paralegal in village			28,983.55	12,715.77
Answered question about who to approach in unresolved 2 million TZS land conflict correctly				21,563.42
Answered question about recognized son's entitlement to inheritance correctly		56,303.80		
Answered question about gov't having the right to expropriate land for public use correctly			14,502.59	10,177.59
Land and housing tribunal treats cases fairly	85,718.67	76,478.29	27,275.62	23,005.46
Wife should inherit			26,108.93	
Attended seminar on legal rights in the last 12 months	370,554.64			

Source: Authors.

Finally, since some assumptions were necessary in the cost-effectiveness analysis—in particular, concerning the use of a discount rate, and the useful life of capital costs—it is important to examine how widely the cost-effectiveness ratios vary with changes in these assumptions. The results in Tables 5.1 and 5.2 are from an annual discount rate of 3 percent and an assumed useful life of capital items double that in formal estimates for capital items in the United States, as discussed earlier. Appendix Table A.18 considers results for large variations in these assumptions: discount rates of 1 percent and 10 percent, and useful lives of capital equipment in Tanzania that are 1 times and 4 times those in the United States. It is apparent that our CERs are quite robust to such large changes in assumptions. For example, the cost per woman in the assigned treatment areas to increase her awareness of paralegals ranges from a minimum of 23,619 TZS to a maximum of 25,671 TZS across the four scenarios of discount rate and capital durability assumptions. The other CERs also vary only in fairly narrow bands, suggesting that these results are quite robust to the assumptions made.

6. CONCLUSION

CBLA programs were initiated to fill the void in legal justice for women and children who are evicted from their land and to reduce conflict and violence in areas with severe land pressure. We evaluate a one-year paralegal program in Tanzania that was devised to improve women's access and rights to land by raising awareness through sensitization activities conducted by a local trained paralegal and through his or her provision of mediation services and lawyer referrals. While individuals were aware of the paralegal in treatment communities, program benefits were largely limited in the short term.

Measuring the effects of the program by vulnerability to disputes and proxies for mobility costs faced by the paralegal shed light on possible variations necessary to improve the effectiveness of the program. First, the resources devoted to the program were not sufficient to alter the mind-set of individuals in areas prone to divorce and adult mortality. Although individuals living in these communities bear the greatest demand for these services, these communities had a lower rate of paralegal awareness than in others receiving the program. Furthermore, some backlash was seen among men on a widow's entitlement to her deceased husband's land and on rights for equality and to express one's own opinion. One possible criticism of the evaluation is the short duration of the program in the sense that altering strong social norms in favor of women may require a time horizon, primarily in areas ridden with strife over land. The potential for qualitatively different conclusions about gender resulting from a short-term analysis versus a long-term one also emerges when considering the results of the cost-effectiveness analysis. The gender gap in the unit costs to achieve outcomes suggests that bringing about attitudinal and knowledge changes is more affordable among men than among women—however, this study is able to examine the cost-effectiveness of only intermediate outcomes in the short term, and the implications for public investment in CBLA services would need to rely on further-reaching outcomes potentially realized over the longer term, such as men's and women's private investments in their land due to better land security, and men's and women's incomes and other indicators of their material welfare.

Second, paralegals face severe constraints on reaching those in need. The greatest benefits of the program were observed in smaller villages where paralegal networks may have been stronger and where reaching clients could therefore be easier. Women in smaller communities exposed to the program were more likely to attend seminars; were more aware of paralegals; and possessed positive attitudes regarding equal land rights, a wife's entitlement to inheritance, and the fairness of resolution practices of the land and housing tribunal. Women's improved perceptions of the land and housing tribunal are consistent with earlier work that shows that paralegal programs can increase access to the formal system of disadvantaged groups (Sandefur and Siddiqi 2013). Even if our sample of respondents had not utilized the paralegal firsthand, their impression might have been formulated by others who benefited from the program in the community.

Our findings have broader implications for existing CBLA programs in Tanzania and elsewhere. Even when localizing the program to the village level, numerous constraints are on the paralegal that may inhibit the delivery of free services. First, educated paralegals have competing interests on their time and therefore it is worth considering whether small, monetary incentives change the dynamic of the program and decrease paralegal attrition. Second, when visiting the remote villages, correspondences with the paralegals revealed that providing a mode of transportation would increase their ability to reach clients. Eighty-eight percent of paralegals declared that they spent their own money to facilitate their legal work and the majority spent their own money on transportation to reach clients. Future research on mechanisms to improve the delivery of services and outreach of paralegals would shed light on more sustainable CBLA models.

APPENDIX: SUPPLEMENTARY TABLES

Table A.1 Power calculations

Variable	Intra-cluster correlation	Mean	SD	MNC
Knowledge on widow's entitlement to land	0.04	0.68	0.47	27
Knowledge on son's entitlement to land	0.06	0.78	0.41	27
Knowledge on government right to expropriate land	0.08	0.46	0.50	44
Knowledge on ward tribunal	0.02	0.06	0.25	46
Right to sell land	0.05	0.57	0.49	33
Right to bequeath land	0.04	0.70	0.46	25
Primary business decisionmaker on at least one parcel	0.00	0.66	0.47	20
Primary output decisionmaker on at least one parcel	0.00	0.64	0.48	21
Had land dispute (last 12 months)	0.03	0.08	0.27	49
Expect dispute	0.06	0.12	0.32	56
Aware of paralegal in village	0.04	0.04	0.19	26
Received paralegal advice (last 12 months)	0.02	0.00	0.06	83
Would refer one for paralegal help on land, familial and marital disputes	0.01	0.03	0.17	25
Attended paralegal seminar on legal rights in last 12 months	0.00	0.01	0.11	41
Equal rights to land	0.03	0.62	0.49	29
Wife should inherit land	0.05	0.67	0.47	34
Believes ward tribunal fair	0.03	0.38	0.49	31
Right to express opinion	0.04	0.74	0.44	28

Source: Authors.

