Land Administration Theory: Thinking in Terms of Migration of Systems

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Key words: land registry, cadastre, land administration, migration path, requirements.

ABSTRACT

The introduction of land administration systems requires substantial investments. Decisions on the institutional context (legal framework, public administration) influence the costs of adjudication and boundary survey substantially. As in many government decisionmaking-processes normally much attention is paid to policy making and not to policy-implementation, insufficient thoughts are given to the operational consequences. Aiming for state guaranteed titles and accurate boundary survey might hamper and delay the establishment of land administration systems, as unfortunately is shown in many countries. Therefore politicians responsible for the land issue in government policy should have a better understanding of the possibilities of starting simple and migrate from simple to complex systems. Surveying professionals should develop the capacity to better understand the relation between societal development and the appropriateness of technology. Better start 'quick and dirty' and develop successfully to 'sophisticated' over years, than start 'sophisticated' and fail.

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1. INTRODUCTION: WHY THIS PAPER

Land administration, defined by the UN/ECE Land Administration Guidelines 1996 as 'the processes of determining, recording and disseminating information on ownership, value and use of land when implementing land management', is considered as an important condition for sustainable development (UN/FIG Bathurst Declaration 1999). If this is true, - and the Declaration gains lots of support and recognition (also by the author)-, then the impact of the Declaration is that all countries in the world should install a mechanism for determining, recording and disseminating information on ownership, value and use of all lands in the country, and as soon as possible too! At the same time a rough estimate is that 30 of the 191 countries pursue a country covering land administration system, and that another 20 are well up steam, at least if the definition of 'land administration' is not taken too literally and is narrowed to 'ownership' only (not necessarily including a comprehensive recording of 'value' and 'use'). 'Ownership' -by the way- should be understood as all forms of relationship men-land that are recognized in a society as being legitimate, so more that 'freehold' only. Whatever the case, these estimates show that the ideal situation of world wide presence of appropriate land administration systems is still far ahead. In order to prevent that this ideal situation will remain utopia forever, there is a need to reconsider traditional views and to link up with various solutions in practice -born out of need-. Such traditional views - in my opinion- are
- land administration is in any case necessary
- land administration is a task of the central government
- land tenure is synonymous with 'freehold' and 'leasehold'
- the world is divided in deed- and title registration systems
- without accurate cadastral parcels land administration is not possible
- what is best for one country is also the best for another country
- the strategic goal always is a full fledged comprehensive national database

This paper aims at providing a modest contribution to this debate. First of all we try to make a tour d' horizon of observations, then we will draw some conclusions, make some considerations before we will deal with migration.

2. OBSERVATIONS

2.1 Tour d' horizon

An inventory of existing literature about the state of the art and progress of land administration in countries all over the world, teaches us as follows (such an inventory can only be 'quick', because existing material on land administration is on one hand

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overwhelming, but -on the other hand- statistical data are poorly -anyhow not systematically-documented, so an inventory is not only 'quick' but 'dirty' too !).

Industrialized countries (like in Western Europe, Canada, Australia, New Zealand, Korea) have country covering land administration systems (UN/ECE 2001a), but face problems in the registration of public land rights (rights and interest in land according to public law are of increasing importance, even as important as private rights in land), the incorporation of native titles (Maori, Aboriginal, Inuit, Indian, etc.) and -more technically- the re-engineering of their legacy systems (FIG, 1999).

Countries in Central Europe and the CIS-countries have land tenure forms according to long traditions (civil code law families) and well accepted by their people. They face challenges to enforce land law arrangements, and the completion of land registers and cadastres, but are -generally speaking- well up steam. Differences are related the extent to which traditional land registers and cadastres were maintained during the communist era (Ossko & Hopfer, 1999):
- were maintained indeed: Hungary, Czechoslovakia, partly Poland, Yugoslav States
- present but not maintained: Rumania, Baltic states, Bulgaria
- no presence at all: former Soviet states

A few examples: Hungary is almost ready: 2005 (Ossko, 1998), idem Czech Republic: 2006 (Šima, 2000), Armenia already issued 2,5 million so called 'temporary titles' for all agricultural lands and all urban apartments (Vardanyan, 2001), Albania issued so called 'cadastral certificates' concerning 3 million properties (Dubali, 2000).

