



**LOOKING BEYOND LAND REGULARIZATION IN MOZAMBIQUE**

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## LOOKING BEYOND LAND REGULARIZATION IN MOZAMBIQUE

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### ABSTRACT

Mozambique is experiencing a period of great economic activity, reflected in an annual GDP above 7% in the last five years and, according to the World Bank projections, will continue until 2017. The increase in economic activity and growth of businesses and services creates greater demand for support infrastructure, where land availability and access is paramount to guarantee sustainable growth.

In Mozambique, as in some other countries, land belongs to the state, and private land ownership is not allowed, but the law gives the right to use and benefit from land (*Direito de Uso e Aproveitamento da Terra* - DUAT). However, our experience in last 7 years indicates that the formalization of this right has been slow and complex, demoralizing sometimes the establishment of people and businesses in certain locations. By moving from a reactive land allocation system to systematic land regularization, the land sector will modernize and become more sustainable through widening the land tax base and improving its tax collection. The country may have today an excess of 8 million land holders, but only less than 53 thousand title holders, who are (somewhat) registered in the national roster are considered with a potential to pay a land tax. We investigate the need to move from a small yearly revenue to an increased and wider tax base revenue as a way to increase sustainability for the development of SiGIT (national land information management system) and we discuss the need to move from a few thousands land registrations to up to a million or more registrations per year.

This paper analyses four essential pillars required for a more robust, transparent and self-sustaining land management system in Mozambique. We make state of the art claims and propose legal and technical review in chapters of transmission, data integration, tax collection and regulation of systematic registration. This article proposes in detail the measures which, in our view, will bring improvements to the identified pillars and consequently to land management.

### KEYWORDS

*Land management, legislation review, data integration, sustainable cadaster*

The legal framework for land in Mozambique is dealt with under different sectors. Not more than a year ago the land sector was managed under the Ministry of Agriculture but it is now under a new ministry, MITADER (Ministry of Lands, Environment and Rural Development). Through analyzing the Constitution and several laws with respect to Land Administration, including the Land Law, Environmental and Natural Resources' Law, as well as policies approved by the government, the following working principles for land use can be inferred:

- Land belongs to the State, and people and entities are entitled to use and occupy. Good faith occupation and customary traditions are recognized in the land law;
- While the State has the responsibility to administer all rural land, municipalities will do so for all municipal (urbanized) land. The Ministry of State Administration has the responsibility to approve the legal boundaries between municipalities and district (rural) lands. The land cadaster is therefore dually managed – all district lands (or rural) by the recently created Ministry of Lands, Environment and Rural Development (MITADER) and municipal lands by each Municipality; The urban and the rural systems are quite distinct in terms of their objectives, legal framework and institutional responsibilities, and each represents a significant challenge in its own right.
- Local communities are recognized as entities and land can be delimited to express formally the boundaries through the issuance of a Certificate;
- Traditionally the administration of land is carried out in a reactive way, titles to land are issued on an as requested basis, and therefore interested parties must approach the different land entities for their rights to be formalized into the Right to Use and Tender the Land (DUAT); therefore the number of formal land titles until 2010 were less than 53 thousand, managed in an analog paper base system;
- The provisions in the Land Law for payments for DUATS identify that the value of the fees "...is established taking into account the location of the land plots, their dimensions and the purpose of their use and benefit." They do so in the context of the law, which identifies its purpose in the preamble as being to "encourage the use and benefit of land so that this resource (. . .) is valued (. . .)", however in practice the tax payment provided for under Mozambique's Land Law has not generally received the same level of attention as other areas of implementing the Law. Perhaps this is because of its complexity as well as the sensitivity to a more socially orientated economy. However in the same law, Article 29 establishes cases for free use of land according to the quality of the user including: a) The State and its institutions; b) Associations that are for public uses and are recognized by the Council of Ministers as such; c) Family uses, local communities and the individual persons who belong to them; d) National small-scale agricultural and livestock cooperatives and associations. This broad base of exclusions creates impediments to any economic viability of the land management system.

Our observation indicates that after registration there is a lack of focus from the land authorities, leaving no clear regulation and instructions to whatever must happen after regularization, consequently: i) Failure to register all cadaster updates (and transactions) invalidates the entire registry which becomes immediately out of date due to fast land occupation dynamics; ii) besides not being compulsory to register infrastructure made on land (*registo predial*), having an associated cost to do it, and the existence of two registries (one for land and another for infrastructure); most people stop at the formalization of the land right (DUAT), paving the way for illegal construction and disrespect for any land development plans; iii) Transactions of land in a writing, within personal relationships, are not recognized by the current land system; iv) when construction of social interest infrastructure is required, municipalities are faced with major planning problems, due to illegal occupations and/or illegal constructions; iv) In cases where resettlement is needed, it ends up being an additional and expensive baseline survey of the affected areas, while an updated registry could allow for a much more expedited survey, requiring only validation/verification work. These items list the main problems today's land administration faces. Our article details in 4 different chapters the way to go forward in considering the improvement of land management in Mozambique.

## **TRANSMISSION**

**The 2004 Constitution of the Republic maintains the same basic principles as the above:**

- In Mozambique the land is the exclusive property of the State;
- The land cannot be sold, mortgaged, pledged or subject to any form of alienation;
- As a universal way of wealth creation and social welfare, the use of land is the right of all Mozambicans;
- The state provides the DUAT and determines the conditions for such use.

