

LAND

Land is a key productive asset and a source of livelihood for all Malawians, especially the poor. Its effective management is a precondition for growth and equity, including by gender. But an inadequate legal and institutional framework has compromised the sector's ability to fully contribute to both objectives. As a result, levels of disputes are high and tenure insecure, especially for women; smallholders lack the confidence to invest in crops with higher value added or in soil conservation to improve resilience and rural well-being; highly productive estate land remains underutilized rather than being transferred to those who could use it effectively; and Government loses millions of revenue. This note illustrates the genesis of these problems and highlights how limited capacity, outdated regulations, institutional inefficiencies, and a failure to fully harness IT-related benefits increase the cost and reduce the quality of service provision in Malawi's land sector, limit coverage, and reduce transparency, thereby reducing the sector's ability to contribute to overall objectives.

By recognizing customary tenure and creating opportunities to use more appropriate low-cost technology and more systematically involve local stakeholders recently passed Land Acts provide, for the first time in Malawi's history, a basis to effectively increase coverage and thus address these constraints. To deliver on this promise, they need to be complemented by institutional reform to improve transparency, quality, and relevance of land information and accompanied by policies helping to better realize the potential from well-functioning land markets, collection of ground rent and other land-related revenue to provide services that in turn benefit land users. To minimize the risk of Land Act implementation exacerbating rather than reducing inequality, it is essential that implementation proceed in a sequenced way, seek out ways to secure women's rights, and seek to establish cost-effective and sustainable institutional arrangements in an iterative process that relies heavily on pilots.

How Malawi's land is used is key for growth and equity: Land and real estate are one of a household's main assets virtually everywhere but they are particularly important for Malawi for three reasons. First, with agricultural value added amounting to some 30% of GDP and an even larger share of the labor force depending on agriculture for their livelihood, Malawi's economy and the scope for its development depend on efficient land use in the agricultural sector. Second, with a population density of 177 persons per km² and annual population growth of close to 3% land is not only becoming more scarce but also constitutes a main asset the effective use of which can contribute significantly to gender equity and poverty reduction. Third, Malawi's natural resource base is fragile and 48% of land users in the 2015/16 national household survey (IHS4) indicating that they are affected by soil erosion.

Effective land institutions contribute to development in many ways. A key justification for land institutions is that, unless land users' level of tenure security is high enough to provide incentives for efficiency-enhancing investment attached to land, such investment may not be forthcoming and users may instead engage in unsustainable practices that could permanently reduce soil fertility or, e.g. via erosion, generate negative externalities. Having land ownership clearly documented provides a basis for efficiency-enhancing transactions in rental markets that can support structural transformation and growth of the rural non-farm economy. If land sales markets are sufficiently liquid and their functioning not impeded by imperfections in other markets, land is also an ideal collateral that allows development of financial markets. Moreover, having land ownership recorded makes it easier to manage public land, plan and finance urban expansion and effective service provision, and guide private investment in agriculture and beyond.

Rather than secure existing rights, Malawi's land institutions historically promoted dualism: Instead of aiming to develop smallholders' productive capacity and secure their land rights, post-colonial efforts to increase agricultural output were focused on transferring land out of the customary sector to estates for production of cash crops, mainly tobacco, by estates. Until 1994 when the tensions generated by such transfers led to the imposition of a moratorium on land transfers to estates, estates were the only ones who could market cash crops. This, together with estates' preferential access to land, labor, and credit

(Binswanger *et al.* 1995), resulted in emergence of a highly dualistic structure (Kydd and Christiansen 1982) (Jaffee 2003).

As a result, most smallholders remain outside the formal system: Although reforms allowing cash crop sales by smallholders resulted in an immediate improvement of their welfare (Lea and Hanmer 2009), no efforts were undertaken to recognize existing tenure and only 2% of respondents in the 2015/16 Integrated Household survey (IHS4) have access to formal documents (table 1). Continued population growth, migration, and urban expansion put increasing stress on customary institutions that had traditionally provided high levels of security by community members (Bruce and Migot-Adholla 1994) and increased the frequency of land transactions with outsiders (Ricker-Gilbert *et al.* 2014) that might be liable to being disputed at any point (van Donge 1999), often after long periods of dormancy (Jul-Larsen and Mvula 2007), potentially undermining tenure security and investment incentives. As they helped resolve some 60% of disputes, traditional leaders remain key for resolving disputes.

Access to land also has a strong gender dimension: With 67% of villages, mainly in the country's South and Center, following matrilineal inheritance and land a key asset, who has ownership and transfer rights over land will affect gender equality, female empowerment, and investment in future generations. Such systems are increasingly coming under pressure, increasing the likelihood for females to be involved in inheritance-related land disputes similar to what was found in Uganda (Deininger and Castagnini 2006) increases (Lovo 2016; Place and Otsuka 2001) with negative impact on output, especially by females (Deininger *et al.* 2017a). But contrary to an often-held opinion, there is no evidence of matrilineal inheritance regimes negatively affecting investment once other variables are controlled for.

Tenure insecurity among smallholders is high: Household data support the notion of widespread tenure insecurity among smallholders: In the 2006/07 NACAL, 22% of respondents expressed concern that their land may be taken away and in the 2014/15 IHS4, 33% of households, between 37% in the South and 21% in the North, indicated they were not confident to still possess their plot in 10 years' time. Past land disputes, participation in land transactions, length of tenure, and lack of physical presence are key factors contributing to higher tenure insecurity (table 2).

Insecure tenure reduces investment in soil conservation: With almost half of the IHS4 households affected by soil erosion problems, investment in soil conservation is key to resilience against extreme weather events the frequency of which is likely to increase in the future. Perceived tenure insecurity reduces the likelihood of households investing in permanent soil and water conservation structures such as terraces significantly, by an estimated 5.4 points, an increase of more than 50% compared to the mean of 9.5% (table 3 col. 1 and 2) even though terraces enhance output by an estimated 9.4% (table 3 col. 4).

Fear of land loss also undermines productivity, especially by women: Production function estimates suggest that fear of land loss is associated with a 4% reduction of output overall even if soil fertility investment is controlled for. Contrary to what was suggested in the literature (Lovo 2016; Lunduka 2009; Place and Otsuka 2001), matrilineal systems of inheritance were associated with higher rather than lower levels of output (table 3, col. 3). Differentiating by operator's gender suggests that men do not suffer but that insecure tenure affects plots operated by women where the reduction of output value associated with fear of land loss is estimated to be 8.4%, equivalent to 15% of women's annual crop income. With some 4 million ha cultivated by smallholders nationwide 22%-33% of which are affected by tenure insecurity, a lower bound for the size of output losses from tenure insecurity in the smallholder sector is US\$ 11 million per year (Deininger *et al.* 2017b). Measures to eliminate disputes could thus have an enormous impact on agricultural productivity, resilience, and gender empowerment.

Historically, land transfers to estates were key to the agricultural commercialization strategy: To boost commercial crop production, 21-year leases to a large number of estates, most sized from 10 to 30 hectares were, in the late 1980s, carved out of what was deemed unutilized customary land and transferred to aspiring farmers (Devereux 1997; Mandondo and German 2015). Before 1986, 2,277 new leases with a total area of 237,322 ha were awarded, i.e. 104 leases with an average of 105 ha or a total transfer to

leasehold of some 10,800 ha/year. In a second phase from 1986 to 1994, the number of leases issued each year multiplied to 2,626 per year but average size declined to some 25 ha, implying a transfer of some 65,000 ha/year into leasehold. Following the 1994 moratorium, overall issuance of new agricultural leases dropped to 176 leases or transfer of 7,800 ha per year (table 4). These figures exclude a limited number of freehold estates from before independence the records for which are in a separate registry.