Countries in Latin America show ongoing efforts for land reform (since beginning of the 20th century, starting in Mexico 1917), in order to provide the poor and land-less people with some form of secure property (much of this section is based on Zoomer & van der Haar, 2000). These efforts of land reform have not always been successful.
Problems are most likely
- granting of title proceeds too slowly
- land records hardly reflect the present day situation
- registration often makes uncertainty and conflicts even worse
- registration threatens security of many customary right holders
- land titling does not lead to reallocation of land to the most efficient users

In -for example- Brazil in the period 1990-1996 only 80.000 of 4.8 million land-less families received land. Still about 45% of agricultural land is concentrated in ranches over 1000 hectares in size (Osava, 1999). Extreme forms of land concentration still exists all over Latin America. IMF and the WB see the redistribution of land as the highest priority in the area. Most countries adopted the so called neo-liberal land policy, which includes preference for the privatization and individualization of property. On the other hand analysis show that -depending on the local situation- communal tenure systems might be a more cost effective solution for the problem than the abandonment of these systems in favor of freehold title and subdivision of the commons (Zoomers & ter Haar, 2000).

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The Ecuadorian cadastre covers only 50% of the country (Salazar, 2001), however well up steam.
Guatemala might be representative for the post-conflict countries (Nicaragua 1989-1990, San Salvador 1992). 95% of the rural parcels actually has not been registered. Aim of the 1996 Peace Treaty (par. 38) aims therefore at a multi user land registry and cadastral system (Godinez, 2001).

Land administration in Africa is very much related to -what is called- dual systems of land tenure, that is the existence of various types of land tenure concepts in the same country. The basic idea is that western-style ownership consists of an individual relationship between men and land (although in many times coming from feudal relationships), while customary concepts are based on ownership of a village, family, tribe or clan to which an individual has a certain relationship. In such situations the man-group relationship dominates the relationship of man to land. Although the majority of the countries adopted western-style statutory laws, experience show that people's behavior does not change with respect to their own existing normative system. This is called legal pluralism. It was found that of 31 out of 44 countries in Africa have individual ownership as the official land tenure, at least 9 a mix of individual and collective tenure, while the de facto land tenure system in 36 countries is the customary tenure (Bruce, 1996). An interesting question is whether the people themselves in these non-registered areas perceive they have security of tenure or not. (Bruce & Migot-Adholla, 1993) investigated land tenure security in Africa in collaboration with the World Bank, the International Crop Research Institute, and the Land Tenure Center of the University of Wisconsin (USA). They found that regarding the robustness, duration, assurance of customary tenure, people in many customary jurisdictions feel secure about their customary rights to land. These people know the unwritten traditional rules, and they can anticipate and predict the impact of their behavior. The unwritten customary rules might provide a normative system which is sufficiently transparent, reliable, predictable and workable. In their examples Burkina Faso problems started when the government adopted new laws on land tenure which were vague in their definitions, and were not implemented because of debate and discussions. The promulgation of the law did have the immediate effect of introducing an element of uncertainty. In for example Ghana the weakness of the existing cadastre caused an increasing number of litigation's on land with overlapping rights. In for example Uganda the new land law converted owners of land into leaseholders of the State, exposing them to new dangers of loss of land.

A few examples: in Ghana 80% of the land is under customary tenure, the rest is State land and private land. Registration reflects mainly urban land, a start has been made with the registration of rural lands (Abu, 2001). Zimbabwe has 42 % communal lands, the rest is freehold (large farms) (Chimhamhiwa, 2000).