## **Holders of DUAT and Acquisition Methods**

- **Who may hold DUAT:**
  - a) Individual or collective national person;
  - b) Foreign individual persons (who have lived at least 5 years in Mozambique) and foreign collective persons (who are registered and incorporated in Mozambique), in both cases, with approved investment projects.
- **How can the DUAT be acquired:**
  - *Indigenous Rights “aquisição originaria”*(article 12 da LT):
    - According to customary norms and practices – national individual person and local community;

- According to good faith occupation for at least 10 years - national individual person;
- Through application for authorization, submitted by individual or collective, national or foreign.
- *Acquisition derived:* transmission *mortis causa* or between live people. In this case as a result of the transfer of goods or improvements developed on the land plot.
- **Transmission of DUAT:**
  - *Mortis causa:*
    - The DUAT is transmitted by inheritance. This process is regulated by the Civil Code and does not require prior authorization of the entity that authorized the DUAT;
    - The heirs must prove to inherit through their certificate or enabling heirs sentence;
    - The heirs should also make the registration (endorsement) of transmission with the Land Registry.
  - *Between living people:*
    - The law allows the transmission of improvements, buildings and infrastructure between living people;
    - For the purposes of transmission between live people, two concepts of land law are particularly relevant, in particular, urban building and land property.

The transmission infrastructure, buildings and improvements in the case of land property is subject to prior authorization by the entity that authorized the DUAT. The approval will be subject to the following verification:

- the fulfillment of the business plan or the proposed development;
- payment of annual fees for the DUAT.

In the case of urban property, transmission does not require permission. With the transmission of the property deployed in the area, the DUAT is transmitted automatically. The DUAT can also be transmitted temporarily, through an exploration assignment agreement. This contract is subject to prior approval and in the case of community areas, also requires their consent. Any of the above transmissions must be made by public deed and must then be prompted to update the land registry in the name of the new DUAT holder or property owner. In cases of an exploration assignment agreement, it is done as an endorsement to the existing record in the name of the DUAT holder.

In addition to the legal requirements for the transmission of a DUAT, land legislation does not detail the procedures to be followed. However, it is noted that in practice the process includes the following procedures:

- Processing and expedient organizing in the SPGC - Provincial Services for Geography and Cadaster (SPGC will request the relevant documents for the correct identification of the parties and the project in question or the new use to be given to the DUAT);
- Provincial Governor's authorization or if an area is over 1000 hectares, a formal feedback;
- Conduct and organization of the process by the competent institution, once it is received from SPGC;
- Land Minister authorization or, if the area is above 10,000 hectares, a formal feedback;
- Approval from the Council of Ministers , in the case of areas over 10,000 hectares;
- Coordinating the applicant's notification on the decision and the registration of the assignment.

### **Particularities of Urban Land Regulation (RSU)**

Urbanization is a prerequisite to access a DUAT in urban areas. These urbanized areas should include a social and public services equipment plan. Urbanization may be basic, intermediate or complete. The Urban Land Regulations provides for the following forms of DUAT acquisition:

- a) *Deferment of a petition to occupy a parcel*: available only for national individuals or collective people. Applications are submitted by the applicant and addressed to the competent authority;
- b) *Raffle*: this mode applies only for areas that fall under the category of basic urbanization plan, determined by the quantity and quality of facilities for public use made available to users, and will apply only to national individuals. The regulation also states that 20% of the plots to be drawn should be reserved for low-income people, and others in less favored conditions.
- c) *Auction*: this mode is conditioned on meeting two basic assumptions, namely, (i) that the plots or parcels are entirely inside an area with an approved urban plan of at least an intermediate category plan, and (ii) that they are intended for housing, commerce or services. This mode will be available to any person or entity, including foreign nationals.
- d) *Private negotiation*: this mode is available to any entity or persons, including foreigners. It will be negotiated case to case, between the competent authorities and proponents of projects. Where appropriate, the competent authority may, before trading, do a survey of possible candidates and pre-qualification of the same.

The Land Law and Urban Land Regulations – For infrastructure like buildings, the transmission of DUAT is not subjected to the authorization of the entity that approved it. However, for a Rural DUAT any improvements made to a parcel or land plot can be transmitted (land improvements, buildings and infrastructure) only if

authorized by the respective land authority. In the transmission of a DUAT - concept of urban property - the RSU broadens its scope to include plots. This implies that the DUAT on urban areas become freely transferable, without any prior authorization from the competent authority, not even for the implementation of any previous construction. This should only be compulsorily endorsed through the transmission in the title of the DUAT. This way is considered by many as unconstitutional and illegal. Most of the standards of the Urban Land Regulation are not effective, because it was not created by legal instruments (for example, management plans, surveys, etc.), and because there is still resistance in accepting some of the changes as is the case of the free transmission as meeting the legal requirements. At the same time, there is not much experience in the application of new methods of acquiring the DUAT, especially through the raffle and auction.

### **Special Licenses**

Access to land and its use for commercial purposes in officially protected nature areas and declared special economic zone activities is done by Special License. The legislation does not specifically determine the mechanisms, requirements and conditions for concession and transmission of special licenses, as is done for concession and transmission of a DUAT. In the absence of specific regulations, it has been adopted for the allocation of special permits, by analogy, the same rules applicable to concession and transmission of a DUAT.

- This analogues application has brought some negative consequences;
- The validity dates of special permits have been randomly assigned when the deadlines for the DUAT are not applicable;
- Normal DUAT rates have been applied to special licenses, which is not compatible with the goal of protection areas, i.e. conservation of nature.

Considering the goal of protection zones - nature conservation – it is urgent to adopt a specific legal regime applicable to special licenses. The scheme should, among other things, regulate the following aspects:

- clear definition of the mechanisms and procedures for concession and transmission of a special license;
- definition of the applicable rates and timings;
- clear definition of the type of activities that can be exercised within the protection zones and under special licenses;
- defining the type of infrastructure that can be built, in coordination with the respective environmental permits and management plans.

