

Creating land registration systems for developing countries

by Louis Charlebois



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A third-world country cannot become a first-world nation without the availability of security for mortgages or an accurate record of ownership for land tax. The author assesses UN guidelines on how countries in transition should set up land registration systems and considers how the systems operating in various countries can be adapted for the purpose.

As we approach the year 2000 we have the opportunity to assist the economic development and improve the accommodation available in many countries worldwide. An efficient land registration system creates wealth by providing the circumstances permitting the injection throughout the economy of thousands of small loans secured by mortgage. The legal cadastre (or parcel record) doubles as a fiscal cadastre, enabling an efficient land tax. Security of title enables the investor to exploit an investment because he/she can continue to access his/her property through the term of his investment and beyond. Without that assurance, such a person cannot make an investment premised on the secure improvement of real property. If we get this right, it is difficult to imagine any other non-logistical administrative improvement that can so profoundly and permanently improve the real standard of living of impoverished nations.

COMPARING LAND TITLE REGISTRATION SYSTEMS

As an ex-registrar general in one jurisdiction in Australia and the co-author of a text on conveyancing in another, I note the lack of understanding here in the UK of the relative position of the land title registration systems vis-à-vis comparable systems. The title registration systems in England and Wales and in Scotland are Torrens systems. Their values and principles of administration are indistinguishable from those of acknowledged Torrens systems in Australia, Canada and the US. Further, the European Grundbuch system is virtually indistinguishable in fundamental principles from the Torrens system with one exception: the accuracy of the cadastre.

Sir Robert Torrens, who brought the system named after him to South Australia in 1858, was a British immigrant familiar with the Hamburg Grundbuch. But the survey precision available in Hamburg was not available in South Australia. Title registration

(as opposed to deed registry) was voluntary. The parcel record was not the comprehensive cadastre of the Grundbuch system, because comprehensive survey of parcel boundaries was not available. Sir Robert avoided the bureaucratic error apparent in the Grundbuch system of title registration occurring in one office, with parcel registration in another. That one-stop principle is used in the Grundbuch system applied to the Dutch Kadaster, with impressive results. It also applies in London and Edinburgh.

Arguing in favour of a concept of open boundaries with those involved in the administration of a European cadastre does not win converts. Some boundary precision is better than no boundary precision. The compulsory, precise boundary record of the European cadastres gives the best parcel record. The Torrens systems of Australia and Canada are at varying stages of 'sweeping in', which compulsorily fills in the gaps in the parcel record, approaching the comprehensive state of the European cadastres.

A lack of precision in boundaries means that the system in England and Wales is behind the Grundbuch and the acknowledged Torrens systems. There is parcel boundary information in the document file behind each registered title, but there is no central file, either manual or on computer, maintaining accuracy and currency. Because of the implied difficulty of searching, the Ordinance Survey record is often used, a system entirely without legal boundary values.

The answer is to create (as a computer record) a comprehensive parcel record, under the direction of the Chief Registrar, which is capable of accepting and retaining survey accuracy in boundaries, using a software that allows adjustment to record survey accuracy when it becomes available. Any requirement to link to the Ordinance Survey can be met by an overlay of the Registrar's parcel record over that of the Ordinance Survey.

It is, perhaps, a good thing that some have such faith in their legal system that they proselytise it, or at least, what they think it is. Perhaps this is the reason for some of the error that has been offered abroad in an attempt to assist countries in transition to establish viable land registration systems. It is a good cause. A third-world country can hardly become a first-world country without the availability of security for mortgages or an accurate record of ownership for land tax. Despite eight years of trying, and a lot of money spent, none of the Eastern bloc countries has an efficient land registration system. A major reason for this is the conflicting and inaccurate advice they have been given.

At FIG 98 (*Fédération Internationale des Géomètres*) I delivered a paper which aimed to contradict the errors in a popular UN publication, *Draft Land Administration Guidelines with Special Reference to Countries in Transition*, Messrs Hrebeck F, Gojceta B, Remety-Fulopp G, Brouwer J, Onsrud H, Pamfil V, Widmark J and Dale P, approved by the 56th session of the Committee on Human Settlements, Geneva, September 1995 (and published by the Economic Commission for Europe, 1996, as ECE/HBP/96). Some of the points I made are reproduced below; unfortunately, the publication remains unchanged.

LAND ADMINISTRATION: FOUR CRITICAL POINTS

Before I refer to the UN publication in more detail, the following points should be made.