Note: MNC = minimum number of clusters needed to detect a statistically significant effect of a 0.4 standard deviation increase from the baseline average at the 10 percent critical level.

Table A.2 Probability of remaining in sample

Variable	Individual remains in sample at endline
Respondent is female	0.07*** (0.02)
Individual was born in year between 1941 and 1955	0.07** (0.04)
Individual was born in year between 1956 and 1970	0.03 (0.04)
Individual was born in year between 1971 and 1985	0.00 (0.04)
Individual was born in year between 1986 and 2000	-0.05 (0.04)
Household member has completed primary school (1 = yes, 0 = no)	0.05*** (0.02)
Household size	0.01** (0.00)
First tercile land asset category	-0.06*** (0.02)
Third tercile land asset category	-0.03 (0.02)
Interview took place in 2 visits	-0.08** (0.03)
Interview took place in 3 visits	-0.05 (0.16)
<i>N</i>	2,444

Source: Authors.

Notes: Marginal effects presented for the baseline explanatory variables. Standard errors in parentheses. Biharamulo district and 25 endline interviewer indicators included.

Table A.3 Means of variables across pure control, spillover, and treatment groups

Variable	(1) Pure control	(2) Spillover	(3) Treatment	(1)–(2) P-val.	(1)–(3) P-val.	(2)–(3) P-val.
Female	0.66	0.65	0.66	0.76	0.89	0.83
Monogamous union	0.55	0.53	0.58	0.40	0.17	0.06
Polygamous union	0.11	0.12	0.08	0.24	0.04	0.01
Primary education	0.42	0.51	0.47	0.00	0.01	0.16
Age	45.36	46.36	44.99	0.30	0.56	0.12
Household size	4.93	4.69	5.08	0.15	0.04	0.00
Female headed household	0.33	0.32	0.33	0.79	0.97	0.76
Head is employed in agriculture	0.87	0.84	0.87	0.18	0.81	0.11
Land first tercile	0.37	0.44	0.40	0.11	0.05	0.84
Land third tercile	0.27	0.22	0.25	0.12	0.31	0.37
Asset first tercile	0.32	0.32	0.33	0.09	0.75	0.04
Asset third tercile	0.32	0.33	0.32	0.21	0.38	0.05
Observations	653.00	260.00	966.00			

Source: Authors.

Table A.4 First-stage regression for the treatment-on-the-treated estimates

Variable	Actual treatment	
	Women	Men
Monogamous union	-0.0268 (0.0201)	-0.0232 (0.0335)
Polygamous union	0.0112 (0.0234)	0.0166 (0.0353)
Primary education	-0.00250 (0.0205)	0.00180 (0.0193)
Age	-0.00186 (0.00194)	-0.000809 (0.00180)
Age squared	1.39e-05 (1.71e-05)	1.39e-05 (1.71e-05)
Land first tercile	-0.0117 (0.0189)	0.0142 (0.0222)
Land third tercile	-0.00524 (0.0202)	-0.00716 (0.0269)
Biharamulo	0.124*** (0.0454)	0.119*** (0.0431)
Treatment	0.837*** (0.0448)	0.845*** (0.0436)
Constant	0.00909 (0.0611)	-0.0385 (0.0642)
Observations	1,241	638
R-squared	0.726	0.736

Source: Author's calculation.

Notes: Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A.5 Effects of community-based legal aid program on legal knowledge using inverse probability weights

Variable	Answered widow's entitlement to deceased husband's land question correctly		Answered question about recognized son's entitlement to inheritance correctly		Answered question about gov't having the right to expropriate land for public use		Answered question about who to approach in unresolved 2 million TZS land conflict correctly	
CBLA treatment assignments by village (ITT)	0.02 (0.03)	-0.00 (0.05)	0.03 (0.04)	-0.05 (0.05)	0.11 (0.05)**	0.16 (0.06)**	0.02 (0.01)	0.09 (0.04)**
R^2	0.00	0.03	0.01	0.04	0.01	0.02	0.01	0.02
N	1,219	617	1,219	618	1,219	618	1,241	638
Sample	Women	Men	Women	Men	Women	Men	Women	Men
Baseline means	0.67	0.66	0.77	0.83	0.40	0.62	0.04	0.17

Source: Author's calculation.

Notes: CBLA = community-based legal aid; ITT = intent to treat. Baseline means and standard errors computed using inverse probability weights. Standard errors are in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Baseline marital status, education, age, age-squared, land tercile categories, and district variables included.

Table A.6 Effects of community-based legal aid program on attitudes using inverse probability weights

Variable	Equal rights to land	Equal rights to land	Wife should inherit	Wife should inherit	Land and Housing tribunal treats cases fairly	Land and Housing tribunal treats cases fairly	Right to express my opinion	Right to express my opinion
CBLA treatment assignments by village (ITT)	0.01	−0.06	0.05	−0.02	0.04	0.05	−0.04	−0.05
	(0.03)	(0.04)	(0.03)*	(0.04)	(0.03)	(0.04)	(0.03)	(0.03)
R^2	0.03	0.03	0.03	0.05	0.05	0.04	0.03	0.03
N	1,241	638	1,241	638	1,241	638	1,241	638
Sample	Women	Men	Women	Men	Women	Men	Women	Men
Baseline Means	0.61	0.66	0.63	0.68	0.31	0.44	0.70	0.84

Source: Author's calculation.

Notes: CBLA = community-based legal aid; ITT = intent to treat. Baseline means and standard errors computed using inverse probability weights. Standard errors are in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Baseline marital status, education, age, age-squared, land tercile categories, and district variables included.