## **Some considerations and general reflections**

- The question of land ownership should be reviewed and discussed extensively in order to prevent the current problems in the interpretation and application of land legislation;
- Legislative amendments can be partial and gradual;
- The concept of land improvements in the Land Law is vague, implying discretion of the officer when assessing the fulfillment of requirements that allow the transmission of a DUAT and opening space for corrupt practices. Maybe we should adopt an objective criteria, such as type of activity, amount spent in relation to land tax, etc;
- Where there is a business plan (or proposed development), the issue of compliance with it has also been interpreted with discretion by varying the practical application from province to province (and municipality to municipality);
- Practice has shown that transmission (both final assignment or temporary) requires a better adjustment and clarification in order to impute greater security in commercial transactions;
- Article 15 of land law implies that provisional DUAT transmission is prohibited, but in practice it happens;
- It is necessary to standardize the rustic and urban property concepts of the Civil Code with the Land Law and RSU;
- It is necessary to discuss transmission of an exploration assignment agreement (*acordo de cessão de exploração*);
- It is necessary to improve legislation on community consultations and resettlement.
- It is necessary to clarify the use of land as a financing guaranty.

## **DATA INTEGRATION**

The adoption of Land Information Management System (SiGIT) as a software tool for cadastral land management is necessary. The assumption is that the tool is used for delimitation and demarcation of plots/buildings and rights associated with them. But this software tool, to be effective, must be part of the State electronic platform, so other sectors dealing with registration, can relate to it: Municipal Cadaster Offices, Provincial, Registry of Notarial Records and Civil Documents (birth, marriage, divorce, death, Tax Number, etc.). Presently only approached in theory in practice this is one of the biggest weaknesses of the cadaster sector in Mozambique and there is a strong need for integration and communication between all sectors dealing with land issues / infrastructures.



It should be recognized that the creation of the new Ministry of Lands, Environment and Rural Development (MITADER) as well as the implementation of the national cadaster project "Terra Segura" (5 million DUATs), is seen by the authors of this article as a great opportunity for the Ministry and its National Directorate of Lands (DINAT) to become the entity that can bring the "space" dimension for all state applications, making the process even more efficient in terms of e-governance, with a large field of cooperation and institutional partnership between INTIC, MITADER and DINAT.

Consequently, and assuming that MITADER and DINAT appropriates the newly created tool, SIGIT, it is important to stress a few important characteristics for a seamless integration:

- Data structures that SiGIT supports;
- Features that support the cadaster process, involving the preparatory process and the subsequent processes;
- SiGIT limitations;
- How this system relates to other systems upstream and downstream, in particular, , Municipalities, Notaries and Notary Registry Offices, the Treasury (rates);
- What is the expectancy of development of this and other systems due to the entry of this new solution?

This systemic clarification is essential so DINAT can reduce the risk of tangling the current processes related to land management. We highlight at least two perspectives:

- Data architecture: it will help, in the understanding of the conceptual data model, the MITADER and DINAT , as an entity mandated to manage the cadaster, to be determined in the use of SiGIT, record and disseminate information about the relationship between the state, the people and the territory;
- Evolution/extension of the initial model: understand the scenarios for the evolution of this model in the perspective to continuous improvement of the processes involved.

In terms of the system overview to support decision making, DINAT has to consider:

- How to adopt LADM in the SiGIT, for the Mozambican reality; the need to explain system engineering decisions that were taken in the implementation, in order to create the foundations for decision making by DINAT, who manages this platform;
- Forecast, together with other entities involved in the cadaster process what is the impact of SiGIT introduction in other existing systems, whether manual or digital. The analysis of this impact might launch parallel initiatives to other solutions, outside the scope of this project;
- What modules must be considered to build in SiGIT, to ensure the update of information; that is, how the cadaster will recognize that a certain land portion/infrastructure is in process of changing its characteristics, or the rights or restrictions.

Still in terms of the conceptual model, but more detailed, DINAT should absorb how the SiGIT implements the various object:

- Title Holders: it should be clarified, in the methodology manual, how the SiGIT will process individual or collective persons, national or foreign. And what decisions should be taken with regard to the minimum information required to identify the subject, in particular the ID (Identity Card) and NUIT (Tax Identification Number), documents currently used in any land transaction via public deed, easily obtained at any licensed public balcony. This shows that the integration of the civil registry, with the wedding rights and the facto union is very important so the cadaster becomes consistent, timely and fair under the current code. It also demonstrates that integration and interoperability with the Ministry of Finance (NUIT) is important because any collection must be connected to the tax number, which in turn connects to important tax databases for the collection of necessary fees for the sustainable development of country;
- At the spatial unit level, DINAT must know how it will treat and classify spatial units (plots of land, wasteland, buildings in horizontal property, a fraction of a building, several concessions, etc.) and how these units will relate to each other in SiGIT;
- Regarding the rights, responsibilities and possible restrictions, three important aspects deserve further analysis and interaction:
  - i. registration of the relationship between the title holders and plots, ie the rights and restrictions and in which states predicted for each registered right;
  - ii. recording of restrictions/rights such as a mortgage or lien;
  - iii. the way to deal with ongoing transactions; that is, how are the rights controlled after starting the modification of the land plots/building's and/or their rights in relation to other entities (Municipalities, SPGC's, Notary Records, etc...)
- It should be analyzed carefully with DINAT, all standards (for example the vocabulary control). As an example, the types of plots and the use must be controlled by a single entity;
- With particular regard to the process of surveying, there is a need to analyze in detail how spatial elements and their representations are treated. At this time only the plots have spatial representation, and the infrastructures are without specific location within the land parcel/plot. In the case where a representation is different than the parcel of land, it is necessary to clarify the relationship between spatial objects through geographic information system, a relational database or both.