Some 25% of agricultural land was transferred to estates: As long as records remained on paper, data on the size and performance of the estate sector was difficult and costly to obtain (Gossage, 1997). This made it near impossible to effectively implement existing policies (for example, ground rent collection) or to design approaches to more fully harness the sector's potential for broader rural development. Computerization of all leases (Deininger and Xia 2017) suggests that 1.3 million ha of land (about 20% of the country's agricultural area) was transferred to estates with an average size of some 40 ha via leases (table 5). The formal process comprised four steps (van Setten 2016), namely (i) lodging of an application stating size, intended use, and location of the desired piece of land (normally a sketch map), together with a 'no objection' document by the chief certifying that neither chief nor village headman object to the proposed transfer; (ii) validation and issuance of an offer letter detailing the length of the lease, permitted land use, assessed fees, and annual ground rent, ideally accompanied by a survey plan that describes the property's location more precisely by Government; (iii) acceptance of the offer letter into a preliminary lease contract; and (iv) formalization of the lease contract by a deed that is formally registered.

Quality of estate documentation is variable: Figure 1 illustrates the spatial information from the estates database (with registered estate boundaries in black) overlaid on google earth satellite imagery. It illustrates the prevalence of overlaps and in most cases a lack of correspondence to actual land use patterns on the image. Such differences can be attributed to three main factors. First, as before 1994, access to tobacco marketing quotas required a minimum of 12 ha of estate land, a significant number of smallholders proceeded to establish so-called 'ghost estates', i.e. to register land as estates in office-based processes that may have involved some side-payments without any correspondence to ground reality. Second, a desire to reduce the need for payment of fees or side payments implies that paper records are often incomplete with records indicating that 42% and 37% of estate owners have a deed or an offer letter only (table 5). Quality standards for spatial documentation also vary with 52% relying on a sketch map, 46% on a survey drawn plan, and less than 2% having a deed plan. Examining the records suggests that this leads to some 140,000 ha having been registered twice with 28 per cent (11%) of estates having any (more than 20%) of their area overlap with another estate (Deininger and Xia 2017).

Most agricultural leases have expired: Records suggest that, in 2016, close to 70% of estate leases had expired and some 22% are indeterminate. Only 8% are clearly still valid and only 5.5% had a remaining lease term of more than 10 years in 2016. This is likely to reduce incentives for estates to make long-term investments and may encourage short-term soil mining. Failure to clearly identify the tenure status of such land would also reduce the likelihood of unused estate land being made available to tenants, thus reducing intensity of cultivation and implying that Malawi is making less than full use of one of its scarce resources.

Non-payment of ground rent results in significant revenue losses: With about US\$ 0.79/ha on average over all estates, annual ground rent has been eroded by inflation and even full renewal of leases for all estate land at these rents would only raise less than US\$ 1 mn. With a prevailing lease rate for agricultural land of US\$ 89/ha and year (see table 10), there is considerable scope for either increasing the level of ground rent collected from exiting estates or to make land that is not currently utilized available to new investors. To inform relevant policy decisions, greater clarity on the extent to which land is used and the efficiency of such use will be essential. But reliable nationally representative information on land use and economic performance by estates is limited. In addition to the 2006 NACAL, we rely on a complete listing of all estates in the 8 districts with the highest number of estates.

Intensity of land use on estates is often low: Most estates are owned by Malawian individuals although corporate and foreign ownership increases for larger estates (table 6). According to NACAL data only 15%

of allocated estate land is self-operated, a share that decreases from 88% in the group below 5 ha, to 12% in the above 500 ha group. Production structure and cropping patterns differ between smallholders and estates with a higher share (42%) of estate land area compared to ** % for smallholders devoted to tobacco, followed by maize (39%), groundnuts (7%), and other crops. On the other hand, with a wage bill of US\$ 131 per ha and about two thirds hiring permanent labor, estates provide employment that opportunities.

Estates' level of productivity is below smallholders': Non-parametric regressions of productivity on size that implicitly compare between smallholders (see figure 2) suggest that, for all crops except cassava, smallholders' yields are significantly above those by estates. Although they refer to yields rather than profits, the fact that estates are more likely to use purchased inputs and spend more on them per hectare than smallholders suggests that the same is true for profits (Deininger and Xia 2017). The scope for large farms or estates to contribute to structural transformation by providing neighboring small producers with access to input or output markets, technology, credit, or insurance as found in Mozambique (Deininger and Xia 2016) or to a more limited extent in Ethiopia (Ali *et al.* 2015), has been used as an argument to support establishment of such units of production. With estates' level of productivity below that of smallholders, the likelihood of spillover benefits along these lines to materialize seems more limited. Empirical analysis based on the NACAL indeed suggests that, in the case of Malawi, smallholders do not benefit from being located close to an estate (Deininger and Xia 2017).

Field data indicate that many estates disintegrated or use much less than the land allocated to them: As actual field boundaries are often very different from registered ones, any attempt to regularize estates will require some form of field-based verification and mapping. The 2017 LUANAR/World Bank estate listing suggests conducted such a mapping for all operational estates -some 5,500 in total- in the 8 districts with the highest number of estates. An example from two estates located in close proximity to each other in figures 3a and 3b (with red denoting the registered boundary and green what was encountered in the field) illustrates the principle: in both cases, shape and size of what is cultivated differ significantly from what is registered and correspond to actual patterns of cultivation visible on the imagery. Actual size is smaller than registered size in figure 3a and larger in figure 3b. Survey information also shows that of the 5,500 operational estates in 8 provinces, only 20% (or 1,108) are still operated exclusively by the owner or his/her successors, 21% ceased to exist as an estate due to subdivision, and 59% have land used jointly by both owners and tenants (table 7 panel 1). Of 32 ha claimed by owners on average, 12 ha or 37% is cultivated by tenants and owners cropped only 3.7 ha (11% of claimed area), leaving an additional 4.7 ha (15%) fallow or in forest. Actual location and size often differ significantly from what is recorded: for 3,401 estates with registry (letter of offer or lease) and performance listing data, 31% and 43% claim an area the size of which is more than 10% above or below of what is recorded in official documentation. Disaggregation by district in table 8 suggests that the share of claimed area operated by tenants is, with 90%, highest in Dowa, followed by Ntchisi and Mchinji (47% and 43%) and lowest in Mzimba (11%) and Rumphi (15%). The only district where owners cultivate more than 20% or 10% of claimed area are Rumphi and as Dowa and Kasungu, respectively.

Levels of disputes over estate land are higher than among smallholders: The estate listing also shows that 12.5% overall (8% of completely owner-operated vs. 15% of completely subdivided estates) are affected by conflict (table 7, panel 2), a figure that is highest in Mchinji and Dowa with about 16%. Assessing the productivity-impact of such conflict will require more detailed data, preliminary evidence suggests that being affected by conflict indeed affects productivity.