Table A.7 Effects of community-based legal aid program on land practices using inverse probability weights

Variable	Right to sell		Right to bequeath		Primary business decisionmaker on at least one parcel		Primary output decisionmaker on at least one parcel		Experienced dispute		Expect dispute	
CBLA treatment assignments by village (ITT)	-0.05	-0.06	-0.01	-0.06	0.00	-0.01	-0.01	0.02	0.01	-0.01	0.01	-0.00
	(0.05)	(0.05)	(0.04)	(0.04)	(0.02)	(0.04)	(0.03)	(0.04)	(0.02)	(0.03)	(0.02)	(0.04)
R^2	0.02	0.01	0.02	0.02	0.03	0.02	0.02	0.03	0.01	0.01	0.01	0.01
N	1,241	638	1,241	638	1,241	638	1,241	638	1,237	638	1,237	638
Sample	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
Baseline means	0.47	0.79	0.64	0.87	0.54	0.91	0.51	0.91	0.08	0.08	0.12	0.12

Source: Author's calculation.

Notes: CBLA = community-based legal aid; ITT = intent to treat. Baseline means and standard errors computed using inverse probability weights. Standard errors are in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Baseline marital status, education, age, age-squared, land tercile categories, and district variables included.

Table A.8 Treatment effect estimates and bounds accounting for selective attrition

PANEL A: Knowledge and Attitudes	Female UE	Female P-value	Trimming prop.	LBE	UBE	Male UE	Male P-value	Trimming prop.	LBE	UBE
Widow's entitlement to deceased husband's land	0.02	0.58	0.04	-0.02	0.06	-0.02	0.67	0.05	-0.07	0.03
Recognized son's entitlement to inheritance	0.02	0.57	0.04	-0.02	0.06	-0.06	0.15	0.05	-0.11	-0.02
Government has the right to expropriate land for public use	0.11	0.00	0.04	0.07	0.15	0.18	0.00	0.05	0.13	0.22
Should approach ward tribunal for unresolved land conflict	0.02	0.18	0.04	-0.02	0.04	0.10	0.00	0.05	0.05	0.16
Equal rights to land	0.01	0.61	0.04	-0.00	0.04	-0.06	0.11	0.05	-0.08	-0.03
Wife should inherit	0.06	0.03	0.04	0.05	0.08	-0.01	0.87	0.05	-0.02	0.03
Land tribunal treats cases fairly	0.04	0.17	0.04	0.01	0.05	0.03	0.41	0.05	0.01	0.06
Right to express opinion	-0.03	0.22	0.04	-0.04	-0.01	-0.05	0.07	0.05	-0.06	-0.01
PANEL B: Land Practices	Female UE	Female P-value	Trimming prop.	LBE	UBE	Male UE	Male P-value	Trimming prop.	LBE	UBE
Right to sell	-0.04	0.26	0.04	-0.09	-0.01	-0.07	0.15	0.05	-0.12	-0.02
Right to bequeath	-0.01	0.75	0.04	-0.06	0.02	-0.06	0.12	0.05	-0.12	-0.02
Primary business decisionmaker	0.01	0.75	0.04	-0.03	0.05	-0.02	0.54	0.05	-0.08	0.02
Primary output decisionmaker	-0.01	0.72	0.04	-0.04	0.03	-0.01	0.88	0.05	-0.06	0.04
Had dispute	0.01	0.52	0.04	-0.02	0.05	-0.02	0.58	0.05	-0.07	0.04
Expect dispute	0.01	0.79	0.04	-0.03	0.04	-0.01	0.82	0.05	-0.06	0.04

Source: Author's calculation.

Notes: UE, LBE, and UBE = untrimmed effect, lower bound effect, and upper bound effect, respectively. The untrimmed effect measures the average differences across treatments for the balanced panel sample without the use of regressions.

Table A.9 Intent-to-treat estimates of community-based legal aid program effects on land practices accounting for spillovers

Variable	Right to sell		Right to bequeath		Primary business decisionmaker on at least one parcel		Primary output decisionmaker on at least one parcel		Experienced dispute		Expect dispute	
Spillover	−0.01 (0.08)	0.06 (0.08)	−0.02 (0.06)	−0.04 (0.06)	0.00 (0.04)	−0.03 (0.06)	−0.05 (0.04)	0.00 (0.06)	−0.01 (0.03)	−0.04 (0.05)	0.06 (0.03)*	0.05 (0.05)
CBLA treatment assignments by village	−0.04 (0.06)	−0.05 (0.05)	−0.01 (0.05)	−0.07 (0.05)	0.00 (0.02)	−0.02 (0.05)	−0.02 (0.03)	0.01 (0.05)	0.01 (0.02)	−0.03 (0.03)	0.02 (0.02)	0.01 (0.04)
R^2	0.03	0.01	0.02	0.02	0.02	0.02	0.02	0.03	0.01	0.02	0.01	0.01
N	1,241	638	1,241	638	1,241	638	1,241	638	1,237	638	1,237	638
Sample	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
Baseline means	0.47	0.80	0.64	0.87	0.54	0.91	0.51	0.91	0.08	0.07	0.12	0.12

Source: Author's calculation.

Notes: CBLA = community-based legal aid; ITT = intent to treat. Baseline means and standard errors computed using inverse probability weights. Standard errors are in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Baseline marital status, education, age, age-squared, land tercile categories, and district variables included.

Table A.10 Means of variables across adult mortality groups

Variable	(1) Low Deaths—Control	(2) Low Deaths—Treatment	High Deaths—Control (3)	High Deaths—Treatment (4)	(1)–(2) P-value	(3)–(4) P-value
Female	0.65	0.66	0.68	0.68	0.52	0.50
Monogamous union	0.53	0.58	0.55	0.58	0.11	0.28
Polygamous union	0.14	0.09	0.08	0.08	0.00	1.00
Primary education	0.46	0.50	0.43	0.44	0.21	0.55
Age	45.25	45.10	46.04	44.88	0.82	0.19
Household size	5.10	5.10	4.63	5.07	0.45	0.00
Has female head	0.30	0.32	0.35	0.34	0.40	0.55
Head is employed in agriculture	0.86	0.84	0.87	0.90	0.03	0.00
Land first tercile	0.38	0.42	0.39	0.39	0.03	0.94
Land third tercile	0.28	0.25	0.23	0.26	0.02	0.06
Asset first tercile	0.34	0.32	0.31	0.34	0.31	0.58
Asset third tercile	0.35	0.35	0.29	0.28	0.31	0.26
Observations	457.00	484.00	456.00	482.00		

Source: Author's calculation.