1. A model title cadastral system applicable to any jurisdiction is possible.

The system should consist of two main databases: title text, giving the particulars of title, and a graphic record of the legal cadastre, showing the extent of each parcel. The current status of both databases as to any parcel must be justifiable from a survey layer of information for the parcel polygon, giving enough information to justify the polygon and a transaction history providing a transaction record to justify any change in title text.

The system must commence with the creation of the cadastral database because it is more important than the text database – it changes less frequently and should provide the unique spatial identifier for the title cadastral system.

2. The cadastre should reside as an integral part of a larger national geographical information system.

The cadastral parcel will be the smallest meaningful unit in GIS and should therefore constitute the unique identifier for the GIS as well as the title system.

Title text should carry the same identifier as the parcel and be stored and identified as the text aspect of the parcel. Therefore if the parcel is substantially modified, most commonly by subdivision, the current parcel identifier must be withdrawn and replaced by new identifiers for each new parcel. The replacement of the parcel identifier by new identifiers forces the corresponding replacement of the title text by appropriate title texts carrying the same identifier as each new parcel.

It should be possible, for example, to search seamlessly from title text to parcel, to terrain, to surface use, to geographical location. One could then analyse a mining proposal, for

example, by searching surface and mineral ownership, terrain suitability for the mining town and geographical proximity to transport infrastructure.

3. The system should not be simply offered up for computerisation, unchanged from its manual version.

The most important task in developing a computerised land registration system is changing the legal-administrative aspect of the system to facilitate the movement of data from a manual to a computer environment and to improve the efficiency and usefulness of the system once computerised. It is essential that the registrar of titles, supported by ministerial and parliamentary approval for his/her actions, should become pro-active in defining the product of the title cadastral system as well as defining legal-administrative short-cuts to completion.

As an example, the concept of the state-guaranteed title should be discarded for some of the computerised titles being established, at least during the period of transition from a manual system to a mature computerised system. This will permit the essential use of immature or provisional titles, avoiding time-consuming and expensive historical search, and survey precision in defining boundaries where survey information is not presently available for the parcel or parcels in question.

4. It is undesirable and unnecessary to proceed to the implementation of a computerised land-registration system before the architecture of the system is determined, the methodology to achieve completion is written and the product defined.

Where the registrar and his supporting authorities are unsure as to the product the system will provide, the first priority must be to assist the registrar in defining the product. Significant errors have occurred because of a failure to recognise this priority.

THE UN DRAFT GUIDELINES: SOME CRITICISMS

The text of the UN 'Draft Land Administration Guidelines with Special Reference to Countries in Transition' contains, in my view, a number of errors.

1. The text shows deed registry and title registration as equivalent technologies.

Title registration developed in the last century specifically to remedy the inadequacies of deed registry and does so successfully. The significant disadvantage, in a computerised environment, of a deed registry is that the record for each parcel consists of a varying number of unranked documents. In order to determine the particulars of title, the deeds must be evaluated by an expert. There is a cost penalty both in terms of title insurance and lawyer's fees. Remote search is difficult and costly because each deed in the chain of title must be evaluated every time. The computer cannot search to provide a clear statement of the particulars of title. In a title system, there is one ranked document – the title. The computer can immediately use that information as a key to the function of sub-systems, such as a tax cadastre. Remote search delivers the statement of the key document. Expert evaluation is not required.

2. Registration is shown as functioning without a legal cadastre.

This may be because a perception of the system used in the registries of the UK is that the registrar does not have his or her own legal cadastre and must use a physical (non-legal) geographical reference: the Ordnance Survey. My understanding is that in England and Wales, each registered parcel is outlined against an Ordnance Survey map background. These parcel plans are now being digitized. When that has proceeded further, it will be possible for the registrar to display collated plans of registered parcels.

The registrar must control his/her own legal cadastre, otherwise he/she cannot describe the extent of title. With that control, and with the use of some other legal devices referred to later in this text, the registrars in the UK can extend their registration seamlessly across the jurisdiction (sweeping in). The cadastres of the UK can never be completed without changes in values and approach. The task is not difficult, but it must be approached from the perspective of completing the cadastre.

3. The starting point is shown as passing land reform legislation.

Land reform law must be kept separate from registration law, except to require the registration system to record land reform determinations. The starting point is the creation of a computerised cadastre, or parts of it. The only connection between land reform and land registration is that land registration provides a place to record the outcome of land reform. Land registration follows its own logic, while land reform is highly politicised. If the two are linked, a politically-motivated delay in land reform can unnecessarily delay progress in registration.