In order to speed up processes of land registration Africa is very innovative in the creation of new forms of land tenure. Well known are village titles (Tanzania, Zimbabwe) (Lugoe, 1996), certificates of occupancy or rights of occupancy (Tanzania, Nigeria) (Sule, 2000), 'group ranches' (Kenya) (Waiganjo, 2001), flexible title (Namibia) (Juma, 2001)(de Vries, 2000), customary rights issued by Land Boards (Botswana, Uganda, Namibia) (Toulmin, 2000), co-

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ownership (Mozambique) (Toulmin, 2000), communal title for Community Property Associations (South Africa, most likely to be replaced by customary commonhold) (van den Berg, 2000) (Toulmin, 2000).

In Asia and Australasia various land tenure forms occur. Turkey has a western style land tenure and makes good progress of registration of built plots: all urban lands (38000 km2) and 64% of rural villages are done (24000 km2) (Erdogan & Sahin, 1998). Arabic countries know land tenure according to Islamic religion (Mulk, Miri, Waqf, and Musha). Not much is known about registry and cadastre. In China land ownership is vested in the State (people), the citizens are entitled to land us rights. Many other countries face -like Africa- dual systems of tenure. In Fiji 84% of the country is under customary tenure, so called native leases (Rakai, 1995). In Tonga all land is vested in the King (feudal system), all male Tongans are entitled to the allocation of 1 plot of land for a house, some kind of title which however can not be sold or bought (Vi, 2001). Since the overthrow of the Khmer Rouge in Cambodia 10% of the country has been registered. The decision was made to grant occupiers of land a certain title, only if they had some evidence of occupancy during the last 5 years. In 1992 4,5 million land claims were submitted, from which -as said- 10% is granted to date. As a result the people in daily life consider the stamped receipt of their claim as a title, that even can be mortgaged (Törhönen, 2001). Thailand has no customary tenure, since occupancy rights of farmers are not recognized any more and are replaced by ownership. (Land Code 1954). In Vietnam land users are empowered to exchange, transfer, lease, inherit, and mortgage land use rights, that are allocated to them by the State (Land Law amendment 1998). Registration in any form does not take place yet. The Philippines have some customary tenure ('ancestral domains' some 2 million hectares), land reform (4 million hectares), and a Torrens system (coverage unknown, in 1996 about 800 out of 1500 municipalities) (Guillermo, 2000).

2.2   What about informal settlements in this tour d' horizon

The tour d' horizon shows that extensive parts of countries are not registered. The extensive parts together form a major part of the world. These unregistered lands might be state lands, customary lands of any other form of indigenous tenure. Substantial parts of these unregistered lands however are informal settlements (unless the settlers occupy private land, then they might possibly occupy registered land), which particularly are located in urban and peri-urban areas. Illegal possession of rural land also occurs. Informal occupancy of land is a problem in a majority of countries, due to the inability of governments to find appropriate land policies to the fast and large scale migration of rural people to the cities, and to enforce adequate land redistribution mechanisms in favor of the poor and landless people in rural areas. There is a dilemma. On the one hand land owners feel insecure because of land invasion, on the other hand governments try to protect informal settlers by anti-eviction regulations. Whatever the case, as such informal settlements and illegal occupancy are part of the general problem of lack of land administration systems.

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2.3   Some conclusions from this tour d' horizon

There is no systematic monitoring of the land administration activity throughout the world. Commission 7 is making some attempts (benchmarking-symposium Gävle 2001, benchmarking booklet, standardized country reports). However the observations mentioned above make some careful conclusions possible.

1. Land administration almost always reflects 'traditional' common law and civil code based land tenure only ('statutory land tenure'); land administration systems seem to have difficulty coping with other forms of tenure. The legal meaning of registration and the related benefits (if any: depends on the institutional context) is not always clear to the people.

2. Land tenure arrangements are complex, and locally determined, and are not easily replaced by statutory land tenure forms. There are many examples of people continue their traditional behavior even when governments imposed new land tenure forms including registration. With other words: these land tenure forms are often beyond people's mind-set, likely because these forms do not correspond with their normal social structure. By consequence land tenure reform should better reflect the system of norms and value of the community.

3. Allocation of tasks, responsibilities and competencies in the public administration (also with regard to land registration and cadastre) do not always correspond with people's understanding of their social structure: they don't always have affinity with the state organisation. Therefore land administration authorities should better reflect the governance structures of the people.

