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New Ways to Assess and Enhance Land Registry Sustainability: Evidence from Rwanda

DANIEL AYALEW ALI, KLAUS DEININGER and MARGUERITE DUPONCHEL*
World Bank, Washington DC, United States

Summary. — Rwanda has recently implemented a nation-wide program of first-time land regularization (LTR) that many believe set new standards for the region. We use administrative data combined with household survey- and program-rollout information to explore sustainability of the infrastructure created in this process, including the impact of public efforts to increase registration of subsequent transactions. We find that the program provided significant benefits in terms of gender equality and credit access while opening up new opportunities in terms of land taxation or land use planning, but that high level of rural informality may undermine these in the medium to long term. While public efforts to decentralize service provision helped to significantly reduce informality, additional efforts are likely to be needed to ensure sustainability of the registry. We discuss how Rwanda can further move in this direction and draw out implications for other countries considering first time adjudication and registration of property rights.

Key words — land registry, land transactions, administrative data, Africa, Rwanda

1. INTRODUCTION

Recent improvements in availability of computing power, connectivity, and high resolution remotely sensed imagery have increased the scope for documenting land rights in ways that are more affordable and participatory. Beyond reducing the cost of first-time adjudication, these developments can help improve transparency of data management and, by linking data across domains, increase private and social benefits of land records. A recognition of this potential underpins a recent increase in policy makers' appreciation of the importance of public land registries as a key part of countries' institutional infrastructure.

Yet, as the value of land registries derives from their ability to provide authoritative and current information on all parcels of potential interest, lack of maintenance may quickly erode their usefulness. Their upkeep depends not only on public funding but also on private parties registering subsequent transactions, something that is unlikely to happen unless the perceived benefits of doing so exceed the associated costs. Maintenance has historically been a problem for interventions in Africa (Atwood, 1990), East Asia (Maurer & Iyer, 2008), and Latin America (Galiani, 2011). More recent evidence for Ethiopia (Deininger, Ali, Holden, & Zevenbergen, 2008) and case studies suggest that, despite enhanced options in terms of technology, lack of maintenance continues to be an issue. Yet, systematic discussion of this issue in the literature has remained scant.

This paper argues that more systematic use of administrative data which, in a computerized system, are available for all registered land in real time at zero marginal cost, provides the basis for a much richer discussion of this highly relevant topic. We use the example of Rwanda, the only African country, and one of the few globally, that recently completed a nation-wide, low-cost, and participatory land regularization effort, to show how availability of such data can support policy-making in three respects. First, by helping to document the benefits from a land registry, it reinforces the case for sustainability and allows to identify unrealized potential. Second, by allowing to assess performance overall and by sub-national units, it allows to pinpoint policy or regulatory issues that may prevent land registries from being maintained. Combining registry information with data on roll-out of specific interventions, ideally leveraging the potential from mobile platforms, provides a cost-effective way of assessing the efficacy of certain policies, including measures to reduce informality. Finally, linking administrative with survey data at parcel level allows to obtain robust estimates of informality as well as efforts to reduce it.

In Rwanda's case, administrative data help document the benefits from land registries, including the female empowerment evident from the fact that an unprecedented 86% of women have individual or joint land rights formally documented and access to credit as highlighted by a total of US$ 2.6 billion of mortgage lending. Such data also demonstrate that linking registry information at parcel level to data maintained by other government agencies can help improve fairness and yield from property tax collection and improve the scope for functioning of land and financial markets. Yet, although rural land markets in Rwanda are very active, with more than 3% of parcels being transacted every year, the fact that less than 0.15% of non-residential land parcels have transfers formally registered suggests that, at least in rural areas, these benefits may not be sustained. Efforts to increase registration through decentralized service provision were effective but the size of their impact was too small to overturn the picture.

Exploring reasons for such high levels of informality points toward regulations, information, and cost as three main

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factors. Regulations that make it impossible to register subdivision of agricultural parcels below one hectare may be one reason for enormous differences in registration between residential and agricultural land: in the period (2014/15) considered here, 5.6% and 1.54% of Kigali's and 0.27% and 0.07% of other regions' residential and agricultural land parcels, respectively, were annually transferred via registered sale. Lack of information by land owners at local level is a key constraint but gaps seem to exist even between different levels of government. A flat registration fee implies that the *cost* of registering a land transfer in rural areas is about 30 times higher than for urban residents (23% vs. 0.6% of parcel value).