4. The text requires state title insurance for title registration.

Title insurance is no more closely associated with title registration than car insurance is with car manufacture. If Ford or General Motors began offering car insurance, you might be wary. That is because the person who creates the risk should not be the person who underwrites the risk and who determines whether a claimant has been successful. I recall a conversation with a registrar who acknowledged that he does not allow historical searches on his title system. When I enquired, he stated that he guarantees the title and he does not want anyone discovering by historical search of title that he has made an error. I made the rather obvious point that his task should be to facilitate the customer's determination that he had suffered a loss, enabling him to claim compensation, rather than

obstructing him. The registrar completely agreed with my comment, but I don't think he has changed his practice.

Title insurance can be provided because there is an insurable risk, but title insurance should not be provided by the registrar, who should simply be responsible for his/her own errors. Mandatory title insurance can be established using private sector policies and would be similar to some automobile insurance solutions.

5. There is no mention of provisional or immature titles and parcel.

In a third-world environment particulars of title may be difficult to determine because, unlike Western Europe, where land records have been meticulously maintained for centuries, few reliable records may be available. One must then create a title record from the best sources available and assume that if anyone is aware of an error, it will be brought to the attention of the registrar to enable correction of the record. You do the best you can from the evidence available. The same approach can be taken to parcel boundaries where there is a low level of survey control. Such a title can carry a warning that it is provisional or immature as to title particulars, or boundary, or both. If a survey is subsequently provided, the provisional status as to boundary can be removed. After the passage of an appropriate period of time, the provisional status of the title text can be removed. During the provisional status of that title and boundary, there can be no question of considering it to be guaranteed.

Forcing a third-world jurisdiction to take on an unquantifiable insurance risk is scary – especially when it is not necessary.

6. No option is presented for private sector participation.

On the models I have seen, the task of creating a national title cadastral, and hopefully GIS, system is remarkably lucrative. As an economically inelastic, compulsory monopoly a system can generate surprising profits. It is worth noting that the Registry for Northern Ireland is writing specifications for a private finance initiative. Prior to establishing the present Teranet in Ontario, while seeking a private sector joint venture partner, the Government of Ontario advised interested parties that it had projected a net profit to the joint venture of \$1 billion in ten years. I am not aware of any public statement revising that estimate. I have seen financial models of a number of jurisdictions. The only one that did not show a profit was the Yukon, resulting from a large territory with a sparse population. The 'Draft Land Administration Guidelines with Special Reference to Countries in Transition' text represents the process of developing a computerised land registration system as a money loser.

7. Condominium is not offered as an option.

It should be. It provides significant advances in ownership, cost and management and is easy to start in a new jurisdiction. Unfortunately, it does not exist in the UK.

The first and second principles I have described above, applied to the cadastre alone, are in accordance with the principles of the 1996 Bogor Declaration.

Read together, the 'Draft Land Administration Guidelines with Special Reference to Countries in Transition' recommendations would frighten any reasonable third-world administration, unnecessarily, in my view. It should be replaced by a more appropriate statement.

IMPLEMENTATION

There are a number of issues concerning the implementation of systems.

Product definition and planning

It would not be appropriate here to list the stories of projects that have started and failed or simply stalled because the intended product of the system was not defined, nor the path to achieve it clearly drawn. However tempting it may appear, it is not appropriate for the hardware vendor, the software vendor, the systems integrator or the banker to sell a system to a jurisdiction where the registrar (and the assets that support him) has not defined the product and the way there, or has defined an inappropriate product. Nothing should happen until that is achieved. All of the technical and financial support available should be directed to that end. It is no more feasible to build a land registration system without complete planning prior to commencement than it is to build a major building without an architect's plan.

A key part of the planning is the legislative support that will give the product value by making it the original record admissible in court as evidence and will also enable the gathering of data for its implementation. This should not be left to inspiration to be anticipated between commencement and completion of the project. It is probable that, in the event of the establishment of working examples in some jurisdictions, the task of product specification and planning will become easier.

The parcel map

Before the title record can be constructed, the parcel map must be created. Although a large jurisdiction would be broken down into parts, it is important to create the parcel record for the entire jurisdiction as quickly as possible. The parcel map precedes the creation of the title record because the parcel gives the title its unique identifier. Parcel map sections should be integrated as quickly as possible because an integrated parcel map for the jurisdiction allows the registration of any title transaction or parcel subdivision wherever it occurs. This achieves a level of de facto computerisation, where any land transaction is recorded on the computer record, giving the public the impression that the task is complete. This should be capable of achievement at an early date. Because this will also be the political perspective, de facto computerisation as early as possible is an important goal for the maintenance of public and political support. It also has a second, equally valid reward: it maximises the income of the computer register as, from that point on, all fees charged for the recording of land transactions will be credited to the account of the computer register.