In data and workflow perspectives, it is necessary to consider the following facts:

- LADM gives to SiGIT a strong foundation for the data model, but does not provide any guidance on the processes;

- The SiGIT presents a data stream that is heavily reliant for the first time, on the collection model, and not the contributions provided by other systems (public notary and land registry office);
- The data and work flow are also largely based on the land law and its regulations;

It is therefore important to clarify:

- In case of any evidence of rights, which are the principles used to record and link the evidence and the mechanisms to ensure these principles in SiGIT? For example, in the case of evidence of a public deed and land registry based on indexes of the notary and the contents of the land register. To launch new evidence, it must be clear how it is classified (source, user, date of the event, date of collection of evidence) and managed;
- Substantial differences of legal and IT tools (ie what is to be decided by the user of the system); It will be necessary to carry out construction of a matrix showing which moments of the workflow are laid down in legal regulation and which are not; likewise, what steps and functional constraints exist in SiGIT but are not provided in the Regulation?
- The impact on the process, if there the need to change the system or regulation, during or after registration operations; It should be understood and defined what extensions to the data model and flow have been introduced? Is the change specifically to incorporate information from the regulation, and is it essential to the cadaster process?
- The notification mechanisms in other systems, particularly in the land registry. When a given change to a plot that is in registration process occurs, how does this signal changes to descriptions or related inscriptions as plots?
- Last but not least, after completion of a registration operation in a particular area, how are the decisions to the Land Registry and the data registered in the Land System?

At a more detailed level of the physical data model, clarification and sharing knowledge of SiGIT involves the analysis of the technical specifications and their implementation. In considering what should be included in the methodology manual; it is necessary to identify any constraints in field work (short term) or sustainability (in the medium/long term). Proposals for improvements will result in close cooperation between DINAT, INTIC, and IT companies. An example of collaboration that will exist on a daily basis to improve the solution:

- Co-titling is expressed in SiGIT but is placed in % rather than numerator/denominator. A fraction gives us the exact participation while the "percentage" may not (a building divided by three brothers, gives a 1/3 to each and it is not possible to express with a percentage, because 33.3% is only an approximation);
- The time dimension of the evidence is extremely important for the interpretation of the facts that lead to the clarification of rights. We would suggest giving evidence to provide dates of all interfaces where the registration of facts are presented in different institutions (eg civil, notary, land, etc.);

- The physical “confrontations” (parcels, neighbors) of the parcels/plots should be "automatically suggested by the system” indexed as an approach between plots (unique number of installments) and not by holders names as in some systems that use registration information.

With regard to the boundaries of the system and its interconnection with others, and in the perspective that registration progressively becomes the reference repository for all consumers and producers of information related to the territory, it should be clarified with DINAT which services (computing, eg web services) are necessary and available for consumption and which services should be consumed by other systems (notary, building, civil).

Before the fieldwork, for example in the project “Terra Segura”, tests should be made to the methodology and the software from the DINAT offices. The tests should be based on the user's manual. Because there might be the need to change the data, (writing, editing and deletion), access to the platform must be in a test environment mode. For data consistency tests, particularly with the evidence in other systems, it should be possible to access the cadastral system (if only access in reading mode), notary systems, land registry and the main identification system. These tests also include the import of data, from collection equipment (GNSS and or otherwise) and for SiGIT, by conducting field tests.

Based on preliminary analysis and contact with the involved entities, we recommend that these clarifications exemplified above, and many more to come with proposed design processes of the cadastral methodology manual, be done with active participation of DINAT. Accordingly, they can appropriate the conceptual model of SiGIT which will allow them to use the system in comfort, in accordance with the operations manual, and to develop and foresee improvements and possible corrections (and the impact) to be introduced in future releases of this important system, delivering different systems holding cadaster information.

## **TAX COLLECTION**

While in the last 7 years the investment and interest in land administration has increased, the cost to maintain and improve the system to move from a paper based to a digital one, has also been growing. Moving to a digital realm which makes it easier to manage titling from a few thousands to hundreds of thousands (and millions under a new land strategy “Terra Segura”), requires a consistent time investment throughout the years, for at least the next two decades.

In the last seven years the investment in land administration in order to secure land tenure and a design of SiGIT started with funding from the Millennium Challenge Corporation 42M USD (2009-2013), initially in only 4 provinces (out of 10) and 12 municipalities (out of 53) and later the roll-out of SiGIT to the remaining 6 provincial land services. More recently, assistance from the Dutch and Swedish governments of 14M USD for 5 years (2014-2017), in a GESTERRA program to support to DINAT (National Directorate of Lands) to

consolidate and build capacity in land governance has demonstrated some movement to maintain and improve the capacity of the sector. The registration of land falls under the responsibility of the Land Sector in MITADER while the registration of any developed property and infrastructure falls under the responsibility of the Ministry of Justice (called *Registo Predial*).

Also in these last 7 years, and because massive land regularizations could only be entertained if we moved from an analog system to a digital one, the land sector is moving forward in updating all procedures for land regularization. From a completely manual and paper based system (without a trusted land database), the sector today has one Land Information Management System that was designed to follow the legal requirements both for systematic regularizations as well as on a request basis. The software is being upgraded by phases, and a module for Land Tax calculation is currently in the design stage.

However the whole sector is still “inside looking” where the main client is still the sector itself and not the title holder or the potential title holder, with most revenue being covered by external money and very little being generated by the land administration itself. If systematic registration is carried out nation-wide, perhaps it could become important to begin looking at forms of a more sustainable land administration system. Funding for the support and improvements of land administration services can and must be paid by the clients of this system through land taxation. Tax on land has been difficult for various reasons:

- The valuation of the land tax itself presents a challenge. DINAT and its 10 SPGCs, which have to advise from time to time on the appropriate levels, and administer these payments on a regular basis, until recently, did not have the right tools to provide for a tax calculation as prescribed in the law. In valuation terms, this indicates that some sort of value assessment is required, and that this should reflect all land characteristics (location, size, purpose and benefit). The geospatial database where SiGIT is based allows for more automated land valuations;
- Another challenge to land valuation is the law itself. In the absence of a sales market for land (at least officially) its value has to be based on other standards if we want to have a fair taxation. Increasingly, throughout the world, whether payments in relation to land are assessed for rental or for taxation purposes, market value based approaches (sometimes referred to as *Ad Valorem* models in the context of taxation) are being adopted based on the value of the land. These are considered to be most equitable as they are based upon the principle that payments should be related to the market value of the property, and hence provide a practical link with affordability;
- In Mozambique the tax calculation follows a flat rate model, giving a flat rate coefficient for the declared commercial use of the land rather than its intrinsic value (which should be more in tune with the soil property of the land independent of what the user makes with it, its proximity to the road or access to market, etc.). One of the issues that often arises when compiling a database of taxable properties is the verification of the

data included. For example, whatever taxation model is adopted, it is likely that one of the prime indicators will be the 'use' of the land. This may be linked to the actual use (which may be, for example, grazing or fallow land), or permitted use under the land use zoning current at the date of assessment (for example, agriculture), or for a specific use approved by the creation of the DUAT (for example, an agro-tourism lodge). Once tax levels are sufficiently high to be of significance to the taxpayer, experience from many countries confirms that without strict checks, taxpayers tend to declare the land use as the lowest category of tax liability that they feel they can get away with, and Mozambique is no exception as we can observe later. Therefore, in addition to checks on the amount of investment carried out, the actual use should be monitored to ensure that it is consistent with the use for which the development plan has been approved (or submitted in the case of provisional DUATs).

- Land value tax (LVT) or Land Use Cost, however we want to call it, is a fixed cost that must be paid whether or not land is under use (or productive). When properly calculated, it does not penalize production but creates an incentive to the land holder to make land into a profitable use. LVT is payable regardless of how well or poorly land is actually used. Because the supply of land is essentially fixed, land rents depend on what tenants are prepared to pay, rather than on landlord expenses. In this regard, when the level of land taxation is significant it will tend to encourage intensification of land use and discourage speculation. In Mozambique land speculation is a huge but informal business for those well connected, since land tax is so low; and in main urban areas, land can only be purchased from previous title holders and not from the land department (at district or municipal level), therefore to not account for land transactions in a formal way is the same to forego transaction charges and a land cadastre that does not reflect reality of the country. Consequently, establishing the precise level of tax charges without penalising small-scale farmers or stifling genuine commercial enterprises will be a challenge.
- Tax Collection rates in Mozambique are very difficult to estimate due to the quality of existing data. Today the land cadastre is partly digital and part analogue, making data integrity a big challenge. At the same time, those who do pay their annual land tax may not pay on a yearly basis, which complicates yearly statistics. For example, in some provinces they report more than 100% payment rates. This can occur when a DUAT holder pays dues every 2 or more years, since the effort to pay is often much higher than the amount of the LVT. Furthermore, the number of existing and functioning DUATS is much lower than what the historical data may indicate. So planned and real collection of payments may not relate to each other. DINAT official figures identify an overall range of collection rate of between 60-85% over the years 2005-2010. A recent analysis carried out by our team has identified that the provincial statistics on tax collection can be misleading since they mostly report against normal averages (not against the total number of DUAT holders in the registry). In a different dataset from the land sector we observed that some trends must be recognised: a) the total number of land tax payers in the country (identified in the provincial roster with potential to pay land taxes) are only 52,642 titles, using an area of 14.4 Million hectares of land. b)

23% of the holders report that their land (28% of the occupied land or 4.1 Million ha) is for agriculture purpose (at a tax rate of 37.5 MZM/ha) and the remaining 77% of the title holders report the use of land (10.3 million ha or 72% of the occupied) as other (livestock, wildlife, permanent crops at a flat rate of 5 MZM/ha). This clearly indicates an urgent need to revise the classification of the taxation system based on the declared use of land. It also indicates the need to revise the tax rate. c) we also assessed the potential contribution that the sector could collect in terms of LVT. At present rates and existing registered title holders, the system could collect up to 4.1 MUS\$ (1USD=50MZM), which is very far from the level of basic costs needed to keep the system going without external funding. D) Even with the clear increase in revenue from the land tax (if we consider 2010 as the base year, the revenue has increased quite substantially) from 1.67 (2011), 2.27 (2012), 2.29 (2013) and 2.82 (2014) the revenue is quite shy from its potential with maximum collection being reported in 2014, equal to 0.771 Million USD (20% of the potential).

- Although there is wide variation between provinces, the generally poor collection rates of particular concern are mainly due to the following issues: lack of institutional capacity or inefficiency; the low level in monetary terms of the outstanding charges (due to the low value tax), which provides little incentive for authorities to spend their limited resources in pursuing holders with undue payments for years. It should be noted too that many outstanding charges are due to non-payment by the “powerful and above the law”. As a result, collection rates remain well below their potential.
- A further key concern that can impact low collection rates relates to the allocation or apportionment of the DUAT revenue, which goes to the heart of the purpose and nature of the charge for the DUAT tax. The partition of the Tax according to the regulation among the state institutions is the following: 40% of the total DUAT revenue goes to State budget; 24% goes to DINAT and 24% to SPGC; and 12% goes to the District where tax is collected. That means that 60% of the money is put back into the system that contributed to its collection. The model of apportionment can be discussed in various angles: some countries allocate 100% of the revenue to the district where the tax is collected, others like Mozambique collect all through a central fund via the ministry of finance, which makes the redistribution later on. In most cases the intention of the revenue is essentially to keep the tax revenue coming efficiently to the state coffers and use it to operate and improve the tax collection system. However in Mozambique once the tax revenue is in the state coffers it can take a long time before that money is made available to each party. At times the little funding that is made available at provincial level, can easily be allocated to other priority sectors and other local government activities even outside the land sector. This issue has to be considered when looking for a land tax collection option. This fractionated way of apportionment and the time it takes to be available to be re-invested in the system might decrease the incentive of each SPGC to carry out campaigns for land taxation (as they require funds and a well elaborated communication campaign). Other views on apportionment may indicate that for Mozambique, it is appropriate that tax generated at the local level must

also be spent at the local level, usually for the provision of local services. This is based on the principle that the beneficiaries of services should pay for those services, and that the service provision by local government can be tailored to local preferences. This relationship provides a greater degree of local accountability, creates a moral incentive for taxpayers to pay and reduces local dependency on central government funding. It is recognised as providing a degree of fiscal autonomy that is one of the pillars of decentralisation.