Table A.11 Means of variables across divorce groups

Variable	(1) Low Divorce—Control	(2) Low Divorce—Treatment	High Divorce—Control (3)	High Divorce—Treatment (4)	(1)–(2) P-value	(3)–(4) P-value
Female	0.64	0.65	0.68	0.68	0.67	0.56
Monogamous union	0.55	0.57	0.52	0.58	0.62	0.03
Polygamous union	0.11	0.09	0.11	0.08	0.15	0.01
Primary education	0.44	0.55	0.45	0.40	0.00	0.04
Age	46.53	44.40	44.61	45.54	0.01	0.28
Household size	4.57	4.73	5.20	5.41	0.01	0.16
Has female head	0.32	0.32	0.33	0.34	0.96	0.81
Head is employed in agriculture	0.88	0.84	0.85	0.89	0.02	0.00
Land first tercile	0.41	0.40	0.36	0.41	0.37	0.20
Land third tercile	0.24	0.25	0.28	0.25	0.92	0.55
Asset first tercile	0.32	0.32	0.33	0.34	0.56	0.34
Asset third tercile	0.31	0.33	0.33	0.30	0.88	0.02
Observations	492.00	468.00	421.00	498.00		

Source: Author's calculation.

Table A.12 Intent-to-treat estimates for women by vulnerability to land conflict

Variables	T	TxD	Deaths	F p-value	T	TxD	Divorces	F p-value	Means
Widow's entitlement to deceased husband's land	0.02	0.00	0.04	0.59	-0.02	0.09	0.00	0.15	0.67
	0.05	0.07	0.04		0.05	0.07	0.04		
Recognized son's entitlement to inheritance	-0.01	0.08	0.00	0.24	0.00	0.05	0.19	***	0.46
	0.06	0.08	0.05		0.05	0.07	0.05		0.77
Government has the right to expropriate land for public use	0.09	0.04	0.06	0.08	0.05	0.11	-0.03	0.01	0.40
	0.07	0.10	0.07		0.08	0.10	0.07		
Should approach ward tribunal for unresolved land conflict	0.02	-0.01	0.00	0.42	0.02	-0.01	0.00	0.47	0.04
	0.02	0.03	0.02		0.02	0.03	0.02		
Equal rights to land	-0.02	0.06	-0.04	0.29	-0.01	0.04	-0.01	0.39	0.61
	0.04	0.06	0.04		0.04	0.05	0.04		
Wife should inherit	0.06	-0.01	0.01	0.19	0.05	0.01	-0.03	0.12	0.63
	0.04	0.05	0.04		0.04	0.05	0.04		
Land tribunal treats cases fairly	-0.02	0.11	* *	0.02	0.05	-0.03	0.05	0.52	0.32
	0.04	0.05	0.04		0.04	0.05	0.04		
Right to express opinion	-0.09	* 0.10	-0.04	0.69	-0.04	* 0.00	0.05	0.37	0.71
	0.05	0.06	0.05		0.05	0.06	0.04		
Right to sell	0.00	-0.08	-0.07	0.24	0.02	-0.10	-0.15	**	0.29
	0.07	0.10	0.07		0.07	0.10	0.07		0.46
Right to bequeath	0.03	-0.08	-0.02	0.37	0.09	-0.18	** -0.03	0.12	0.64
	0.06	0.08	0.06		0.05	0.08	0.06		
Primary business decisionmaker	-0.01	0.02	-0.06	* 0.59	-0.02	0.04	-0.01	0.51	0.54
	0.03	0.04	0.03		0.03	0.04	0.03		
Primary output decisionmaker	-0.03	0.04	-0.05	0.78	-0.04	0.06	-0.02	0.57	0.51
	0.04	0.05	0.04		0.03	0.05	0.04		

Table A.12 Continued

Variables	T		TxD		Deaths	F p-value	T		TxD		Divorces	F p-value	Means
Had dispute	0.01		0.01		-0.03	0.61	0.02		-0.02		-0.02	0.94	0.08
	0.03		0.04		0.03		0.03		0.04		0.03		
Expect dispute	0.04	*	-0.08	*	-0.01	0.32	0.04	*	-0.06		-0.02	0.41	0.12
	0.03		0.04		0.03		0.03		0.04		0.03		
Aware of paralegal	0.10	***	-0.06		0.04	* 0.09	0.11	***	-0.07	*	-0.04	* 0.04	0.03
	0.03		0.04		0.02		0.03		0.04		0.02		
Paralegal advice in last year	0.01		-0.01		0.01	0.71	0.01		-0.01		0.00	0.63	0.00
	0.01		0.01		0.00		0.01		0.01		0.00		
Would refer one to paralegal	0.02		-0.03		0.01	0.73	0.04		-0.06	*	-0.04	** 0.39	0.03
	0.03		0.03		0.02		0.02		0.03		0.02		
Attended seminar	0.02	**	-0.02	*	0.01	0.62	0.02	**	-0.01		0.00	0.12	0.01
	0.01		0.01		0.01		0.01		0.01		0.01		

Source: Author's calculation.

Note: TxD = Treatment interacted with above median adult mortality and divorces in separate specifications.

