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LAND INFORMATION, LAND REGISTRATION AND MAPPING

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INFORMATION IS THE ANSWER TO A QUESTION

Many questions on land tenure have to be resolved as part of land administration, which are concerned with specific questions on who, where, what, when, etc. This paper discusses HOW these questions on WHO, WHERE, WHAT, WHEN in relation to land can be answered.

- AND WE CANNOT WAIT FOR DECADES FOR AN ANSWER!

Implementing Land Policy depends on Land Administration

Research has focused on analysing the complexity of land tenure, failures of land reforms and outlining appropriate land policies and strategies.

Currently, the level of frustration is spreading over the lack of practical implementation of whatever land policies or principles have been defined at the strategic level, resulting in leading writers on land administration stating that:
"Land administration is a missing link", Michael Roth, Land Tenure Centre, September 2002
"Land administration systems in Africa have generally failed to perform the functions for which they were designed." Prof. Hastings Okoth-Ogendo, Kenya
"Land administration is a public good that needs to be accessible and affordable to all " DFID Land Policy 2002.

Clearly operational thinking needs a come back, because land policies do not just happen, once the political level has defined it. Lost time only makes problems grow.

TIME is a critical factor in land administration

Lost time in land administration has enormous opportunity costs:
- Safeguarding resources can be a question of time or they will be gone forever.
- For the individual, who is in trouble, time is a critical factor, as well.
- Taking land for some undesired use can be most difficult or costly to reverse, especially if constructions have been built.
- As long as there are no land records, possible revenues from land taxes will not be coming in;
- Meanwhile land speculation will contribute to enrich the wealthier sections of society.

The land market (and speculation) is going on largely unhindered irrespective of formal land administration. Although the land market is an integral part of economic development, it is urgent to control it in some respects, as the weaker segments of the population and the environment needs protection against market forces.

FOCUS on what can and should be done now

On one side we shall avoid oversimplifying interventions of land registration. When transforming informal land rights into formalised land records the whole range of rights and interests has to be dealt with.
It has been found that going directly to titling of land may endanger weaker land rights. Payne has shown that under complex circumstances vulnerable groups' interest could be at risk (ref. to Payne 2001).

On the other side, it is also necessary to DE-MYSTIFY land registration and land administration. Land registration is a process of clarification of rights and thereby simplification related to the actual circumstances in the field.

Common sense and operational thinking are as important as the understanding of the legal context. Some of the good, supportive steps in land administration are actually "value neutral", and some actions can be taken, which need not be prohibitively expensive.

The state-of-the art also shows that not all problems shall be treated with the same medicine of classical land titling. The understanding is growing for the virtues of incremental and differentiated approaches:
- Strategies of land regularisation shall be dependent on characteristics of areas;
- Improvements and stepwise approaches may be preferable;
- Mobilisation of local resources and participation is desirable in balance with
- Legitimate and transparent adjudication processes.

It is suggested here to apply the **Pareto Principle "the 80:20 rule": "A minority of input produces the majority of results"** and search for the type of input that will produce 80% of the results in regularisation of land tenure and in reduction of conflicts over land.

LAND REGISTRATION: WHEN RECORDS AND DATA BECOME FOOTPRINTS OF DECISIONS

Land Registration is a transformation from an informal situation to a formalised situation of tenure, whereby an authoritative information system - however simple - holds evidence of the legal status of land (real property) resulting from decisions taken.

Data in a land registration system is the footprint of a decision. Transparency and accountability depends on the access to such data. The diagramme below shows the elements and steps in an individual case of land registration, and the different types of information involved.

LAND REGISTRATION and DATA DEPENDENCY			
Event	**Records / Data**	**Action**	**Observation**
Past events = Tenure history!	Memory, records, evidence	Collection and interpretation of tenure history: Extract key historic data (names, etc.)	The better known and better documented, the easier to defend a right "Start where people are now - adapt, don't replace" (LEAP)
Preparation of decision on land	0. Back ground data: Basic Maps **Identified entities:** 1. Persons and households, 2. Areas, names, 3. Claims or rights	Inventory and Interpretation of **actual** situation: On site inspection- collect information Discussions, negotiations Identification of entities	Descriptive data Recognized entities
Decision on formalisation, allocation or transaction of a real property right	Decision **protocol** and /or **document**** (agreement, deed, etc.)	Official forum of decision makers; The parties concerned (Identification in the field)	Transparency Information - Public meetings
Registration of decision: LAND REGISTRATION	Standard registration in a system of **Authoritative Land Book or Database** with registration maps (index maps)	Application, Official Processing Entry and Publication	Structure is more important than media Accessibility and use Transparency
Transactions and changes	Change data with documentation in the Land Registration System	Public Services and public information System Maintenance	Accessibility Simplicity Affordable

**) If not registered, the system will remain informal, but possibly in a higher degree of order than before

Zooming in on what it takes to register land illustrates that in this type of intervention, DATA is not just DATA, but have different qualities and serve different functions. Land registration is a process culminating with the formal entry into a standard system of registration and record keeping, and during the process different aspects of data and information have to be managed. It shall be seen that data (information) plays a central role in the challenge of land registration; not just as a supportive technical activity, but data and information systems form part of the solution.