4. Governments are sometimes weak in enforcement of the (land-) law, which causes uncertainty and insecurity of rights and interest in land. Land tenure forms should be well thought-out, because they should be sustainable for a long time. Thoughtless changes in land tenure forms are devastating for the confidence of the people. Land tenure reform therefore is a risky matter: the policy decisions should be right in one go.

5. Governments are sometimes too much aiming for what they think is the best: individualized state-guaranteed titles to land with accurate surveyed parcel-boundaries. Such a goal puts heavy pressure on a governments policy and budgets during a long time. Starting simple, and then realize a migration path likely is better manageable.

6. Governments underestimate the importance of communal land tenure. Recognition of common ownership patterns and related recording might be as cost effective or even more.

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3. THE PURPOSE OF LAND ADMINISTRATION DETERMINANT FOR ITS COMPLEXITY

Land administration systems are not purpose in themselves. They are part of a broader land policy. Land policy reflects the way governments want do deal with the land issue in sustainable development. That depends on the culture, history and attitude of a people. Therefore land administration systems will differ from country to country. This understanding explains -by the way- why no system is 'the best'. It is worthwhile to draw up a picture of the support land administration systems give to the implementation of (the most important) land policy instruments, as there are (Kirk & Löffler & Zimmermann, 1998):

1. Improving land tenure security
2. Regulating the land markets
3. Implementing urban and rural land use planning, development and maintenance
4. Providing a base for land taxation.
5. Management of environmental resources

3.1 Land Tenure Security

Concerning the *improvement of land tenure security*, the legal framework of land administration systems (related to the registration or recording of rights and interest in land) is determining the nature of the security provided. Within the context of the definition of these rights 'in rem' (as an institutional prerequisite), deed-systems provide an other security than title systems. The combination of a strong notary-system (e.g. *latin notary)* and a deed registration, might provide as much security as the combination of non-authentic (underhand) documents with a title registration (strong role of the registrar). Other relevant aspects are the extent to which legal facts are guaranteed by the State, compulsory or voluntary registration, land survey of a subdivision prior to or afterwards the transaction, type of land tenure (individualized, customary), litigation, and the definition of the legal object to be surveyed (individual parcel, group parcel, object).

3.2 Land Market

Concerning the regulations for the *land market,* land administration systems provide transfer procedures of a different nature. On one hand there are plain procedures of submission of a transfer document and a recording after a minimum of formalities (e.g. *simple deed registration*), on the other hand more complex procedures regarding investigations prior to the approval of the legal impact of the transfer (e.g. *issuing of a title certificate*). Some countries require approval by a chief surveyor, a chief planner or an other authority. Advantage is that e.g. a building permit is granted together with the title, while in the first case the procedure for planning- and building permits starts just after the transfer. The process-time necessary for the transfer procedure (for example from the obligatory agreement to the official recording or registration, that is often used as a benchmark) therefore might result in a different '*value*' for the applicant.

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3.3 Rural and Urban Land Use Planning

Concerning *urban an rural land use planning, development and maintenance*, the support of land administration systems lies foremost in the phase of development and maintenance of a given land use. This activity is to be seen as an intervention by the government in private rights to dispose. Without knowledge about who owns what and where (also in *customary areas* !) land management will be hardly possible for the government. From the land owners point of view, intervention by the government specifically limits his private right to dispose on the actual parcel, being the legal object of his private rights. The intervention takes an ultimate form in the execution of pre-emptive rights and expropriation. Regarding protection of third parties in good faith, pre-emptive rights and expropriation decisions should therefore -by the way- be recorded in the land administration system.

3.4 Land Taxation

Concerning the support of *land taxation,* the fact that land tax is an outstanding example of local tax. Without knowledge about taxable persons, taxable objects and land values (all data to be provided by the land administration system), the generated revenue can not be high. Land taxation in many countries is based on land administration systems (UN/ECE 2001b).