Table A.13 Intent-to-treat estimates for men by vulnerability to land conflict

Variables	T	TxD		Deaths	F p-value	T	TxD		Divorce s	F p-value	Means			
Widow's entitlement to deceased husband's land	−0.01	0.00		−0.05	0.89	0.06	−0.16	*	0.13	*	0.18	0.66		
	0.07	0.09		0.07		0.06	0.09		0.07					
Recognized son's entitlement to inheritance	−0.08	0.09		−0.06	0.94	−0.03	−0.03		0.03		0.37	0.83		
	0.06	0.09		0.06		0.06	0.09		0.06					
Government has the right to expropriate land for public use	0.12	0.11		0.04	0.01	0.08	0.18		−0.01		0.01	0.62		
	0.09	0.12		0.09		0.08	0.13		0.10					
Should approach ward tribunal for unresolved land conflict	0.02	0.17	**	−0.04	0.00	0.01	0.21	***	−0.24	***	0.00	0.16		
	0.05	0.08		0.06		0.05	0.07		0.05					
					*									
Equal rights to land	−0.12	**	0.12	−0.11	*	0.92	0.00	**	−0.13	*	0.09	*	0.02	0.65
	0.06		0.08	0.05			0.05		0.08		0.05			
Wife should inherit	−0.06		0.10	−0.01	0.51	0.06	−0.15	*	0.07		0.15	0.68		
	0.06		0.09	0.06		0.05	0.08		0.06					
Land tribunal treats cases fairly	0.02		0.06	−0.06	0.16	0.08	−0.08		0.10	*	1.00	0.46		
	0.05		0.08	0.05		0.05	0.08		0.05					
Right to express opinion	−0.10	**	0.11	*	−0.03	0.79	−0.02	**	−0.06		0.05	0.05	0.85	
	0.04		0.06	0.04			0.04		0.06		0.04			
Right to sell	−0.12		0.11	−0.10	0.95	−0.09	0.06		−0.01		0.64	0.78		
	0.07		0.10	0.07		0.07	0.10		0.07					
Right to bequeath	−0.08		0.04	0.02	0.50	−0.07	0.02		−0.02		0.45	0.85		
	0.06		0.08	0.05		0.06	0.09		0.06					
Primary business decisionmaker	0.04		−0.10	0.07	0.33	0.02	−0.06		0.01		0.56	0.89		
	0.06		0.08	0.06		0.05	0.08		0.06					

Table A.13 Continued

Variables	T	TxD	Deaths	F p-value	T	TxD	Divorces	F p-value	Means
Primary output decisionmaker	0.05	-0.07	0.02	0.68	0.00	0.04	-0.08	0.56	0.90
	0.05	0.08	0.06		0.06	0.09	0.06		
Had dispute	-0.05	0.07	-0.10	*	0.01	-0.04	-0.05	0.44	0.07
	0.05	0.06	0.04		0.04	0.06	0.04		
Expect dispute	0.05	-0.11	0.02	0.20	0.00	0.00	-0.08	0.96	0.12
	0.05	0.07	0.05		0.05	0.07	0.05		
Aware of paralegal	0.14	***	-0.04	0.05	0.15	***	-0.06	0.07	0.04
	0.05	0.07	0.04		0.05	0.07	0.04		
Paralegal advice in last year	0.01	-0.01	0.01	0.96	0.00	0.01	-0.01	0.59	0.01
	0.01	0.02	0.01		0.01	0.02	0.01		
Would refer one to paralegal	0.04	-0.03	0.03	0.84	0.05	-0.05	0.00	0.96	0.01
	0.03	0.04	0.03		0.03	0.04	0.03		
Attended seminar	-0.01	-0.01	0.00	0.15	0.01	-0.05	*	0.10	0.02
	0.03	0.03	0.02		0.02	0.03	0.02		

Source: Author's calculation.

Note: TxD = Treatment interacted with above median adult mortality and divorces in separate specifications.

Table A.14 Means of variables across population groups

Variable	(1) Low Population— Control	(2) Low Population— Treatment	High Population— Control (3)	High Population— Treatment (4)	(1)–(2) P- value	(3)–(4) P-value
Female	0.67	0.66	0.65	0.65	0.85	0.92
Monogamous union	0.55	0.58	0.54	0.57	0.25	0.13
Polygamous union	0.10	0.07	0.12	0.10	0.03	0.13
Primary education	0.46	0.47	0.42	0.47	0.66	0.20
Age	46.77	45.59	44.66	44.30	0.12	0.79
Household size	4.55	5.11	5.13	5.04	0.00	0.97
Has female head	0.33	0.34	0.32	0.31	0.66	0.75
Head is employed in agriculture	0.86	0.91	0.87	0.82	0.00	0.00
Land first tercile	0.41	0.41	0.36	0.40	0.65	0.16
Land third tercile	0.18	0.28	0.32	0.22	0.00	0.00
Asset first tercile	0.33	0.31	0.32	0.35	0.68	0.03
Asset third tercile	0.32	0.32	0.33	0.31	0.27	0.30
Observations	428.00	515.00	485.00	451.00		

Source: Author's calculation.

Table A.15 Means of variables across village size groups

Variable	(1) Small— Control	(2) Small— Treatment	Large—Control (3)	Large—Treatment (4)	(1)–(2) P-value	(3)–(4) P-value
Female	0.66	0.66	0.66	0.66	0.96	0.95
Monogamous union	0.53	0.59	0.55	0.56	0.02	0.71
Polygamous union	0.11	0.09	0.11	0.08	0.06	0.05
Primary education	0.49	0.48	0.39	0.46	0.59	0.01
Age	46.12	44.95	45.14	45.03	0.10	0.91
Household size	4.59	5.01	5.15	5.15	0.00	0.39
Has female head	0.32	0.32	0.33	0.33	0.96	0.80
Head is employed in agriculture	0.84	0.86	0.89	0.87	0.40	0.64
Land first tercile	0.40	0.39	0.37	0.42	0.50	0.15
Land third tercile	0.21	0.28	0.30	0.23	0.00	0.00
Asset first tercile	0.33	0.31	0.31	0.35	0.81	0.19
Asset third tercile	0.33	0.33	0.32	0.30	0.49	0.14
Observations	470.00	476.00	443.00	490.00		

Source: Author's calculation.