Rent payment discipline has eroded: While 70% of estates reported to have paid rent at some point, ground rent payment discipline eroded significantly. Only 26% of estates covered by the listing indicate to have paid rent in any year after 2009 and only 12% did so in 2016. As 99% of respondents indicated a willingness to pay in principle, more systematic collection of rent by Government, combined with adjustment of ground rent rates to match the land's capacity, could allow much higher levels of ground rent collection. Exploring ways to increase incentives for rent collection by MoLHUD or allow it to retain part of what was collected rather than transferring them to Ministry of Finance immediately may be useful..

Estate owners are willing to pay ground rent: Estate owners may well prefer paying ground rent to the current situation where they enjoy de-facto occupation rights but have little or no long-term security. To explore this trade-off in more detail and also obtain a lower bound of potential revenue, estate users in the performance listing were asked what they would be willing to pay if leases were to be renewed for another 20-year period. The mean value of MK 3340 and 12037 (US\$ 4.6 and 16.6) per ha and year for claimed or cultivated land, respectively points towards considerable unused potential for enhancing own-source revenue generation in the estate sector: To illustrate orders of magnitude, multiplying owners' stated willingness to pay ground rent with the amount of land cultivated on estates that exist in reality in the 8 districts covered by the estate performance survey suggests a lower bound revenue potential of about US\$ 1.5 million.

Harnessing the potential requires policy decisions: To realize the potential for own-source revenue in the estate sector, policy decisions are needed on (i) how to define an estate, how to define idle land, and what to do with land that had been leased to estates but is no longer used as an estate (for example, subsistence farming as a result of sub-division or transfer); (ii) what action to take in case of lessees' failure to comply with lease conditions (either in terms of non-compatible land uses or failure to pay ground rent); (iii) how to adjust estate boundaries in case of imprecise original surveys and expansion or contraction of the originally leased area; and (iv) levels of ground rent to be charged for renewal of leases on land that is legitimately occupied by estates; and (v) procedures for re-allocating unused estate land, in particular the role of traditional authorities and local government in this process.

Malawi's land markets fall short of potential: In agrarian economies, economic development is normally associated with specialization and movement of labor out of agriculture, a step that increases the scope for efficiency-enhancing land market transfers. In this context, land rental markets allow individuals to move from agriculture to non-agriculture without forgoing the benefits of land ownership, for example, in terms of a safety net (Deininger and Jin 2006; Promsopha 2015). In the Malawian context, reallocation of land and capital to their most efficient uses is estimated to have the potential of increasing productivity 3.6 fold, contributing to a process of structural change. The importance of land markets for this process is illustrated by the finding that, for farms cultivating only their endowment gains from reallocation are estimated to be 2.6 times larger than for farms that cultivate marketed land only (Restuccia and Santaaulalia-Llopis 2015).

Land rental is widespread but fails do not realize their full potential: Some 9% of producers engaged in agricultural land rental (table 10). Regressions show that rental markets transfer land to households with more limited endowments of land but more family labor, higher levels of assets and education, and productivity (table 11). While formal documents may not be needed if transfers remain short-term and limited to community members, longer-term transfers involving outsiders may be impeded by lack of documentation (Macours 2014; Sadoulet *et al.* 1997) and become a source of conflict even though they offer greater opportunity for out-migration and productivity increases. Tenure regularization can greatly enhance the scope for such transactions as for example in Mexico (de Janvry *et al.* 2015).

Urban areas have considerable potential for own-source revenue generation via ground rent: With a mean size of 0.035 ha and a sales price of US\$ 60,532/ha for land and structure, residential land in urban areas is significantly more valuable than rural land. Rapid rates of urbanization together with public provision of infrastructure and services have led to rapid increases in the value of such land. Documenting property rights to urban land would not only give owners the confidence to make land-related investment and allow them to use land as collateral for credit but also allow systematic collection of land taxes (ground rent) and other land-related fees that would allow the public to capture a share of recent increases in land values. This in turn could allow part of the revenues generated in this way to be used for providing infrastructure and other services and to plan for expansion to enhance cities' competitiveness and job creation.

Collection of ground rent and land-related fees remains well below potential: Despite the potential, coverage and yield of land-related taxes remain limited: according to IHS4 data, only 2.4% of urban

residents paid ground rent and only 1.3% paid property tax. Moreover, current rates of ground rent were last revised in 2005 and, for Lilongwe, are set at a rate of MK 46,900 (US\$ 65) per ha or 0.1% of land value for residential areas. Even without changing rates, this would point towards an annual ground rent potential of 1.6 million in Lilongwe alone, more than three times what MoLHUD collected in the entire country in the fiscal year ending in July 2017. Similar to what emerged in rural areas, if linked to formal land registration, ground rent payment could help greatly increase tenure security and enhance coverage with for documentation beyond the 7% of IHS4 households who reported to have their tenure secured by a formal document (table 10 panel 2). To realize the potential for improved local service delivery via more effective collection of land-related fees, improvements in collection incentives; rate structure and coverage; and data sharing across Government departments would be needed.

Weak land institutions affect productivity by affecting land sales markets: Operation of land markets and use of land as collateral for credit in Malawi is also impeded by restrictions that increase the transaction costs of transferring land via sale. A requirement to get Ministerial approval for every land sale makes land transfers unnecessarily complex and time consuming and introduces a large element of discretion without adding significant value. Also, the ability to make reliable land ownership information available publicly and thus reduce the cost of acquiring information by contracting parties has historically been the key justification for establishing public registries (Arrunada 2009) and easier access to such information has indeed been shown to have increased numbers of registered mortgages and volume of credit as for example in India (Deininger and Goyal 2012). If land registry information is incomplete, of low quality, or not accessible by interested parties at low cost, these benefits are unlikely to materialize and a more detailed review of these issues is thus warranted.

Malawi's land administration system has significant weaknesses: Malawi ranks 95th in the World Bank's 'Doing Business' indicator on 'registering property' not only because it takes 69 days and 6 steps (or 1.7% of land value) to transfer a parcel of land that is already registered but also because of weaknesses in a set of variables measuring the land administration systems' reliability, transparency, and coverage. Comparing these between Malawi and Rwanda, a country that has greatly improved its ranking over the last decade, illustrates not only some of the gaps in Malawi's land registration system but also points towards areas for reform.

Reliability of land registry information is low: As table 12 (panel A) shows, in Malawi textual registry records and cadastral maps are paper-based rather than being held digitally as in Rwanda. This increases the cost of transactions as all entries and inquiries have to be done manually. It also reduces the scope for implementing protocols to enhance record security and traceability of alternation, increasing the potential for records being tampered with or even lost. Beyond this and contrary to international good practice, Malawi lacks unique parcel IDs that would allow linking personal and property registration or textual and spatial information. Unique IDs would be essential not only to improve quality and reliability of land registry data but also to allow interested parties in public or private sector to consult land registry information at low-cost or and to directly enter or remove restrictions -such as a mortgage or a court dispute pertaining to a land parcel- without having to rely on intervention by registry officials. Contrary to what is the case in Malawi, in Rwanda all databases are fully digital and linked, providing a basis for online access (e.g. by banks to enter mortgages) and exchange of information across registries.

Past reform efforts to improve were incomplete and unsustainable: To improve Malawi's position in the 'registering property' rating of 'Doing Business', a Global Title and Deeds Registration system (GTDDRS) was put in place in 2011. This resulted in a reduction of the time required for registering a transfer of registered land from 89 to 69 days -still relatively in international comparison. Moreover, the solution provided remained very narrow, failing to address the lack of transparent processes or to create true interoperability that could have added value to different databases (Vincent *et al.* 2015). Only textual but not spatial parts of land records were computerized and a proprietary system used without making provisions for payment of software license fees. Also, no thought was given to subsequent expansion to include workflow management, valuation and revenue collection, or planning. As a result, the system has

fallen into disrepair and a number of partial but unconnected ad-hoc approaches to deal with urgent needs (e.g. in planning) have been developed.