- The results of the Agricultural Census of 1999-2000 show that there were only 60 holdings with more than 100 ha of cultivated land (out of 3.06 million holdings in total). Indeed, there were only 4,483 holdings with between 10 and 100 ha of cultivated land; 88% of these holdings had between 10 and 20 ha of cultivated land with an average size of 12.1 ha. The 2010/11 agriculture and livestock census indicate that the number of holdings with less than 2 hectare were approximately 2.5 million units. Explorations with 2 and less than 5 Ha were 900,000. Commercial holdings with more than 5 and less than 50 added close to 900,000. With less than 100 explorations above that size.
- In practical terms there seems to be little point to applying a complex formula to assess the LVT. On the one hand it is doubtful that the commercial farms could alone support the investments and maintenance costs of SiGIT. In terms of total land area cultivated, there are 15 holdings with more than 1,000 ha of cultivated land (with an average of 3,045 ha per holding). If we consider that more than 80% of DUAT holders are exempted by the present legislation from any payment today, there is very little economy of scale to bother about non-payments of small but numerous land title holders. It may be best to only focus on bigger land titles holders, (which in itself might create in the future a perverse system of land allocation, where priority would be given to those requesting bigger chunks of land). Furthermore, land tax collection is independent of income tax collection making it more expensive to collect money due for land every year. Since in most cases the amount to be paid every year is very small, the effort and bureaucracy to get it done every year may not justify the end result. Finally, since there is at present no mechanism to penalise land holders for non-payment on a yearly basis (unlike how it is done by the Tax authority to recuperate income tax), the incentive to pay land tax is very low;
- It is clear from the analysis above that the present LVT has to broaden its base of revenue potential including all title holders (commercial and non-commercial use of land must pay). The rate must reflect the soil property where the title is located (and not the declared use of the land), and tax rebates (incentives) must be considered for all projects that demonstrate ability to increase the value of the land/soil while tax penalties should be given to all those uses that degenerate the value of the land/soil. If the tax rate is raised independently of land use to a flat rate of 2USD/ha or a 100MZM/ha, the total revenue potential will be close to 29 M USD/year, counting only those that declare a commercial use of the land. If the remaining



title holders are divided into two broad categories: those with 2 or less hectares of land (2.5 Million units) mainly pure subsistence farmers therefore paying 25% of the going rate and those with more than 2 and less than 5 ha (0.9M units) mixed farmers paying 50% of the going rate, we could add this sum to the total potential tax revenue. Taxing for land occupation must be a principle to bring revenue not only to the land sector itself but to the GOM tax coffers.

- The lessons from Tributary Authority in enlarging the payment basis must be studied in order to adopt it into the land sector. We may have approximately 5 million families in the country and on average each family has a plot of land (more than 80% of the population is rural based, living out of subsistence agriculture activities and shifting agriculture, with many families holding more than one plot). So, we can expect to have to issue more than 4 million and up perhaps to 10 million land titles and growing every year. To keep a cadastre system that will take on average let's say a million titles every year is a huge challenge in terms of human capacity, and financial resources. To keep the system going without external support is close to impossible unless all land titles can contribute to the land tax revenue. So the GOM must consider a broader base for their land tax collection.
- In Mozambique, the Land Law Regulations provide the legal framework for setting the annual fees and for their periodic updating by the Minister of Planning and Finance and the Minister of Agriculture. While in theory this could be undertaken annually by the issuance of a joint Ministerial Diploma, to date this has only taken place once, in December 2009. The sporadic tax upgrading may indicate how uncomfortable the legislators feel to approve any increase on land tax, preferring small but necessary incremental upgrades regularly to big rate increases very seldom. The need for regular updates should be considered every time both the land services increase and the title holders improve their land rentability.

We think that regular (yearly) automatic tax adjustments should not be a norm, however the process that leads to its revision (tax rate increase) and approval must be relaxed. We are of the opinion that a new tax rate increase should be such that covers the cost of providing land services as a start basis. This base cost (lowest tax rate) has to be applied indiscriminately to all title holders. We would also propose aggregated land tax rates according to soil type and zonation, and propose that the use of land is considered in order to aggregate the tax if the exploration results in decreased land value (by promoting land degradation) or a tax incentive if the use increases the land value (by promoting conservation practices, improved land cover and soil fertility, and biodiversity values).

While many models exist for land tax estimates one that is simple to use and adopt is to estimate the minimum land taxes that can keep the system going (covering the totality of the cost). The tax value must be sufficient to pay for the operation, maintenance and renovation of the cadastre and all associated activities of the land administration. A top up could then be considered and charged against those holders that are located in better soils and most desirable places making therefore an incentive to increase land productivity. For example a mining concession that is located in a coastal zone proper for tourism development must pay a land tax according to the potential of the soil and plot location instead of the use of that land. In fact if the country was properly zoned than all land tax could be easily derived. Like if a petition for livestock activities is made under a soil fertile for agriculture crop production and that petition is granted the tax coefficient must be that derived from the zonation and not the use declared by the title holder. On the other side penalties must be calculated and imposed to the title holder for activities that degrade the quality of the land, and in the same token a tax rebate must be considered in projects that regenerate the quality of the soil and or contribute to climate change mitigation and carbon sequestration.

It is common in many places to have two different payments on the land use: the land tax and the land rent. We have been talking mostly about land tax which is an annual property tax paid by the occupant (or owner) to the government to fund the provision of public services. Rent, on the other hand, is an additional payment to compensate the owner for surrendering his right of use. Presently in Mozambique renting land is a traditional method of revenue for many rural families, but in the law this case is not well addressed. And unlike in Ethiopia which uses both forms of payments, Mozambique commonly applies only the land tax.

