Environmental and Gender Impacts of Land Tenure Regularization in Africa: Pilot Evidence from Rwanda
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Summary
Although recent developments have increased interest in African land tenure, Rwanda’s nation-wide Land Tenure Regularization (LTR) program is one of a few models to address these issues at the required scale. An impact evaluation of this program highlights four main effects; namely, (i) significant and large investment impacts that are particularly pronounced for women; (ii) improved land access for legally married women and better recordation of inheritance rights; (iii) a reduction in the probability of having documented land ownership for legally unmarried women; and (iv) a reduction in land market activity rather than distress sales.

Background
LTR was established to create the precondition for formalization and full legal recognition of rights in the form of title certificates to land holders. The program design relied on the experience acquired during the pilot exercises conducted in 2007/2008 in four cells which were chosen to reflect the country’s different realities (Nyamuglai in Kigali City, Kabushinge in the North, Biguhu in the West and Mwoga in the East). Subsequently, in 2010, the government started the national roll-out of the LTR program to register the estimated 10 million parcels in a decentralized manner at a cost well below any existing land registration initiative (USD 5 per parcel). Rwanda is the first African country to implement such an approach and the evaluation of the pilots, on which this note is based, and subsequently the national program can shed light on best practices.

Design
The evaluation was designed to assess the impact of LTR on: (i) expropriation risk; (ii) land related investment; (iii) female land ownership; (iv) female inheritance; and (v) the frequency of land transactions. A key methodological challenge in undertaking a rigorous socio-economic impact assessment of the pilots was lack of baseline data. As such, to compare for differences between LTR and non LTR households, we adopted a regression discontinuity design and administered a short survey to some 3,554 households with 6,330 parcels of land on both sides of the boundaries of the four pilot cells (with LTR households inside of the pilot cell border and non LTR outside of the border). Data was collected in 2010, 2.5 years after the start of LTR in the pilot cells. Local variations in soil quality, market conditions or other factors that could have remained a concern were addressed using our evaluation methodology.

Program Impact
Land Tenure Security
A primary reason for the Government of Rwanda to initiate LTR was to increase levels of land tenure security. As expected, a negative relationship between LTR and the subjective expropriation risk was observed even if it was not statistically significant. Possible reasons for the absence of significant impact on expropriation risks include the fact that LTR does not change overall policy and that households’ knowledge of the policy may be limited, or that it is difficult to capture a complex measure such as perceived expropriation risks with a single question.

Soil Conservation Investments
Households affected by LTR are more likely to make soil conservation investments – building or maintaining structures such as bunds, terraces and check dams. This is about double the change in investment in the control group,
representing a staggering effect. Women seem to benefit even more in this respect; estimated effects of LTR on such investments by female headed households are double that of male headed households. This suggests that low levels of tenure security acted as an obstacle to investment and that LTR’s increased tenure security can efficiently remove such constraints.

**Gender Equity and Access to Land**

Prior to the introduction of the 1999 Inheritance Law, customary law reigned and dictated that women in Rwanda have usufruct rights to land only through their husbands whose lineage controlled the land. The 1999 law changed this by granting sons and daughters equal rights to inherit their parents’ property, subject to the provisions of family law (which under the most common conjugal property regime mandates equal shares), protecting property rights of women under a legally registered marriage and requiring spousal consent for transaction of matrimonial property by any of the marriage partners.

Nevertheless, the law does not protect property rights by women who live with partners or are in marriages that are unregistered. For women who were part of a union formalized through a marriage certificate (76 percent of the sampled couples), the effect of the program was overwhelmingly positive. They were more likely to be regarded as joint land owners after LTR than before. However, the analysis revealed that LTR resulted in a small but statistically significant reduction in the likelihood of legally unmarried women becoming documented owners.

**Gender and Inheritance**

LTR also demonstrated a major impact on inheritance related knowledge and awareness. We found a significant increase in the likelihood that landholders in the program areas would now know who would inherit their parcel. This is most likely linked to the required explicit record of persons of interest that provides clarity on pre-existing succession-related uncertainty.

This increased certainty and also established security for children as they were more likely to inherit their parents’ land with boys and girls benefitting almost equally. Girls in female headed households were significantly less likely to inherit their mothers’ land when compared to girls in male headed households. This unforeseen finding requires further research and may necessitate augmentations and enhancements to programs like LTR in order to avoid long term emulations of such practices.

**Market Activity**

A great concern for interventions seeking to improve land tenure is that they could lead to distress sales, where households without access to credit and insurance sell their land in periods of distress at below the fair market value, leading to landlessness and greater vulnerability and poverty. However, we found a significant decrease in both the land market activity and the size of land area traded as a result of LTR.

The low level of market activity may have been related to the transfer fee increase felt by many small owners. Indeed, the change from a rate of six percent of the property value to a flat fee of RWF 20,000 during the pilot meant that the fee could easily exceed 25 percent of the land value of small plots. The observed decrease in transactions could also have been tied to law enforcement on small transfers as most parcels in the sample fell below the legally prescribed minimum size of one hectare for land transactions. Further, the formal system to register land transfers was not installed at the time of the survey and people did not want to risk losing their new found tenure security. Additionally, the benefits of registration were unclear during the pilot and beneficiaries preferred holding on to their land because they expected its value to increase as others would realize the benefits of having secure land ownership documentation when LTR was to start at a large scale.
Policy Implications

LTR poses noteworthy policy implications for both Rwanda and other land scarce countries in Sub-Saharan Africa. The lessons learned and risks realized can strengthen investment, boost productivity, and promote environmental protection while implementing substantial reforms in the area of gender equity.

1. Results of the pilot assessment call for caution regarding vulnerable groups.

While LTR significantly increases tenure security of legally married women, who are as a result more likely to have their informal ownership rights documented and secured after registration, women in consensual unions or polygamous marriages saw diminished property rights, in accordance with the law. To avoid increasing their vulnerability, there is a clear need to raise general awareness on family law and the importance of legal unions to women during the project implementation to ensure that these women are not excluded from the land registration process. The legal recognition of customary or religious marriages could also likely prevent the observed negative impact of the program.

2. Further investigation will be required to identify the reasons why land tenure regularization has a depressing impact on land market activities.

The evaluation of the national rollout, which is currently on-going, should shed light on the potential causes. Transaction costs and regulation related to ownership transfer registration should be reviewed and the laws amended accordingly. In particular, the minimum one hectare size restricting subdivision may require revision as it imposes a serious constraint on transactions. As a large number of parcels lie under the threshold, this restriction could otherwise render the cadastre obsolete if households continue to subdivide land but cannot legally transfer ownership rights. In addition, it will be essential for the land administration to have the capacities and means to ensure that the flows of transactions can be efficiently and timely registered.

3. Given the complexities of land tenure in most African countries, a framework and guidelines have been developed and endorsed by African heads of State but their implementation needs to be guided by evidence-based monitoring.

Increased global demand for land, higher and more volatile food prices, and the potential prospect of payments for environmental services, have translated into higher demand for land globally. To increase productivity and prevent that this pressure deprives the most vulnerable of their land, countries need to improve their land administration institutions. With a massive program to register the country’s estimated 11 million parcels at a cost well below traditional norms, Rwanda is a protagonist in this area and lessons can be drawn from its experience to input land tenure regularization initiatives elsewhere.
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