Land information is difficult to access and not very transparent: The literature shows that a main benefit of a land registry is to make reliable information on land ownership publicly available, thereby reducing the need for contracting parties to acquire such information and thus both the cost and risk of transactions. Malawi's history of reform efforts that were frustrated by complex, centralized, and often discretionary manual processes and a lack of clear procedures of which the public was aware (Land_Equity_International 2010) suggests that greater transparency and definition as well as dissemination of standard procedures may be an essential first step towards reform. However, as illustrated in panel B of table 12 in Malawi there are no service standards for either registry or survey departments, no mechanisms to lodge complaints, no regular public reporting, and even fee schedules are not available online. As this limits the level of customer orientation of and the ability to objectively assess progress towards reducing costs and better meeting customer needs in Malawi, improvements in transparency along these lines would be essential, together with efforts towards computerization of data that would allow online access to registry or cadastral data.

Need for central transaction approvals is a key reason for delays: Disaggregating the 69 days required for a property transfer according to 'Doing Business' suggests that the main bottleneck is the need to obtain the Minister's consent to any property transfer in a process that starts with an application to the Regional Commissioner for Lands, who then forwards this application, together with an accompanying memo, to the Principal Secretary at the Ministry of Lands, who then passes it to the Minister's office. To ensure that the land registry serves customers' and the economy's needs rather than insisting on rules that are no longer justified (and in the longer term also facilitate a quantum leap in the country's openness to investors and its 'Doing Business' ranking, it will be important to explore ways in which the justifications that underpinned this consent requirements can be addressed through alternative means and how the vulnerabilities to fraud and petty corruption that such regulation inevitable generates in a paper-based system can be minimized.

Recently passed Land Acts can significantly reduce cost to make land registration more affordable: A drawn-out debate on legal reform that started with the appointment of a Presidential Commission in 1996 and submission of draft legislation to Parliament in 2006, resulted in the 2016 passage of 10 Land-related Acts by Parliament. By allowing adoption of low-cost and more decentralized means of land service delivery, these provide a basis for addressing some of the key challenges described above. The Survey Act aims to allow use of low-cost modern technology for land surveying, thus allowing to reduce cost by an order of magnitude. Surveys have traditionally accounted for the lion's share in efforts to increase coverage and the Act, if accompanied by appropriate regulation, would allow reliance on general boundaries to register land at a total cost of US\$ 5-6 per parcel as in Rwanda (Nkurunziza 2015). The Registration Act decentralizes registries to district level and, by mandating demarcation of traditional land management areas (TLMAs) clearly delineates the sphere of influence of traditional authorities, thus providing a basis for linking them with local governments.

The Customary Land Act (CLA) recognizes customary tenure and establishes institutions to make it operational: To overcome the dichotomy of statutory vs. customary systems that characterized Malawi in the past, the CLA aims to ensure that customary land holders can enjoy security of tenure and transfer land without having to abandon customary arrangements. Traditional Land Management Areas (TLMAs) at Group Village Headman (GVH) level from the basic spatial units and are identified by a certificate and map of customary land. In each TLMA, a customary Land Committee (CLC) with six elected members (half women) and chaired by the GVH chair will be supported by a Land Clerk, an employee of the local assembly. The CLC, in collaboration with the TA, can grant individuals customary estates of indefinite duration and register rights to these either through a systematic or a sporadic process.

Substantial risks that need to be addressed exist in three areas: While the CLA provides, for the first time in Malawi's history, a framework to recognize and document rights to customary land, as most of Malawi's land remains unregistered, this creates enormous risks of ill-considered efforts leading to unintended

negative consequences. Three risks could easily frustrate efforts to advance in implementation. To prevent this, it is essential that regulation be developed in a careful process that allows to quickly identify and then scale up good practice through pilots.

Registration efforts need to be sequenced to protect against land grabbing: Sporadic registration of customary estates without prior demarcation of public land, awareness raising, and a fully transparent public process could trigger ‘grabbing’ of public or private land by influential individuals or double registration of land that had earlier been assigned to estates, thereby increasing rather than reducing polarization and conflict. Avoiding this danger will require that a sequenced process is adhered to consisting of (i) identification and demarcation of TLMAs as well as public land within them; (ii) systematic confirmation or cancellation of estate leases; (iii) extensive publicity campaigns and a systematic process to register private customary estates; and once these are completed, (iv) initiation of sporadic adjudication processes to any remaining land.

Processes to effectively secure women’s rights need to be identified, piloted, and evaluated: Presence of matrilineal systems is a key characteristic of Malawi’s tenure system and implies gender challenges that will be unique to Malawi. Yet, the CLA gives little guidance on issues of gender and inheritance. Experience in other countries suggests that, unless ways to ensure that approaches to land registration explicitly seek ways to safeguard women’s rights and rigorously evaluate gender impacts before a national roll-out, they run a risk of inadvertently contributing to a systematic dis-empowerment of women (Ali *et al.* 2014).

Cost-effective processes are key to coverage and long-term sustainability of land registries: While the law contains great detail on the institutional requirements for implementing the CLA, these have not been costed. Also, institutional reform at central level will need to be carefully linked with models to manage land information to respond to demand in a decentralized setting that as of now do not exist. To prevent implementation arrangements from becoming unaffordable (as in Uganda) or unsustainable and –affordable in the long term, arrangements will need to be piloted carefully, relying on existing institutions and personnel (who can perform land related functions part-time until demand is sufficiently high) and use of IT to reduce requirements and cost wherever possible.

Institutional reform is essential to improve transparency, quality, and access to land information: Such reform needs to (i) improve **transparency** by eliminating conflicts of interest between the land management and judicial functions performed by the MoLHUD and clarification and publication of workflows for land services and improve internal controls or audits; (ii) improve **client orientation** by publication of manuals, customer guides, service standards, fee schedules, data access policies, and complaints mechanisms; (iii) improve **quality and currency of data** by adopting an interoperable system to manage textual and spatial land information, ideally linked to personal registration, and ensure the Ministry has the resources and skills for implementation; (iv) reduce **cost of service provision** by removing unnecessary procedures, streamlining internal management, inventorizing assets to ensure their effective use, delegating responsibility wherever possible; and enhancing interoperability and sharing of information in Government (e.g. the national ID scheme) and with the private sector; (v) eliminating conflicts of interest between the land management and judicial functions performed by MoLHUD and enhance **accountability** by improve internal controls or audits results of which should be publicized; allowing private sector access to land data; and implementing a system to set targets and regularly monitor the effectiveness in meeting them internally with information on key indicators being made available publicly at regular intervals.