3.5 Management of resources

The *management of environmental resources* is of increasing importance. The measures a government can take, are in many cases executed by imposing restrictions on the use of land. A good example is soil sanitation, where governments can impose to owners of land a compulsory soil cleaning, and can give such measures the status of real right , which means that these orders have legal power against third parties (e.g. new owners). Therefore these public encumbrances are eligible for registration.

3.6 Some conclusions concerning the purpose of land administration

The implementation of land administration systems is directly related to its purpose. It depends on a country's land policy what that purpose is. There is no reason why a land administration system should be more complex, more comprehensive, more detailed, more accurate then is needed for serving the purpose. If -theoretically- in a country no land administration systems exists and the government:
- recognizes land tenure security as satisfying
- doesn't encourage a land market
- foresees no land planning activities are foreseen
- levies no land tax
- doesn't feel a need to manage natural resources
there is no reason for any investment in a land administration system. Careful understanding of the purpose of the introduction of land administration systems in national circumstances therefore is recommendable. We can find such a consideration in (Ezigbalike, 1996), who argues that land registration in rural Africa might have no relevance regarding the issue of

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land tenure and land markets, but could find its relevance in the need for a better land management. This kind of consideration likely leads to an other system design.

4. SOME GENERAL ASPECTS OF LAND ADMINISTRATION

4.1 Basic principles of land administration, and their circumstantial relevance or non-relevance

When needed for the above mentioned purposes, the two basic principles for the land administration ('registry and cadastre') traditionally remain :
- 'publicity'
- 'specialty'

'Publicity' means that relevant documents regarding the creation, transfer and deletion of rights and interest to land are open for public inspection, giving third parties an opportunity to be informed about the legal status of land (these documents might concern some form of a 'deed' or 'title', depending of the situation).

'Specialty' means that all subjects, objects and their mutual relationship are sufficiently specified, giving third parties an opportunity to know exactly (enough)
- which rightful claimants claim:
- which rights and interest to:
- which lot of land.

Although no land administration system in the world fully meets these demands, theoretically the relevant subjects and objects concerning all existing real rights should be specified and open for inspection, also land related restrictive rights and interest according to public law (public land rights, encumbrances).

It depends on a governments land policy (materialized in land law) what these subjects, objects, and rights are, and to which extent they should be identifiable (and with what accuracy).

4.2. Land administration and norms and values in society.

Anyway, do only governments define the subjects, objects and rights that are to be recorded ? This is questionable, because the government is not the only one to define the relationship men to land, as these relationships might also be based on -apart from statutory and common law- customary traditions, or informal use (therefore more comprehensive than the traditional western approach to ownership, often named as 'colonial'). As such, land administration relates directly to the norms and values in society or community.

Without an in-depth understanding of land tenure arrangements, it will be hard -if not impossible- to identify the processes of determining, recording and disseminating of information on tenure arrangements, which should be in place in order to deliver the services

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required for an adequate facilitation of security of tenure, markets, planning, taxation and management of resources.

Applying land administration -seen from a land tenure point of view- means that the actual registration of existing land tenure adds a certain value, namely the certainty that those possessing these registered rights can be certain that their rights will be valid as long as they are not revoked in a legal and comprehensible way. In our view the word 'legal' here means any system of norms and values which provides transparency, reliability, predictability to a community. Therefore customary or indigenous norms and values (normally unwritten) where rights to land are recognised as legitimate by the community and where rules for allocation, acquisition and transfer are known, are fully eligible for land administration. This is shown in practice (Chome 2002). Even so called informal settlements (whatever form they might occur) are eligible for recording, as soon as land relationships are commonly recognised and considered as being legitimate within the social setting. This explains again that recording or registering relationships from men to land is basically possible whatever jurisdiction is valid, which provides opportunities to integrate statutory, customary and informal arrangements in a land administration system. At the contrary, where relationships men to land are not recognised and where norms and values concerning this arrangements are not transparent, reliable and predictable, recording or registration is meaningless. What is left is nothing more than a recording of who actually uses the land as a kind of pseudo-physical attribute to a certain land unit: a land information system providing facts and no legal notions.