Table A.16 Intent-to-treat estimates for women by village size

Variables	T		TxP		Pop		F p-value	T		TxS		Size		F p-value	Mean s
Widow's entitlement to deceased husband's land	0.04		−0.04		−0.03		0.98	0.03		0.00		−0.05		0.63	0.67
	0.05		0.07		0.04			0.05		0.07		0.04			
Recognized son's entitlement to inheritance	−0.02		0.09		−0.13	**	0.23	−0.04		0.15	*	−0.14	**	0.05	0.77
	0.06		0.08		0.05			0.06		0.08		0.05			
Government has the right to expropriate land for public use	0.08		0.05		−0.04		0.08	0.02		0.17	*	−0.13	*	0.01	0.40
	0.07		0.10		0.07			0.07		0.10		0.07			
Should approach ward tribunal for unresolved land conflict	0.02		−0.01		0.00		0.52	0.03		−0.02		0.01		0.72	0.04
	0.02		0.03		0.02			0.02		0.03		0.02			
Equal rights to land	0.08	**	−0.14	*	0.09	**	0.14	0.05	**	−0.07		0.05		0.47	0.61
	0.04		0.06		0.04			0.04		0.05		0.04			
Wife should inherit	0.07	*	−0.04		0.04		0.27	0.03	*	0.05		−0.02		0.02	0.63
	0.04		0.05		0.04			0.04		0.05		0.04			
Land tribunal treats cases fairly	0.09	**	−0.09	*	0.08	**	0.84	0.08	**	−0.08		0.02		0.96	0.32
	0.04		0.05		0.04			0.03		0.05		0.04			
Right to express opinion	0.01		−0.09		0.03		0.07	−0.01		−0.04		−0.04		0.26	0.71
	0.04		0.06		0.04			0.04		0.06		0.05			
Right to sell	−0.09		0.11		0.04		0.81	−0.03		−0.02		0.06		0.39	0.46
	0.07		0.10		0.07			0.08		0.10		0.07			
Right to bequeath	−0.03		0.06		0.03		0.67	−0.02		0.03		−0.03		0.90	0.64
	0.06		0.08		0.06			0.07		0.08		0.06			
Primary business decisionmaker	0.01		0.00		0.04		0.89	−0.01		0.02		0.02		0.64	0.54
	0.03		0.04		0.03			0.03		0.04		0.03			

Table A.16 Continued

Variables	T		TxP	Pop	F p-value	T		TxS	Size	F p-value	Means
Primary output decisionmaker	-0.03		0.04	0.02	0.74	-0.03		0.05	-0.04	0.65	0.51
	0.04		0.05	0.04		0.03		0.05	0.04		
Had dispute	-0.01		0.04	0.00	0.25	0.00		0.02	0.04	0.36	0.08
	0.03		0.04	0.03		0.03		0.04	0.03		
Expect dispute	0.02		-0.03	0.00	0.68	0.01		0.00	0.05	*	0.12
	0.03		0.04	0.03		0.03		0.04	0.03		
Aware of paralegal	0.10	***	-0.06	*	0.17	0.07	***	0.00	0.00	0.00	0.03
	0.03		0.04	0.02		0.03		0.04	0.02		
Paralegal advice in last year	0.00		0.01	0.00	0.38	0.00		0.01	0.00	0.15	0.00
	0.00		0.01	0.00		0.01		0.01	0.00		
Would refer one to paralegal	0.02		-0.01	0.04	*	0.89	0.00	0.01	0.03	0.60	0.03
	0.02		0.04	0.02		0.03		0.03	0.02		
Attended seminar	0.02	*	-0.01	0.00	0.26	0.02	*	-0.01	0.01	0.42	0.01
	0.01		0.01	0.01		0.01		0.01	0.01		

Source: Author's calculation.

Note: TxP = Treatment times above median population; TxS = Treatment times above median village area

Table A.17 Intent-to-treat estimates for men by village size

Variables	T		TxP	Pop		F p-value	T		TxS		Size		F p-value	Means
Widow's entitlement to deceased husband's land	0.02		−0.05	0.07		0.61	0.02		−0.06		0.02		0.59	0.66
	0.07		0.09	0.07			0.06		0.09		0.07			
Recognized son's entitlement to inheritance	−0.08		0.07	−0.08		0.90	−0.08		0.09		−0.08		0.91	0.83
	0.06		0.09	0.06			0.06		0.09		0.06			
Government has the right to expropriate land for public use	0.08		0.18	−0.06		0.00	0.12		0.10		−0.05		0.01	0.62
	0.08		0.12	0.09			0.09		0.13		0.09			
Should approach ward tribunal for unresolved land conflict	0.12	**	−0.02	0.11	*	0.09	0.16	**	−0.13	*	0.19	***	0.55	0.16
	0.05		0.08	0.06			0.05		0.08		0.05			
Equal rights to land	−0.03		−0.07	0.02		0.07	0.01		−0.13	*	0.04		0.03	0.65
	0.06		0.08	0.05			0.05		0.08		0.05			
Wife should inherit	−0.02		0.04	0.04		0.83	0.01		−0.04		0.00		0.61	0.68
	0.07		0.09	0.06			0.06		0.08		0.06			
Land tribunal treats cases fairly	0.09	*	−0.10	0.00		0.87	0.06	*	−0.02		−0.05		0.51	0.46
	0.06		0.08	0.05			0.05		0.08		0.05			
Right to express opinion	−0.04		−0.01	−0.02		0.22	−0.02		−0.05		−0.03		0.16	0.85
	0.04		0.06	0.04			0.04		0.06		0.04			
Right to sell	−0.12	*	0.11	−0.07		0.93	−0.04	*	−0.04		0.10		0.26	0.78
	0.07		0.10	0.07			0.07		0.10		0.07			
Right to bequeath	−0.10	*	0.09	−0.01		0.85	−0.06	*	0.01		0.08		0.33	0.85
	0.06		0.08	0.06			0.06		0.08		0.05			
Primary business decisionmaker	−0.06		0.11	−0.03		0.43	−0.07		0.11		−0.06		0.44	0.89
	0.06		0.08	0.06			0.06		0.09		0.06			