There is large potential for more effective own-source revenue generation: With estate owners willing to pay much higher ground rent than they are currently charged in return for tenure security and only a fraction of the potential to collect land-related fees in urban area realized, there is considerable scope for more effective collection of land-related revenue that could eventually help fund improved land service delivery or expansion of coverage with secured land rights. To realize it there is need for (i) revision of **lease fees** for (expired) estates in ways that encourage efficient utilization of land (and divestment of non-utilized land to those able to make better use of it via market- or non-market mechanisms; (ii) strengthening urban land

valuation functions and quantifying the amount of resources that could be raised by more effectively collecting land related fees in urban areas by more effectively collecting current ground rent and property taxes in urban areas, improving assessment, and allocation of urban plots for purposes other than social housing through a competitive auction process; (iii) regular public provision of key land data (e.g. prices governance aspects of land and allowing *use of registry information* as a basis for land use planning, provision of land-related services, and capitalization of increases in land rents in urban and rural areas.

Malawi has a historic opportunity to increase coverage with secure land rights via CLA implementation:

With formal recognition limited to estates, Malawi's land institutions have historically exacerbated pre-existing inequalities rather than helping to overcome them. Recent passage of the CLA provides an opportunity for Malawi to quickly improve land administration in ways that build on best practice in other African countries in an equitable, cost-effective, and sustainable way. In addition to dissemination (together with institutional reform), steps needed include (i) certification and publication of TLMAs to establish local authority and accountability; (ii) review and renewal of all estate leases under realistic fee schedules and provisions to bring unused estate land to effective use; and (iii) a systematic process of registering customary estates that includes a minimum of planning, safeguards rights by individual land users, especially women, and the public at large, and that is financially sustainable (i.e. does not impose costs beyond willingness and ability to pay by land users or the state. While this is a tall order the accomplishment of which will require considerable determination, the benefits could be enormous.

The Land Acts' impact will depend on regulations: Although the 2016 Land Acts provide an opportunity for Malawi to quickly improve land administration in a way that builds on recent good practice in other African countries, its ultimate impact on productivity of land use, socio-economic outcomes, and Malawi's ability to put in place a sustainable system for land administration and management will depend on how key implementing regulations are framed. Survey standards, the ability to delegate responsibility to local para-surveyors, and maintenance arrangements will be key for cost-effectiveness, speed, and sustainability of efforts in this regard. Using costs incurred in Rwanda, a program to systematically demarcate, adjudicate, and register smallholders land (as 'customary estates'), preceded by systematic TLMA registration and renewal or cancellation of estate leases would require an investment of US\$ 30-40 million. If it were to provide a basis for resolving existing disputes, avoided productivity losses in the smallholder sector alone would allow to recoup all of these investment costs in less than three years. Although there is need for careful piloting and impact assessment to ensure existing rights, especially those by women, are respected and enhanced in the process and to establish sustainable and cost-effective arrangements for first-time registration and data maintenance, undue delays will not only imply a failure to realize benefits but could also contribute to exacerbating the intensity and impacts of conflict.

Table 1: Characteristics of sample households

	All Malawi	North	Region Central	South	Head's gender	
					Male	Female
Household characteristics & assets (IHS4)						
Durable goods (US\$)	242	309	253	211	296	118
Agricultural implements (US\$)	33.90	60.39	37.47	21.90	39.81	20.17
Livestock and poultry (US\$)	89.86	149.12	78.10	77.15	107.16	49.64
Grass roof (%)	0.57	0.45	0.66	0.55	0.56	0.60
Mud floor (%)	0.77	0.67	0.80	0.79	0.76	0.80
Head born in the village (%)	0.56	0.59	0.59	0.53	0.51	0.68
Head had main job in non agriculture (%)	0.17	0.14	0.20	0.15	0.19	0.12
Land tenure & agriculture (IHS4)						
Have ownership document	0.020	0.022	0.020	0.019		
Land size (ha)	0.62	0.64	0.76	0.50	0.67	0.49
Crop income (US\$)	254	358	366	135	288	172
Will not possess some land in 10 years (%)	0.33	0.21	0.34	0.37	0.32	0.36
Will likely be land dispute in 5 years (%)	0.04	0.05	0.05	0.03	0.04	0.05
Have been concerned disputes (%)	0.09	0.09	0.09	0.09	0.09	0.09
Had disputes or disagreement over land (%)	0.06	0.05	0.07	0.06	0.07	0.06
If yes, resolved by traditional leaders (%)	0.69	0.81	0.60	0.73	0.70	0.67
Number of households	9,628	1,658	3,324	4,645	6,732	2,896
Incidence of land conflict (NACAL)						
Land conflicts by village families (%)	0.293	0.276	0.279	0.316		
Land conflict with neighboring villages (%)	0.195	0.177	0.204	0.194		
Estates within walking distance (%)	0.245	0.259	0.265	0.216		
Land conflict with neighboring estates (%)	0.045	0.038	0.056	0.036		
Inheritance practices (NACAL)						
Matrilineal and neolocal (%)	0.040	0.000	0.029	0.071		
Matrilineal and matrilineal (%)	0.413	0.004	0.316	0.709		
Matrilineal and patrilineal (%)	0.219	0.019	0.440	0.063		
Patrilineal and neolocal (%)	0.018	0.014	0.017	0.021		
Patrilineal and patrilineal (%)	0.263	0.927	0.140	0.096		
Do not know/other (%)	0.047	0.036	0.058	0.041		
No. of villages	4,107	729	1,784	1,594		

Source: Own computation from 2015/16 IHS4 (top panel) and from 2006/07 NACAL (bottom panel).

Table 2: Determinants of perceived fear of land loss tenure insecurity

	Overall
Household characteristics	
Had land encroached upon in last 10 years	0.096***
Had land taken away (exploited)	0.103***
Had dispute with relative on husband side	0.213***
Had dispute with relative on wife side	0.159***
Had disputes with other relative	0.149***
Had disputes with non-relative	0.178***
Share of land borrowed	0.068***
Renting out land	0.027*
Share of customary land	-0.016*
Share of land located outside vlg	0.026***
No. of years cultivating land	-0.001**
Share of land operated by owner	-0.053***
Respondent born in the village	-0.051***
Respondent's main job is non ag.	0.019**
Village level characteristics	
Households moved out due to land conflict	0.055**
Village had unallocated land	0.026**
Estates within walking distance	0.026**
Unallocated land*estates in walking dist.	-0.062***
Observations	15,472
R-squared	0.083

Note: Figures in the table are estimated coefficients from a regression of individual operator's perceived tenure insecurity on a host of independent variables. District fixed effects are included throughout but not reported as are Plot level controls (land area and topography), household controls (number of children, number of adults, number of old people, married or single-headed couples, head's age, gender, education, birth place, main job, ownership of durable goods, housing conditions, value of livestock and poultry, agricultural assets, and shocks) and village controls. Standard errors (not reported) are clustered by village: *** p<0.01, ** p<0.05, * p<0.1.

Table 3: Impact of perceived tenure insecurity on soil conservation investment and crop output

Dep. Var.	Permanent soil and water conservation structures		Crop output	
Fear	-0.054***	-0.054***	-0.040**	-0.084***
Fear*male respondent		-0.000		0.066*
Did crop rotation				0.090***
Built terrace				0.094***
Inh. patrilineal	0.016	0.016	-0.169***	-0.107*
No. of obs.	9,702	9,702	13,733	13,733
R-squared	0.107	0.107	0.395	0.397
F Tests:				
F-test of Fear+Fear*male=0		28.70***		0.62

Note: Dependent variable is a zero-one indicator of whether permanent soil and water conservation structures were constructed based on the 2015/16 IHS4 (cols. 1 and 2) or the logarithm of output value based on the 2006/07 NACAL. District fixed effects are included throughout but not reported and other controls are identical to those reported in table 2. Robust standard errors are clustered by village. *** p<0.01, ** p<0.05, * p<0.1.