4.3 Land administration and customary tenure

Whatever the case, the tour d' horizon in paragraph 2 shows that governments tend to include some form of recognition of customary land tenure in their land laws, providing possibilities for registration in the existing land administration system, or -in some cases- in separate 'official' registers (like native title registers). This seems to be a better way then impose a land tenure system from outside upon a local society which has its own norms and values regarding land, see the discussion on the 'replacement paradigm' or 'adaptation paradigm' in (Bruce & Migot Adholla, 1993). However there are circumstances that make replacement likely to be necessary, as there are:
- break down of customary structures because of:
- population pressure, urging for individual tenure forms
- land scarcity, making traditional allocation of land impossible
- need for credit by small-holders
- growing land market initiatives
- growing migration of people
- tension between customary groups on outer boundaries
- need for application land management instruments (planning & development, taxation)
- need for substantial land and water resource management

In order to create an appropriate policy on land registration and cadastre in these circumstances, an inter-disciplinary approach is recommendable, land surveyors should -for example- intensely cooperate with sociologists, anthropologists and lawyers.

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4.4 Conclusion concerning the general aspects

The design and implementation of land administration systems depends heavily on the intended use. As governments should principally aim at working as efficient and as effective as possible, and should keep the tax burden as low as possible, it is up to the government to reflect on the true minimum requirements to land administration systems given the intended use. Part of that process is the identification of existing and intended users of the system, and asking their opinion on what they experience as sufficient for their purpose. (Fourie & Nino-Fluck, 2001) speak with that respect about a so called Stakeholders' Forum. So the steps a government could take are
- identify the true purpose of the land administration system
- identify intended users of the system and other stakeholders
- identify a minimum set of requirements that the system should meet
- reflect on future developments
- refine the minimum set to guarantee scalability
- avoid duplication of data acquisition, aim at datasharing (infrastructure)

Somehow this way of working corresponds with the history of many land administration systems: starting as simple registers and cadastres for land taxation purposes in the 19th century, growing into more sophisticated forms serving legal security, land markets and land management (see also Ting & Williamson, 1999, and Van der Molen, 2002).

5. MIGRATION ASPECTS OF LAND REGISTRY

5.1 Land tenure (What to register)

As land tenure exists of a 'bundle of rights and interests' (whatever) a decision is needed on what -minimal- part of that 'bundle' should be registered considering the intended purpose.
- If for example the purpose is 'land taxation' and the tax law says that tax is levied on 'ownership' only, it makes no sense to register leases, derived rights, actual land use.
- If for example the purpose if facilitating credit mechanisms and mortgages are defined by the law as personal rights in stead of rights in rem, registration of mortgages might be irrelevant.
- If the purpose is the encouragement of the land market, and the involved parties (sellers, buyers, conveyancers etc.) are not interested in encumbrances and servitutes, there is no need for recording these.
- If the purpose is land management, the government might be satisfied by knowing ownership, group ownership, communal ownership, village ownership and the name of the chief, village headman.
- If the government imposes various restrictions on land use, and the law says that these restrictions are bound to the owner and not to the parcel, there is no need for recording. If certain restrictions however are bound to the parcel (so that they have legal power to third parties, like buyers) recording of these restrictions might be useful.

Referring to the tour d' horizon in paragraph 2, there are basically a few scenarios.

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Assumption is that countries in any case aim at improving their land management capabilities (planning, development, maintenance of land use, resource management). As the formulation of land management policies normally is based on general social and economic developments in a society, this can be done without detailed knowledge on land tenure patterns. But the implementation of land management policy, depends heavily on such knowledge, as government have to interfere in existing land tenure patterns. The first need is to have access to knowledge of the people to get in touch with, in order to negotiate planned developments and to acquire land if necessary. A simple land administration system will suffice. Simple records combining persons in charge (village heads, chiefs, family heads, residents, company names) with some location based unit (street address, map-coordinate) will do. That means that no high investments are needed for precise land adjudication and cadastral mapping. As many land developments are executed on a project base (e.g. housing, transport and energy infrastructure, nature conservation) governments always can consider the creation of project-based land administration systems if necessary (e.g. when there are problems with the public acquisition of land).