Table A.17 Continued

Variables	T	TxP	Pop	F p-value	T	TxS	Size	F p-value	Means
Primary output decisionmaker	0.00	0.03	0.01	0.68	-0.02	0.05	0.02	0.59	0.90
	0.06	0.08	0.06		0.05	0.09	0.06		
Had dispute	0.00	-0.03	0.06	0.45	0.00	-0.03	0.07	*	0.41
	0.04	0.06	0.04		0.04	0.06	0.04		
Expect dispute	0.00	-0.02	0.01	0.65	0.04	-0.10	0.11	**	0.14
	0.06	0.07	0.05		0.06	0.07	0.05		
Aware of paralegal	0.14	***	-0.05	-0.04	0.03	0.18	***	-0.10	0.00
	0.05	0.07	0.04		0.05	0.07	0.04		0.04
Paralegal advice in last year	0.01	-0.01	0.01	0.96	0.01	-0.02	0.01	0.56	0.01
	0.01	0.02	0.01		0.01	0.02	0.01		
							*		
Would refer one to paralegal	0.00	0.05	-0.01	0.13	-0.03	0.09	*	-0.04	0.01
	0.03	0.04	0.03		0.03	0.04	0.03		
			*						
Attended seminar	-0.05	***	0.08	*	0.00	0.24	-0.01	***	-0.01
	0.02	0.03	0.02		0.02	0.03	0.02	**	0.40
									0.02

Source: Author's calculation.

Note: TxP = Treatment times above median population; TxS = Treatment times above median village area.

Table A.18 Sensitivity analysis on discount rate and capital durability

Outcome	Discount rate	Capital useful life	Based on treatment assignment		Based on actual treatment		Spillover		Treatment assignment (control excludes spillover villages)	
			Women	Men	Women	Men	Women	Men	Women	Men
Aware of paralegal in village	0.01	1	25,671.07	14,957.83	26,790.94	15,801.61			29,656.23	13,017.00
		4	25,457.09	14,825.81	26,567.54	15,662.19			29,409.04	12,902.11
	0.10	1	23,803.72	13,861.13	24,842.18	14,643.02			27,499.00	12,062.60
		4	23,619.46	13,747.42	24,649.79	14,522.94			27,286.13	11,963.64
Answered question about gov't having the right to expropriate land for public use correctly	0.01	1	16,437.54	10,798.86	17,230.41	11,335.43			14,839.18	10,418.69
		4	16,300.53	10,703.54	17,086.73	11,235.42			14,715.50	10,326.73
	0.10	1	15,241.85	10,007.09	15,977.07	10,504.31			13,759.77	9,654.80
		4	15,123.86	9,924.99	15,853.34	10,418.17			13,653.25	9,575.59
Answered question about recognized son's entitlement to inheritance correctly	0.01	1						57,638.84		
		4						57,127.96		
	0.10	1						53,413.55		
		4						52,973.49		
Answered question about who to approach in unresolved 2 million TZS land conflict correctly	0.01	1		18,297.03		19,329.17				22,074.24
		4		18,135.53		19,158.63				21,879.41
	0.10	1		16,955.50		17,911.94				20,455.77
		4		16,816.40		17,765.05				20,287.96
Land and housing tribunal treats cases fairly	0.01	1					87,706.57	78,291.69	27,908.66	23,550.45
		4					86,978.34	77,597.76	27,676.04	23,342.58
	0.10	1					81,325.36	72,552.43	25,878.55	21,823.74
		4					80,698.29	71,954.69	25,678.23	21,644.70
Wife should inherit	0.01	1	31,886.50		33,277.50				26,714.90	
		4	31,620.72		33,000.01				26,492.22	
	0.10	1	29,567.04		30,856.90				24,771.62	
		4	29,338.16		30,617.94				24,579.86	
Attended seminar on legal rights in the last 12 months	0.01	1					379,148.16			
		4					376,000.07			
	0.10	1					351,562.73			
		4					348,851.95			

Source: Author's calculation.

Note: The figures in the column Capital Useful Life signify the multipliers used on US government indicators of the length of life of various capital equipment and items. Thus, in rows with the number 1, the US indicators are used in the Tanzania data. In rows with 4, the length of equipment life in the data is assumed to be four times that in US accounting standards.