If we scrutinize closely the values in the decree approving the Tax Index (see tables in Annex 1) it's obvious that the amounts of the tax are too low when compared to the potential revenue that each use can deliver. On the other hand is not clear if the GOM wanted to impose only a pure land tax, a land tax for renting/leasing the land or both. It is clear that the tourism, holiday homes and commercial property are aggregated by 100 times compared to the more extensive use of the land. The tax does not impose a coefficient to avoid land division, and on the other side aggregates with a land adjustment index the land tax for bigger plots of land usage. We understand that land productivity for each use type must be estimated. Presently there is no empirical study on these issues. As a rule of thumb we calculated with very conservative values for expected benefits out of a hectare of land (see Annex 1, Table 3), – proposed new uses and taxation.

We have proposed a few more categories according to land use common activities in the last 5 years (Table 3 in Annex 1). A few categories are in a way controversial and open to rebuttal from affected sectors and title holders. For all exploration activities that impoverish the land base, (like mining, aquaculture and forest concessions) the tax must be aggregated even if the land use DUAT is temporary.

Another complexity is the need for a good sea cadaster on explorations inside the territorial waters. Together with mining concessions this may call for the GOM to look into a unified cadaster system and a more adequate

apportion of the tax revenue. Today the mining sector has its own cadaster and no DUATs are issued, which is a pity, since conflicting uses of the same land are generally the result.

We also know that approximately 18 to 20% of the country is legally under some kind of conservation status. These conservation areas are managed by the National Administration of Conservation Areas (ANAC). In many cases, although the conservation is only on paper with very weak infrastructure on the ground, there is a need that a land tax charge is contemplated in order to support better land administration facilities in the conservation areas. Since these areas are rich in natural resources, it is common, but not desired that people living inside dedicate more to natural resources exploitative activities and therefore should be taxed with an aggregated tax, high enough to discourage such activities inside conservation areas.

## **REGULATION OF SYSTEMATIC REGISTRATION**

In the last 7 years there has been a change of attitude in Mozambique with regard to the first registration of the DUAT. Under some projects, the record has been systematic and with a proactive approach from the State. In these cases the administration recognizes that there are advantages to creating a reliable and authoritative cadaster. This means having field teams which register the DUAT, "door by door". Examples of this are two main projects: Project to Secure Access to Land (funded by MCA) which awarded 144,000 DUATs in 10 municipalities and over 9000 DUATs in 7 different districts; PROMAPUTO project (funded by the World Bank) still in progress, that has already registered 15000 parcels, which 95% have the potential to get a DUAT.

The acquisition of a DUAT is achievable, according to article 12 from the land law, in 3 ways:

- Occupation by individuals and local communities of people, according to the customary practices and norms that do not contradict the Constitution;
- Occupation by national individuals who, in good faith, have been using the land for at least ten years;
- Request for authorization, submitted by an individual or collective persons as defined by law.

The first two forms of acquisition, although legal, add nothing to the registration of national lands, from the point of view of land management. People (or the community) can occupy and live in certain areas, but this remains as local knowledge. Information about occupation is often limited to communities or villages involved, based on oral witness evidence. If at district or provincial level someone wants information about occupied and available land, the level of effort is huge. This effort requires those interested in the information to displace to the places and interview the various stakeholders in the land occupation process, often an oral system with no written documentation.

Of course this type of land management is time consuming, impractical and gets out of date quickly because the effort involved is enormous. Also the volume of information that is collected is punctual on the area of interest, and not in-depth, involving, for example, an administrative area.

In the third form of acquisition, the process involves collecting textual and spatial information about the applicant and the plot. This adds potential value to the land registry, but we emphasize some constraints in their implementation:

- The application process involves the preparation of a sketch map, which is an approximate location of the desired area. This sketch map is often done based on mapping, small scale and old, or verbal description references. The level of accuracy according to ground reality is variable. This sketch map often fails to be updated, although the application process progresses. The reasons are related to the lack of resources, material and human resources to carry out demarcations (measurement process of the vertices of each plot with GNSS). By accumulating in the cadaster many sketches (in place of demarcation) the ground reality and spatial representation in the cadaster will be more and more detached, and cadastral representation is gradually lost;
- The use of GNSS with different spatial accuracies causes lack of harmonization in data collection and their direct comparison in the same cadaster. Often different GNSS of absolute positioning are used (without post-processing), having no reliable spatial accuracy. In cases of overlapping plots in the system, the metadata doesn't help in its resolution;
- In large areas, the boundaries are not always physically walked, as they should be. The design of areas is based on descriptions and local references. This approach undermines the representation of each plot and sometimes is far from reality;

Thus the existing analogic cadaster is fragile and not authoritative, where doubts of the spatial representations are bigger than certainties. A cadaster that is far from the reality ceases to be, in the medium term, a useful tool in land management.

Additionally, the fact is that the cadaster is selective, done only in areas where there is a request. What happens in the remaining territory is unknown because there is no land registry. Generally speaking, the cadastral map (and their information) is very incomplete, limiting the management and planning of land nationwide. Considering the forms of acquisition and the approach that has been adopted, the cadaster of land in Mozambique will never cover most of the territory.