If governments want to levy land tax, a more sophisticated land administration system is needed, that gives at least information on the parameters on which the land tax is based (like ownership, possibly land use, surface area of owned parcels). The datacollection can be restricted to what the tax law considers as base for taxation. Normally that is ownership and or use, not derived rights and interests. If the tax law considers group ownership as a taxable subject, and the surface area of properties as taxable objects (also when commonly owned), the registers could contain names of owners (individuals, companies, groups), and an identifier plus indication of surface areas of properties.

No high investments are needed neither for very precise land tenure registration, nor for very accurate boundary surveys.

A land administration system with such a content, can basically be suitable for improving the land market, under certain conditions. Additional regulations are needed for the protection of parties in the market (particularly the buyers), as the information on the legal status of land is only poorly supplied by the system. Regulations should then 'repair' the imperfections in the system. Such a regulation might be that sellers are lawfully obliged to give full and honest information on the legal status (rights, derived rights, restrictions, public encumbrances, boundaries) of their land, on pain of claims before court in case of wrong information deliberately.

If -however- in the land market the existence of all these rights and interests very much influences prices and values, the market will be hampered if people do not have easy access to reliable and complete information. A measure might be the number of litigation. Then land administration systems should collect and provide information on the legal status of land as comprehensive as possible. That requires reasonable investments in systems. These investments however can be passed on to the market transactions, as likely the market is strong and wealthy enough to bear such extra transaction costs. Detailed land information

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represent enough value for the parties in the market, compared with the benefit parties will have from being well informed.

If the government attributes -by law- a certain recognition to recorded rights and interest (for example by guaranteeing the information, or accepting liability for correctness) land tenure will be legally secured.

By consequence, depending on the purpose of the system, land administration systems could collect, process, and disseminate information on land tenure from very simple (only land use as it exists), towards comprehensive (all rights and interests).

5.2 Land Administration Authorities (Who will register)

In many countries land administration is considered to be a public task, belonging to the mandate of the State. The same can be observed for the allocation of land to citizens (like Ministry of Lands, Commissioner of Lands). By consequence the tasks are carried out by state level organisation. These state level organisations often execute their tasks in a deconcentrated manner. For example the registration takes place at the courts, reporting to the Ministry of Justice, the cadastre is carried out in local or regional branches of an other Ministry (Housing, Environment, Home Affairs etc.) , Sometimes (e.g. France) the cadastre is carried out by municipalities. Land administration done in a decentralised way (no competence of the State) is not often occur.

The division of tasks, responsibilities and competencies between government layers should -however- also be considered from the point of view of efficiency and effectiveness. These two views seem to be in conflict. It might be very efficient to execute the time consuming maintenance of registers and maps in a concentrated way with the number of employees as less as possible. This is likely not very effective, as implementing land policy instruments (land markets, land use planning, management of resources etc.) are pre-eminently tasks which have a strong local and regional importance, and should be carried out close to and in interaction with the people (Fourie & Nino-Fluck, 2001).

This dilemma can be solved in an ICT environment. Financial calculations show that the exploitation of central databases is cheapest, avoiding necessary ICT-staff in all local offices (system management and maintenance, helpdesks etc.) (Kadaster 2001). Data-communication -at the same time-facilitates local responsibility for information-management. That makes it possible to allocate tasks which should be closely linked to the people at appropriate local or regional levels, whilst keeping costs as low as possible through centralised processing and storage.

This development makes local operations possible. Knowing this, there is no objection against starting at local level -especially in an analogue environment-, as time will come that local registers and maps can be made available at all relevant levels of government and can be the input for central databases. So the migration path is starting at local level, and growing to centrally stored data and remote information management and idem responsibility.

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5.3 Registration (How to register)

Governments aiming at state guaranteed titles to land know that they initiate an expensive activity. Precise adjudication processes, in depth investigations of the legality of the land transfer, and accurate boundary survey are capital-intensive. The most simple land register is a shoe-box filing simple transfer documents approved by seller and buyer endorsed by witnesses, with a reference to a certain description of the object. Of course such a system will show many imperfections regarding completeness, validity, accessibility, etc. The requirements of 'publicity' and 'specialty' however are met, although in a very rudimentary way. But it might work.