Table 4: Number & area awarded annually under agric. leases

	Leases/year No.	Area/year 1000 ha
1965-86	104	10.79
1987-94	2626	64.85
1995-2006	230	6.71
2007-16	112	9.08

Source: Own computation from the National Geographical Estates Database

Table 5: Descriptive statistics for agric. estates

	Agric. estates			
	All	North	Center	South
Total area (1,000 ha)	1,348.76	230.63	871.61	246.52
Mean area (ha)	39.80	39.49	35.12	76.23
Has deed (%)	42.03	43.33	40.07	54.49
Has offer but no deed (%)	37.09	27.70	41.91	17.86
Sketch plan (%)	51.65	52.07	52.85	41.94
SD plan (%)	46.47	46.61	45.94	50.23
Deed plan (%)	1.87	1.32	1.21	7.83
Lease expired (%)	69.65	63.13	74.64	43.98
Lease term ≤ 10 a (%)	2.64	1.55	2.43	6.27
Lease term > 10 a (%)	5.46	4.82	4.04	17.30
Annual rent (US\$/ha)	0.79	0.37	0.53	3.59
No. of obs.	35,140	6,181	25,560	3,399

Source: Own computation from the National Geographical Estates Database.

Table 6: Estate characteristics by size

	All	Size category in ha				
		5-10	10-50	50-100	100-500	>500
Estate ownership						
Years run by the current owner	18.99	12.54	15.28	21.13	19.84	30.77
Owner is Malawian (%)	72.58	82.76	92.42	80.21	50.52	29.75
Owner is expatriate (%)	10.48	0.00	1.18	4.17	29.17	20.66
Owner is government (%)	2.19	0.00	0.00	3.13	5.21	4.96
Owner is other (%)	14.17	17.24	6.40	12.5	15.1	40.49
Land use intensity						
Area owned	433.86	8.52	21.61	74.28	272.36	2,544
Area operated	66.98	5.77	10.27	27.42	80.21	294.53
Labor demand						
Total wage bill per ha (US\$)	131.95	144.42	133.60	174.62	138.21	77.64
Hired perm. male labor (%)	64.40	58.62	52.13	52.08	82.29	91.74
No. of perm. male labor per ha	0.60	0.93	0.40	0.45	0.89	0.88
Hired perm. female labor (%)	27.19	17.24	12.09	23.96	47.92	52.07
No. of perm. female labor per ha	0.19	0.19	0.11	0.05	0.19	0.58
No. of obs.	860	29	422	96	192	121

Source: Own computation from 2006/07 NACAL.

Table 7: Estate characteristics based on actual survey

	Total	North	Central	Owner	Owner & tenants	Tenant only
Panel A: Size & land use intensity						
Claimed size (ha)	32.32	45.79	30.16	41.59	31.92	24.63
o/w tenant cult.	11.97	5.09	13.07	0.00	15.11	14.64
of which own cult.	8.35	14.65	7.34	20.96	6.96	0.00
o/w own cropped	3.68	4.43	3.56	9.20	3.09	0.00
Share with forest	0.629	0.431	0.677	0.504	0.692	0.595
Share cropped	0.484	0.208	0.552	0.221	0.570	0.595
Panel B: Nature of documentation and correspondence of area to registry data						
Has formal title	0.296	0.414	0.277	0.253	0.336	0.228
Has offer only	0.529	0.530	0.528	0.484	0.584	0.417
Claimed area g > 10%	0.316	0.373	0.309	0.333	0.298	0.348
Claimed area l > 10%	0.427	0.384	0.432	0.465	0.422	0.405
Informal sales receipt	0.346	0.271	0.358	0.322	0.383	0.266
Informal document/map	0.300	0.518	0.265	0.282	0.366	0.135
Panel C: Ownership, transfers, and disputes						
Owned by orig. owner	0.603	0.627	0.599	0.642	0.621	0.514
Original owner deceased	0.302	0.246	0.311	0.186	0.316	0.374
Orig. owner transferred	0.096	0.126	0.091	0.172	0.063	0.112
Transferred to kids	0.567	0.473	0.581	0.325	0.668	0.520
Transferred to relatives	0.245	0.265	0.242	0.242	0.247	0.242
Transferred to others	0.188	0.258	0.177	0.431	0.085	0.238
Lease is still valid	0.159	0.289	0.138	0.303	0.110	0.156
Any dispute?	0.126	0.096	0.130	0.076	0.135	0.148
Dispute in family	0.329	0.247	0.339	0.155	0.350	0.364
Dispute with authorities	0.197	0.205	0.196	0.298	0.190	0.168
Panel D: Historical rent payment						
Ever paid rent	0.702	0.661	0.709	0.628	0.773	0.580
Paid rent in 2016	0.115	0.070	0.122	0.152	0.111	0.095
Paid rent after 2010	0.261	0.303	0.254	0.339	0.265	0.162
No. of obs.	5,485	759	4,726	1,108	3,210	1,167

Source: Own computation from LUANAR/WB estate performance listing.

Table 8: Mode of estate operation and share operated by owners and tenants by district

	Mode of operation			Share of area by			Claimed size		N
	Estate only	Estate & tenants	Fully subdivided	Owner incl ¹	Owner excl ¹	Tenants	More ²	Less ²	
Rumphi	0.434	0.491	0.075	0.569	0.237	0.151	0.391	0.283	106
Mzimba	0.450	0.490	0.060	0.289	0.080	0.106	0.370	0.398	653
Kasungu	0.171	0.629	0.201	0.245	0.143	0.395	0.301	0.413	2,391
Nkhotakota	0.254	0.395	0.351	0.345	0.066	0.291	0.401	0.462	504
Ntchisi	0.161	0.651	0.188	0.228	0.083	0.474	0.385	0.385	261
Dowa	0.117	0.582	0.300	0.268	0.171	0.901	0.268	0.477	819
Salima	0.371	0.306	0.323	0.326	0.075	0.162	0.493	0.377	124
Mchinji	0.077	0.719	0.204	0.143	0.074	0.435	0.268	0.454	627
Total	0.202	0.585	0.213	0.258	0.114	0.370	0.316	0.427	5,485

Source: Own computation from LUANAR/WB estate performance listing.

Notes: ¹ Owner incl. means area includes fallow and forest whereas excl. means that fallow and forest is excluded.

² Columns denote the share of estates (out of the 3,401 that have either a letter of offer or a lease providing information on allocated land size) where claimed land size either exceeds allocated land size by more than 10% or is more than 10% below allocated size.

Table 9: Self-reported willingness to pay for lease renewal by owners

	Owners only		
	Total area	Used area	N
Rumphi	2.83	12.97	46
Mzimba	3.88	19.68	294
Kasungu	5.73	14.66	408
Nkhotakota	3.57	25.64	128
Ntchisi	2.20	17.22	42
Dowa	5.88	12.49	96
Salima	2.27	18.06	46
Mchinji	3.96	9.54	48
Total	4.62	16.59	1108

Source: Own computation from LUANAR/WB estate performance listing.