Our data suggest Rwanda can improve its performance in two areas. First, a number of options can be explored to build on and further enhance the positive impacts of decentralized service delivery by SLMs. This would include exploring a viable business model for delivery of land registry services which, beyond improved training and communication with local leaders, is likely to involve measures to reduce the time SLMs spend on routine tasks such as transferring files to the District office by allowing them to access mobile platforms or use existing internet kiosks. If such innovations were phased in over time or introduced in select locations but not others, their impact could be easily and cost-effectively assessed using administrative data. To reduce informality to a level consistent with long-term sustainability of the registry, such steps will have to be complemented by review of regulations and lower rural fees. Varying such costs in a small setting would be a cost-effective way of developing a fee schedule consistent with long-term sustainability of the registry for Rwanda. Doing so would also allow to gain operational insights that would be invaluable for other countries contemplating first time land registration and help them consider low-cost models for record maintenance that involve private actors at the local level up-front at the design stage rather than addressing them once the program has been completed in ways that are likely to be more costly and less efficient.

The paper is structured as follows. Section two reviews conceptual arguments and empirical evidence on costs and benefits of land registration and draws out implications for sustainability of land administration. It also describes Rwanda's legal and institutional structure, key elements of the country's program of land tenure regularization program, including efforts to integrate it into the country's decentralized system of governance, as well as data sources. Section three provides evidence on the level and incidence of informal transactions. Section four provides data on and the cost of registering transfers, compares them to households' stated willingness to pay, and draws out implications on its determinants. Section five concludes with recommendations for policy and research.

2. LITERATURE AND COUNTRY BACKGROUND

To put the discussion on sustainability of Rwanda's registry in context, we discuss the extent to which the investment and land market activation benefits of more secure land tenure that have traditionally motivated efforts at land regularization are borne out in practice. This is complemented by a short description of development, implementation, and impacts of the country's land tenure regularization program in terms of investment, land market operation, and gender equality. Failure to register subsequent transactions could curtail enjoyment of these benefits in the future.

(a) *The rationale for land regularization*

A property rights system and registry that allows unambiguous identification of owners is an important part of countries' institutional infrastructure. It can increase scope for investment and for more effective land use by reducing expropriation risk, including for women, and facilitating market transactions (Besley & Ghatak, 2010). The literature on impacts of efforts to secure and maintain property rights to land and associated property globally (Lawry et al., 2016) and in Africa (Fenske, 2011) suggests that such benefits will be the larger the more insecure tenure, overall or for specific groups such as women, had been without such a program and the greater the scope for efficiency-enhancing transactions.

A key reason for investment effects is that insecurity about whether or not an individual will be able to hold on to their land will reduce incentives for investment or sustainable land management and may even lead to spending of resources in efforts to protect property rights that do not directly increase productivity (De Meza & Gould, 1992). Studies show that efforts to better define and protect property rights via demarcation of land and adjudication of rights increased long-term investment (e.g., fallowing) and freed up labor for other productive uses rather than time spent guarding less secure plots, e.g., in Benin (Goldstein, Houngbedji, Kondylis, O'Sullivan, & Selod, 2015) or Peru (Field, 2007). Such effects will be most pronounced if land is scarce and traditional institutions are no longer able to guarantee broad-based access to and secure tenure of land or if had conflict precluded investment. Beyond traditional expropriation risk, e.g., due to land redistribution, recent factors giving rise to tenure insecurity include competition for land from urban growth (Adam, 2014), demand by investors (Deininger & Byerlee, 2011), or speculative land acquisition by urban elites (Sitko & Jayne, 2014). While customary institutions can be adaptable and offer high levels of tenure security in many situations (Bruce & Migot-Adholla, 1994), they often fail to protect women's rights, are ill-equipped to resolve inter-community disputes, and may come under pressure if increased land demand from outsiders (Chimhowu & Woodhouse, 2010) occurs in a setting of weak accountability that allow chiefs to act as landlords rather than custodians of community assets (Berry, 2009).

Given land's role as a key asset, interventions to clarify property rights to land will also have important distributional impacts. [1] These have been well documented in the case of gender, including on factors such as females' autonomy and within-household decision making. Female property rights to land and other assets have been shown to affect girls' survival rates (Qian, 2008), their anthropometric status (Duflo, 2003), level of schooling (Deininger, Goyal, & Nagarajan, 2013; Luke & Munshi, 2011), and women's ability to take advantage of economic opportunities and cope with risks (Deere, Oduro, Swaminathan, & Doss, 2013). Joint titling has been argued to have the potential to empower women and benefit their offspring (Menon, van der Meulen Rodgers, & Nguyen, 2014) with no negative productivity effect (Newman, Tarp, & van den Broeck, 2015). As traditional systems may restrict inheritance rights for women (Colin, 2008) and particularly widows (Chapoto, Jayne, & Mason, 2011), [2] evidence of inheritance reform having reduced gender discrimination (Deininger et al., 2013) and benefited the next generation (Deininger, Fang, Jin, & Nagarajan, 2014) is relevant and implies a need to pay attention to distributional issues, including transparent awareness raising.

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