An improvement is that these documents have a certain legal status, because they are drawn up by a private conveyancer, lawyer or notary-public. Costs of recording can remain low, as the keeper of the shoe-box (the bow will grow towards a 'register') only files the documents, keeps them available, but does not investigate legal impacts: a simple form of deed-registration.

As soon as a keeper of such a simple register investigates the validity and the legal impact of a transfer document, and has power to approve or to endorse, the keeper becomes a kind of registrar, whose approval adds value to the recording namely that the transfer of right is valid and recognised: a simple form of title registration. Costs of registration however will rise, because of the extra activities for the keeper of the records.

If the registration process requires an indication of the object of transfer on some kind of map, a simple cadastre starts.

The migration path of land registration therefore might be starting simple with a rudimentary form of deed recording, and giving more power over years to the keeper for approval of land transfers: the keeper grow towards a role of becoming registrar.

5.4. Implementation (When to register)

From the beginning attention should be paid to updating processes. The best guarantee for up to date registers and maps is invalidity of land transfers in case of non-recording: the buyer will not become the new owner/rightholder. This is however quite rigid. It depends on the intended use of the system what reasonable requirements are. Fiscal purposes might ask for less frequent updating than land markets. Submission of transfer documents before a certain fiscal reference date seems more appropriate then, while a lively land market requires day to day actuality.

A migration path therefore might be from less-frequently updating towards high frequent day to day updating.

6. MIGRATION ASPECTS OF CADASTRE

6.1 Identification of rightholders

The 'specialty'-principle requires that people having access to the registers can be sure about the identity of the mentioned right holders. An ultimate identification is the recording of ID-cards and relevant ID-numbers, verified by the registrar or notary. A most simple form is the identification of right holders by witnesses, giving some validity to the names in the files. An intermediate form is a statement of -for example- conveyancers that the persons mentioned in the transfer document are indeed the people they say they are.

6.2 Identification of objects

It depends on the purpose of the land administration system how accurate parcel boundaries should be surveyed. As boundary survey and boundary mapping is an expensive activity, that takes some processing-time to finish, alternatives might recommendable.

If the purpose is land management, governments might be satisfied by knowing outer boundaries of customary areas and the name of the chief, or a village boundary with the name of the village headman. Then there is no need for accurate information on individual parcel boundaries. When individualized land tenure forms exist, street addresses or single midpoint-coordinates might be appropriate (GPS or map-coordinate). If there is a need for the approximate boundary, the general boundary rule can be applied, resulting an a visualization of the boundaries on a topographic map or orthophoto.

If -in the case of land taxation- the tax is not related to surface areas of ownership (m2) , it also makes no sense to aim for accurate boundary surveys, possibly a street address (if available) or midpoint-coordinates also here suffices. The creation of cadastral parcels is not necessary then.

If - in case of credit- banks need only the value of a building for deciding on the provision of a mortgage, neither accurate boundary-surveys are needed.

From the surveying point of view therefore a migration path is starting with simple indicators where the land is located, via the application of general boundaries, towards accurate boundary- survey.

7. CONCLUSIONS AND RECOMMENDATIONS

Considering the challenge many countries face to speed up the process of recording information on ownership (etc.), it seems recommendable to create simple systems that can improve over years. The steps governments can take are:
- develop a long term scenario concerning which land policy instruments should be supported by land administration
- decide on priorities: which instruments need support first.
- decide on minimum content of registers and maps
- design simple processes and accept imperfections

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- design systems that are scalable
- develop a migration path towards the intended use on the long run
- anticipate on ICT possibilities, to be applied over years
- avoid accurate boundary survey as much as possible in the initial phase
- avoid intensive investigations to guarantee titles, accept the imperfections of recording transfer-documents ('deeds').

As countries differ, as do attitude, history and culture of people, there is no scientifically best migration path. Following the steps as mentioned above might provide however a good framework for successful introduction and growth of land administration systems.

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