Table 10: Land rental and sales prices in Malawi

	All	North	Center	South
Panel A: Urban residential land				
Area (ha)	0.035	0.023	0.042	0.042
Sale price (\$/ha)	60,532	73,594	58,308	46,704
Rental price (\$/ha)	11,008	13,337	10,379	9,165
Share with title	0.069	0.069	0.068	0.070
Pays ground rent	0.024	0.032	0.019	0.023
Pays property tax	0.013	0.019	0.011	0.011
No. of households	2,427	590	841	996
Panel B: Rural agricultural land				
Area (ha)	0.617	0.640	0.763	0.504
Yield (US\$/ha)	455	590	490	383
Profit (US\$/ha)	388	485	425	328
Hypothetical sales price (\$/ha)	1,794	2,006	1,735	1,762
Hypothetical rental price (\$/ha)	104	130	99	99
Rents in some land	0.090	0.074	0.116	0.077
if yes, price (\$/ha)	89	125	83	83
Purchased land last 10a	0.027	0.023	0.027	0.029
Sold land last 10a	0.004	0.005	0.005	0.004
No. of households	9,960	1,890	3,370	4,700

Source: Own computation from IHS4

Table 11: Determinants of land market participation

	Rent in	Rent out	Purchased.
Productivity	0.040*	-0.011	-0.012
Owned area	-0.050***	0.007***	-0.008***
# of labor	0.004*	-0.000	0.002*
Head born in the community	-0.034***	0.005*	-0.005*
Head with secondary educ.	0.039***	-0.004	0.005
Head with college and above	0.105**	0.006	0.078*
Value of durable goods)	0.016***	-0.002**	0.006***
Value of ag. Assets	0.013***	-0.004**	0.002
Observations	6,829	6,829	6,193
R-squared	0.121	0.023	0.049

Source: Own computation from IHS4 data

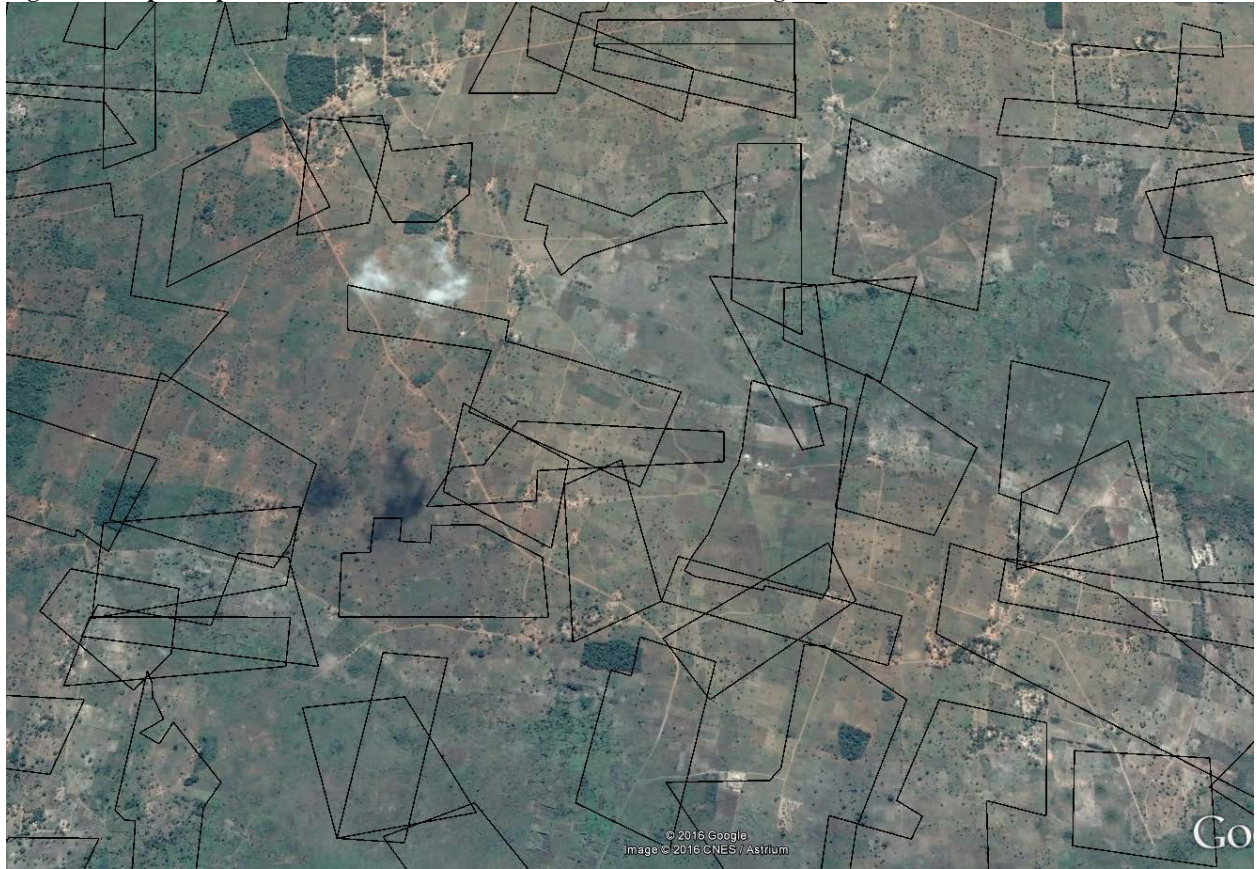
Note: Columns report estimated coefficients from probit regressions for whether a household rented in or out in the last season or purchased land in the 5 year period preceding the survey. The productivity measure is the distance to the frontier as measured by a frontier production function. District fixed effects are controlled for throughout and only a subset of coefficients is reported. Robust standard errors are clustered by community. *** p<0.01, ** p<0.05, * p<0.1. Purchase is last 5 years.

Table 12: Comparing reliability of infrastructure & land administration transparency between Malawi to Rwanda

	Malawi	Rwanda
Panel A: Reliability of land registry infrastructure		
How are registry records stored	Paper	Fully digital
Electronic database for encumbrances	No	Yes
How are cadastral records stored	Paper	Fully digital
Electronic database with cadastral info	No	Yes
Registry and cadastre linked	No	Yes
Unique property ID	No	Yes
Link to national ID database	No	Yes
Panel B: Transparency of land registry information		
Registry records available online	No	Yes
Registry fee schedule available online	No	Yes
Registry has service standards	No	Yes, online
Registry has complaints mechanism	No	Yes
Registry statistics available publicly	No	Yes
Cadastral records available online	No	Yes, online
Surveying fee schedule available online	No	Yes, online
Survey Dep't has complaints mechanism	No	Yes
Panel C: Time and cost for a property transfer & overall ranking		
No. of steps for transfer	6	3
Days needed to complete transfer	69	12
Monetary outlay for transfer (% of land value)	1.7	0.1
Overall rank(1=top)	95	4

Source: World Bank Doing Business Database

Figure 1: Graphical part of Malawi's estate lease database overlaid on Google Earth



Source: Spatial data from the National Geographical Estates Database overlaid with google earth.