Mozambique needs a good land management system, to create production and create jobs. Thus, from our point of view, a complete registry based on the following 7 main factors, is the required solution:

1. Systematic registration of land: we propose a systematic and comprehensive record of the entire national territory. To be able to do it in a short time and at affordable costs, we are of the opinion that a fit-for-purpose approach will meet the needs. A first record should prioritize the speed, so that the coverage of the territory creates as soon as possible, an effective land management tool. In terms of costs, the registration

should not spend too much, otherwise it will never have financial return. The register should use low-cost solutions, even if the spatial accuracy is weaker. According to the current phase of development in Mozambique, it is more important to make a first registration, than to have too much concern on sub-meter accuracy, as stated by law;

2. The solidification of a cadaster system where the information can be centralized and easily updated. This system has to be set up as a single ground reference registry in order to avoid parallel registration systems and lack of consistency. Only by doing this, will we guarantee transparency and objectivity in land management? About two years ago Mozambique adopted the land system SiGIT to collect and manage the cadastral information. However, the requirements for installing and using this system have proven to be too demanding for most locations. Thus, we find that the local adoption of simpler systems may be the key for all to adhere more easily to the introduction of cadastral information. These simpler systems should, however, be configured in the LADM model so that when necessary, data can easily be integrated into the central system;
3. The training of new staff in Mozambique is at present a strategic factor, since the country is waking up to the need of a good record and good land management. It is crucial to solidify the training given in the framework of the land as it has proved to be light and poorly suited. The integration of new staff today means creating strong human capacity in the medium term, both in creation and in updating the land cadaster. The opportunities for including new people are few, which means that the land sector delays in having good human resources;
4. Further still, in connection with the creation of human capacity, the National Directorate of Land has to create sufficient capacity to give guidelines on the registration process, coordinating work and managing the collected data. Currently DINAT doesn't have enough people to make the ambitious "Terra Segura" project a success; with the registration (and title assignment) of 5 million land plots in 5 years;
5. We think it is crucial to interoperate the data with several other systems as mentioned already in this paper;
6. The fee collection component is not working properly, and it has not been able to charge all holders of land rights. Similarly, scarce forms of punishment for those who do not pay the fees exist. Only an effective collection rate could create a sustainable registration system, supporting, for example, the gradual updating and improving of spatial accuracy of the cadaster;
7. Based on the land law, the non-use of required areas, in whole or in part, has sanctions that can be the cancelation of the DUAT or resizing the land plot, respectively. The lack of resources for effective

supervision means that much of the land that should be used for production, investment and job creation, is in fact abandoned and without any use.

## **CONCLUSIONS**

Although systematic registration begins to be common in several parts of the territory, there is a need to legislate/regulate this type of record. The current regulations do not prevent systematic records but also do not regulate it, resulting in different approaches in different locations. Along with the registration process, are all the subjects highlighted in this paper that we analyze and see the need for transparent and serious reforms. The disparities mentioned here, undermine a unified cadaster, where there can be a hub for land management, even if located in different and autonomous administrative divisions. We identify the current moment in Mozambique as crucial to rebuild the land sector. The last review of land law dates from 1997 (19 years ago) and it has a long way to go to meet the real land occupancy and management needs.

Land taxation must consider two aspects: those costs related to providing services to the title holder, and costs related to the use (or rent/lease) of that land. While we conclude the need to revise the present land tax, so that it not be based solely on the use of the land, but and mostly on the quality of the soils the activity is being proposed for, we also discuss the urgent need to revise the tax itself. All title holders must pay a land tax that at least covers the services provided by the land system, however, those that use it on a commercial basis and or have more than 1 ha must pay additional charges relating to the approved indices for adjustment of annual land tax. The land tax revenue must initially be used to strengthen the land tax administration, the land sector and ultimately GOM development initiatives.

## **REFERENCES**

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3. [Various personal communications;](#)

## ANNEX 1 – Land Tax Tables

**Table 1** – Tax indexes (Introduced under Ministerial Diploma No. \_\_\_/2009 signed by the Minister of Agriculture and Minister of Finance on 21 December, 2009)

	<b>Category</b>	<b>MT/ha</b>	<b>Approx equivalent US\$ / ha</b>
1	Cattle grazing	5	0.16
2	Wildlife breeding	5	0.16
3	Permanent crops	5	0.16
4	Agriculture	37.50	1.25
5	Tourism	500	16.00
6	Holiday Homes	500	16.00
7	Commercial	500	16.00

**Table 2** - Indices for Adjustment of annual tax relative to location, size and nature of holder:

	<b>Category</b>	<b>Indices</b>
1	Maputo Province	2.0
2	Land in partial protection zones	1.5
3	Priority development zones	0.5
4	All other zones	1.0
5	Up to 100 ha	1.0
6	From 101 to 1,000 ha	1.5
7	Over 1,000 ha	2.0
8	Associations	0.5
9	National natural persons	0.8

**Table 3** – Proposed New Uses and Taxation

	Category	estimated land benefits	Actual land tax (yearly)	Approx equivalent	proportion tax/benefit		
		per/ha/year	MT/ha	US\$ / ha	real	estimate	estimate USD
1	Cattle grazing	20,000.00	5.00	0.16	0.00025	1,100.00	35.20
2	Hunting Concessions Wildlife breeding	30,000.00	5.00	0.16	0.00017	1,650.00	52.80
3	Permanent crops	40,000.00	5.00	0.16	0.00013	2,200.00	70.40
4	Commercial Crops	80,000.00	37.50	1.25	0.00047	4,400.00	140.80
5	Tourism	300,000.00	500.00	16	0.00167	16,500.00	528.00
6	Holiday Homes	90,000.00	500.00	16	0.00556	4,950.00	158.40
7	Informal Markets (Commercial 1)	200,000.00	500.00	16	0.00250	11,000.00	352.00
8	Forestry Plantations	20,000.00	5.00	0.16	0.00025	1,100.00	35.20
	Forestry Concessions	300,000.00	300.00	9.6	0.00100	16,500.00	528.00
9	subsistence farming	10,000.00	5.00	0.16	0.00050	550.00	17.60
10	Rural Housing	88,888.89	200.00	6.4	0.00225	4,888.89	156.44
11	Mining on land	800,000.00	1,000.00	32	0.00125	44,000.00	1,408.00
12	Mining on the sea	2,000,000.00	2,000.00	64	0.00100	110,000.00	3,520.00