REFERENCES

- Abdi, H. 2007. “Bonferroni and Šidák Corrections for Multiple Comparisons.” In *Encyclopedia of Measurement and Statistics*, edited by N. J. Salkind. Thousand Oaks, CA: Sage.
- Arvin, M., and L. Byron 2012. “Development Aid, Corruption, and the Happiness of Nations: Analysis of 118 Countries over the Years 1996–2009.” *Applied Econometrics and International Development* 12 (2): 69–78.
- Baird, S., J. Bohren, C. McIntosh, and B. Ozler. 2014. *Designing Experiments to Measure Spillover Effects*. World Bank Policy Research Working Paper No. 6824.
- Bedi, A. S., and J. H. Marshall 1999. “School Attendance and Student Achievement: Evidence from Rural Honduras.” *Economic Development and Cultural Change* 47 (3): 657–682.
- Behrman, J., L. Billings, and A. Peterman. 2013. *Evaluation of Grassroots Community-Based Legal Aid Activities in Uganda and Tanzania: Strengthening Women’s Legal Knowledge and Land Rights*. CAPRI Working Paper No. 108. Washington, DC: International Food Policy Research Institute.
- Bertrand, M., E. Duflo, and S. Mullainathan. 2004. “How Much Should We Trust Differences-in-Differences Estimates?” *The Quarterly Journal of Economics* 119 (1): 249–275.
- Billings, L., R. Meinzen-Dick, and V. Mueller. 2014. *Implications of Community-Based Legal Aid Regulation on Women’s Land Rights*. IFPRI Research Brief No. 20. Washington, DC: International Food Policy Research Institute.
- Blattman, C., A. C. Hartman, and R. A. Blair. 2014. “How to Promote Order and Property Rights under Weak Rule of Law? An Experiment in Changing Dispute Resolution Behavior through Community Education.” *American Political Science Review* 108 (1): 100–120.
- Braakmann, N. 2012. “How Do Individuals Deal with Victimization and Victimization Risk? Longitudinal Evidence from Mexico.” *Journal of Economic Behavior & Organization* 84 (1): 335–344.
- Campbell, J. C. 2002. “Health Consequences of Intimate Partner Violence.” *The Lancet* 359 (9314): 1331–1336.
- Coady, D. P., and S. W. Parker. 2004. “Cost-Effectiveness Analysis of Demand- and Supply-Side Education Interventions: The Case of PROGRESA in Mexico.” *Review of Development Economics* 8 (3): 440–451.
- FAO (Food and Agriculture Organization of the United Nations). 2011. *Women in Agriculture: Closing the Gender Gap. The State of Food and Agriculture 2010–2011*. Rome.
- Feder, G., and S. Savastano. 2006. “The Role of Opinion Leaders in the Diffusion of New Knowledge: The Case of Integrated Pest Management.” *World Development* 34 (7): 1287–1300.
- Fitzgerald, J., P. Gottschalk, and R. Moffit. 1998. “An Analysis of Sample Attrition in Panel Data.” *Journal of Human Resources* 33: 251–299.
- Galárraga, O., M. A. Colchero, R. G. Wamai, and S. M. Bertozzi. 2009. “HIV Prevention Cost-Effectiveness: A Systematic Review.” *BMC Public Health* 9 (S1): 1–14.
- Haugen, G. A., and V. Boutros. 2014. *The Locust Effect: Why the End of Poverty Requires the End of Violence*. Oxford University Press: Oxford, UK.
- IRS (Internal Revenue Service). 2014. *Internal Revenue Manual*. United States Department of the Treasury. Accessed March 30. http://www.irs.gov/irm/part1/irm_01-035-006.html.
- Knox, A. 2012. *Abunzi Capacity Assessment*. LAND Project. United States Agency for International Development.
- Knox, A., A. Kes, N. Milici, and N. Duvvury. 2007. *Mending the Gap between Law and Practice: Organizational Approaches for Women’s Property Rights*. Washington, DC: International Center for Research on Women.
- Kolisetty, A. 2014. *Examining the Effectiveness of Legal Empowerment as a Pathway out of Poverty: A Case Study of BRAC*. Justice & Development Working Paper series. Washington, DC: World Bank.

- Kondylis, F., V. Mueller, and S. Zhu. 2014. *Seeing Is Believing? Evidence from an Extension Network Experiment*. World Bank Policy Research Working Paper. Issue 7000. Washington, DC: World Bank.
- Lee, D. 2009. "Training, Wages, and Sample Selection: Estimating Sharp Bounds on Treatment Effects." *Review of Economic Studies* 76: 1071–1102.
- Lieberman, J. K., and J. F. Henry. 1986. "Lessons from the Alternative Dispute Resolution Movement." *University of Chicago Law Review* 53 (2): 424–439.
- LSF (Legal Services Facility). 2012. Baseline Survey on Tanzania Mainland and Zanzibar for Legal Services Facility. ID: LSF 001 BLST CSTA. Dar es Salaam.
- Mauro, P. 1995. "Corruption and Growth." *Quarterly Journal of Economics* 110 (3): 681–712.
- Munshi, K. 2004. "Social Learning in a Heterogeneous Population: Technology Diffusion in the Indian Green Revolution." *Journal of Development Economics* 73 (1): 185–213.
- Peterman, A. 2011. "Women's Property Rights and Gendered Policies: Implications for Women's Long-Term Welfare in Rural Tanzania." *Journal of Development Studies* 47 (1): 1–30.
- . 2012. "Widowhood and Asset Inheritance in Sub-Saharan Africa: Empirical Evidence from 15 Countries." *Development Policy Review* 30 (5): 543–571.
- Sandefur, J., and B. Siddiqi. 2013. "Delivering Justice to the Poor: Theory and Experimental Evidence from Liberia." Paper presented at Center on Democracy, Development, and the Rule of Law seminar, Stanford, CA, US, February 28.
- Stöckl, H., K. Devries, A. Rotstein, N. Abrahams, J. Campbell, C. Watts, and C. G. Moreno. 2013. "The Global Prevalence of Intimate Partner Homicide: A Systematic Review." *The Lancet* 382 (9895): 859–865.
- Tan, J.-P., J. Lane, and P. Coustère. 1997. "Putting Inputs to Work in Elementary Schools: What Can Be Done in the Philippines?" *Economic Development and Cultural Change* 45 (4): 857–879.
- TLS (Tanganyika Law Society). 2011. *Mwongozo Wa Msaidizi Wa Kisheria*. Dar es Salaam.
- Tsikata, D. 2003. "Securing Women's Interests within Land Tenure Reforms: Recent Debates in Tanzania." *Journal of Agrarian Change* 3 (1): 149–183.
- UN (United Nations). 2012. Report of the Special Rapporteur on Extreme Poverty and Human Rights. Note by Secretary General, August 9, 2012. Accessed December 15, 2014. <http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N12/458/06/PDF/N1245806.pdf?OpenElement>.
- UNODC (United Nations Office on Drugs and Crime). 2011. *Access to Legal Aid in Criminal Justice Systems in Africa Survey Report*. United Nations: New York. Accessed March 30. http://www.unodc.org/pdf/criminal_justice/Survey_Report_on_Access_to_Legal_Aid_in_Africa.pdf.
- Wilkes, F., and A. Stevens. 2014. "Reap What Your Friends Sow: Church Mergers and Technology Adoption in the Upper Midwest." Unpublished. University of California, Berkeley, CA, US. http://sites.bu.edu/neudc/files/2014/10/paper_340.pdf.
- WLAC (Women's Legal Aid Center). 2009. *Assessing Rural Women's Land Ownership*. Dar es Salaam.
- Yngstrom, I. 2002. "Women, Wives and Land Rights in Africa: Situating Gender Beyond the Household in the Debate Over Land Policy and Changing Tenure Systems." *Oxford Development Studies* 30 (1): 21–40.

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