Figure 2: Non-parametric regressions of yield for main crops for smallholders and estates

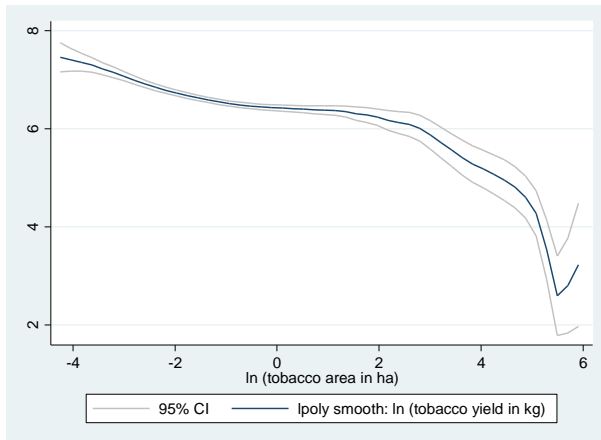


Figure 3a: Tobacco

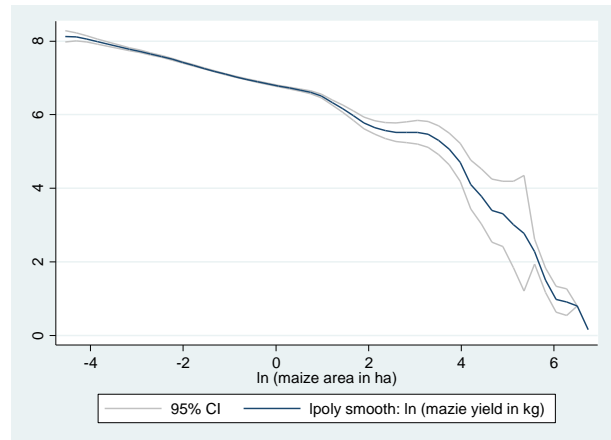


Figure 3b: Maize

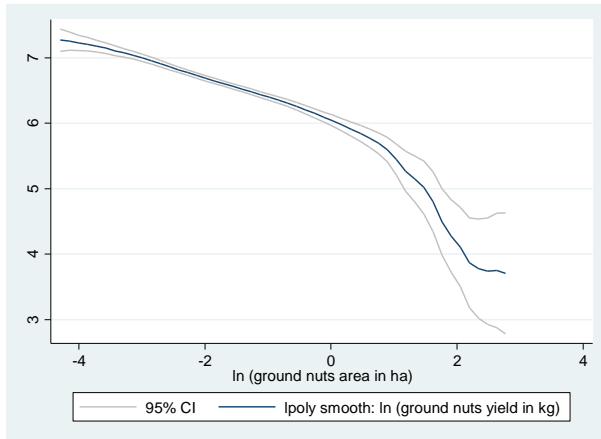


Figure 3c: Ground nuts

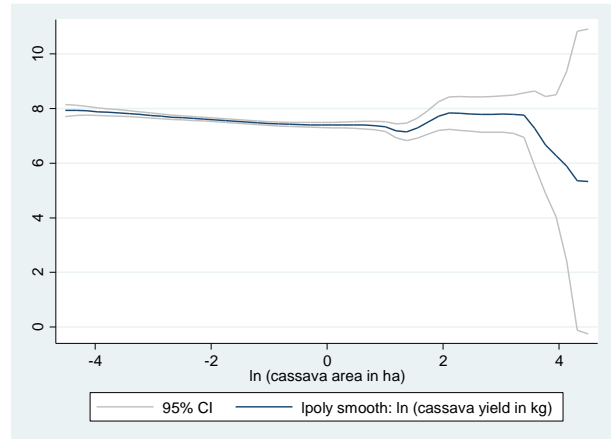
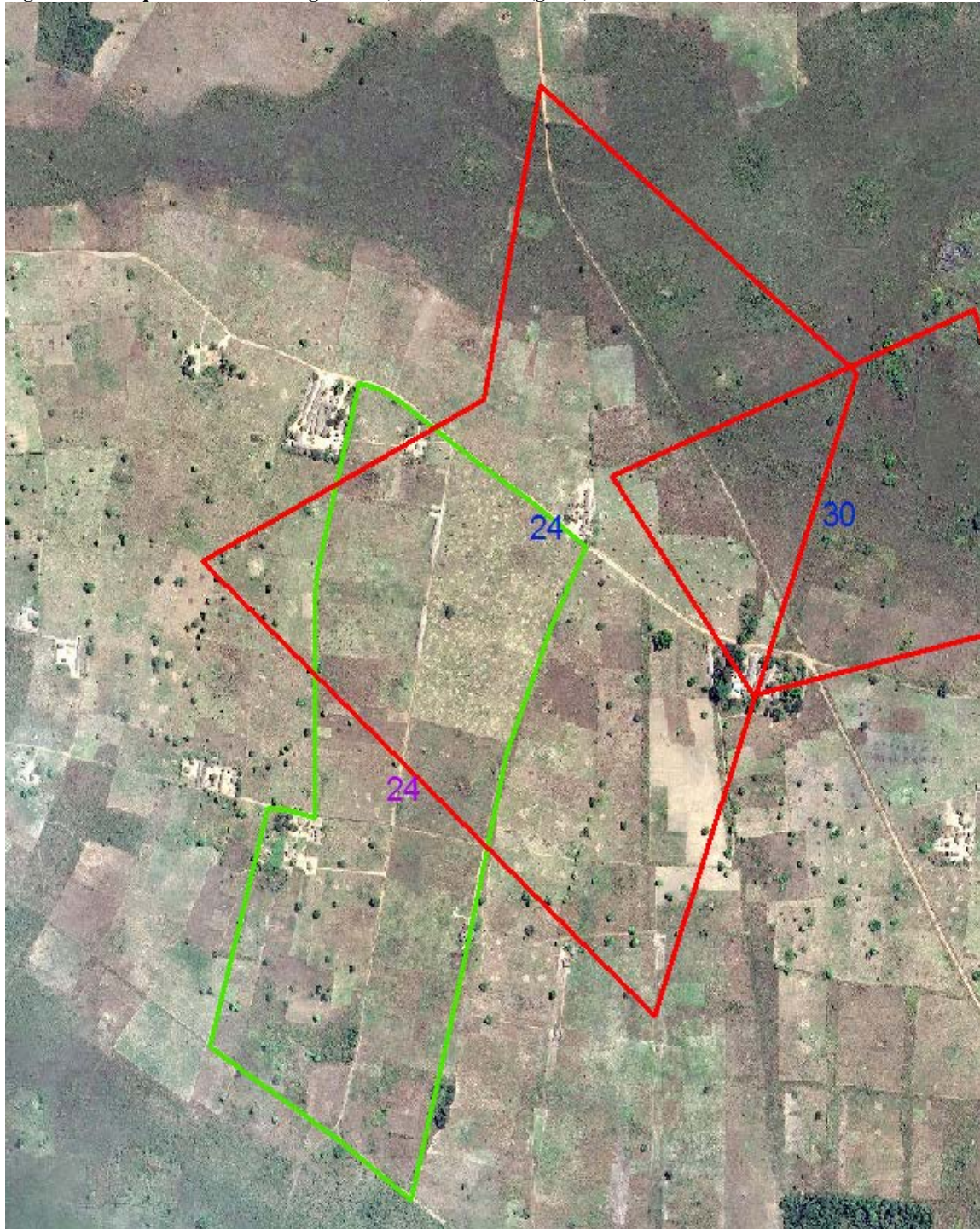


Figure 3d: Cassava

Source: Own computation from 2006/07 NACAL.

Note: As explained in the text, both smallholder and estate samples are included.

Figure 3a: Comparison between registered (red) and actual (green) boundaries for two estates



Source: Spatial data captured by the 2016/17 LUANAR/WB estate performance listing.

Figure 3b: Comparison between registered (red) and actual (green) boundaries for two estates



Source: Spatial data captured by the 2016/17 LUANAR/WB estate performance listing.

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