Public sector land must be brought into the system as soon as possible, probably through legislation. Although the level of transactions on public sector property will not generate much revenue, it is important for the purpose of extending the system to cover all land in the jurisdiction.

It is important to minimise front end costs. Consequently, in a developing jurisdiction where there is a low level of survey control, the cadastre must be created with the greatest accuracy available. If necessary, photogrammetry and GPS, or drawing a line on a computer screen between known co-ordinates, can permit parcels to be recorded, which, over time, can be corrected when survey becomes more prevalent.

Once the parcel map is sufficiently established to record all new transactions occurring in the jurisdiction, the mere recording of new transactions will not bring all parcels into the system, because some parcels with their associated titles will remain dormant. Therefore the transaction trigger must be supplemented by an area search. This means that all parcels and titles within a defined area must be brought within the system using any means of information available, including interviewing or mailing out to occupants, conveyancers and surveyors and, of course, local authorities. Unless the area search concept is implemented, it will not be possible to bring all of the land within a jurisdiction under registration. Without that, rights, either dominant or subservient, attached to the land still outside the system, will remain unknown. This implies as well that a registered parcel may be encumbered by a right which benefits an unregistered parcel without that fact being recorded – a clearly undesirable uncertainty of title. It also means that a land tax sub-system will tax only land that is registered.

Compulsory registration

As stated earlier, from an early point in the development of the system public authorities should be required to register their land, as an important step in providing complete coverage by registration.

As an administrative principle, no charge should be made by the registrar for the initial registration of a parcel where that registration is compulsory. Any study that I have seen shows that the increased transactions within the registration system which occur after first registration provide an increase in income to the system which more than covers the cost of first registration. The difficulty with charging for compulsory registration is that it is politically unsavoury. As a result, where a compulsory charge is made, it becomes difficult for the registrar to obtain the political approval he/she needs to extend compulsory registration to new areas or to cover an increased range of transactions.

It should be seen as the task of the registrar to determine which parcels will be converted and the overall rate of conversion. He/she must carry out the task within a budget and within the technical resources of the staff available. To maintain control, however, the registrar should not be restrained by premising the conversion of a parcel on the co-operation of the owner or of conveyancing professionals.

The effect of all this is that the system will expand mostly by the compulsory registration of provisional parcels as to the particulars of title, and, where survey control is poor, provisional as to parcel boundaries as well. Where a deed registry has been maintained, it will be possible to do a full search of the root of title to establish the veracity of the new registered title, but will be seen as far less cost-efficient than the creation of a provisional title following only a limited search. The rate at which this conversion occurs is almost entirely within the control of the registrar, so that he/she can continue to balance revenue against expenditure.


The traditional method of first registration involving a full search of all records resulting in the immediate creation of a mature title must continue to be available at a price and on request. Using a combination of these techniques appropriate to the requirements of the jurisdiction, a title cadastral system can be built up with relative ease and the parcel record will, whatever its starting point, increase in precision as more precise data is made available.

When one compares the difficulty of establishing the cadastral title record with other data sets that will be included in a GIS, it becomes apparent that other data can require much more work to compile. Terrain, or surface use, or mineralization, for example. But because of public demand for data concerning ownership and extent of title, that system should sit centrally in an overall GIS. Because of public need and economic inflexibility, the title cadastral system is in a position to carry the cost of lower-fee generating GIS data sets, effectively subsidising the cost of providing less lucrative data sets which are nevertheless essential to a useful GIS. As mentioned earlier, the best entity to provide the unique identifier for a GIS is that which will not ordinarily be further reduced in size. A point is too small simply because it does not constitute a significantly meaningful entity. A cadastral parcel is certainly important and does not reduce. If it is subdivided it takes on an equivalent identity with a new identifier. Therefore the cadastral title system in a larger GIS is trebly meaningful: it can pay for the GIS, it is an important component in its own right and it provides the unique identifier.

CONCLUSION

A common approach to land registration would be a powerful tool worldwide in improving land administration and the economy itself throughout the developing world. If a common approach is possible and is not used, much time and expenditure will be unproductive. I recommend a common solution.

Constructing a legal cadastre without a compatible title registration system is not efficient. From the outset, they should be developed together and should be administered with as little separation as possible. The cadastral parcel and the title should be regarded as two aspects of the same thing, not as separate entities, and that is how they should be recorded on the computer.

There are important legal short cuts that assist in the building of the cadastre and they are as important in that respect as any survey tool. Title and cadastre are essential features to a national geographical information system. 

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