This paper is focused on the role of data, the options available, and possible ways of facilitating land registration through a clever approach to data collection and management. Previously, data collection (mapping, surveying, data recording) has been burdening the land registration processes (time, cost, technocratic bottlenecks), but it no longer needs to be so. More flexible and cheaper approaches are available now. Modern systems permit differentiated standards and incremental upgrading within a standard system.

Note that land registration is one of the components of land administration. 'Land administration' is used as a broader term, which usually include the range of planning and land management, as well.

DEFINITION OF SUCCESS PARAMETERS

The objective of land registration is to improve tenure security. How to measure such improvements is not only a quantitative measure of size of areas registered or number of beneficiaries, but depends on defining broader indicators of improving tenure security reflecting the softer aspects.

A project called LEAP, The Legal Entity Assessment Project in South Africa, executed since 1999 is presented here as an example of types of indicators, which represent improvements in tenure security.

LEAP has set up a number of indicators, in response to widespread concerns about the functioning of legal bodies especially in cases of transfer of land on behalf of groups of people under land reform programmes. LEAP is using the following indicators designed to reflect incremental improvements:

Indicators of improving tenure security Source: http://www.leap.org.za/FWF3F.htm	
Indicator 1	**People's rights are becoming clearer**; people know better what their rights are and they are more able to defend these rights.
Indicator 2	Land rights **administration processes** such as application, recording, adjudication, transfer, land use regulation and distribution of benefits are becoming clearer, better known and more used.
Indicator 3	**Authority** in these processes is becoming clearer, better known and more used.
Indicator 4	There are **more and increasingly accessible places** to go to for recourse in terms of these processes, and these are becoming better known and more used.
Indicator 5	Land rights administration processes are becoming **less unfairly** discriminatory against any person or group.
Indicator 6	Bridges are being built that span the gaps between actual practice and legal requirements.
Indicator 7	**Benefits and services are becoming as available** to people living under common property institutions as they are to people living under other tenure systems.
Indicators applied to * Group as a whole * People inside the group – households, interest groups, and individuals * Outsiders needing rights on the property e.g. municipalities delivering services	

It is not clear how the indicators are measured, but it is striking to see, that the terms are not absolute, but relative and expressed in terms of:
> ....*becoming clearer, better known and more used;*
> ....*more and increasingly accessible places*
> ....*services becoming available.*

Furthermore, these indicators are pointing towards two main prerequisites of secure tenure:

- Clear processes and procedures through local structures
- Availability of information and de-central services.

THERE IS GOOD NEWS FOR IMPLEMENTATION!

1. THE INFORMATION EXISTS!

Local information

Most information on land is available among people in the area: they know the history of the land well, but usually no written records exist, and delineation in the field may be difficult. Capturing the essentials of the history of the land (and related persons) is one of the most important steps in land registration. Therefore, decentralising land administration brings decision-making not only closer to the citizens - but also closer to the information and the realities in the field.

Recognition of the importance of building decentralised land administration

Central government and institutions have in many countries proven incapable of delivering services in local areas, so decentral approaches of land registration are mandatory. Moreover, decentralisation is a natural way of organising land administration, since land is local. However, decentralisation must be realised together with adaptation and a redesign of processes. Procedures have to be adapted and made accessible for ordinary people. Local registration has to incorporate customary and secondary land rights. Special action has to be taken to protect vulnerable and marginalised groups, and to avoid undue interference of local, powerful groups. Information campaigns must be conducted to communicate the essentials of the public registration process, the local execution and events as it progresses.

Key success factors in implementation of land registration seem to be good information campaigns, legitimacy and accountability. Simplification of procedures is the most important factor in building a functioning land administration system.

Central government needs to support the decentralisation process through capacity building and technical support. The general framework shall include a clear legal basis, predefined procedures and conflict resolution mechanisms to be conducted under the control of neutral parties. Building such a standard framework has to be initiated without delay, and be introduced asap. Regulations have to be adapted and improved periodically based on experience accrued.

Documentation of on-going transactions should not await a full reform. The sooner it is initiated, the sooner more order is established in land administration. Every event not captured in an administrative system (however simple and preliminary) is a lost opportunity and contributes to erosion of the public administration system. Please, refer to the experience of the pilot project described in the LEAP pilot project: "On the establishment of the Ekuthuleni Communal Property Association 2003", http://www.leap.org.za/casesubframe1.htm

"We applied the principles of start where people are now and adapt, don't replace land rights administration authorities and procedures. The result was a set of agreed definitions and procedures that residents believe will work in practice and that were often ingenious in their solutions to specific local challenges."

The potential of modern photo maps

Unfortunately classical surveying has given mapping a bad name among social scientists. The fact is that modern image maps have the potential of

- ❑ Reducing complexity in land registration without stumbling in technicalities;
- ❑ Saving resources and time, when using photo maps for identification and discussions;
- ❑ Photo maps are excellent documentation instruments of the status in the field at a given time;
- ❑ Image maps help public participation, since anyone can read them, so they are excellent for communication

It is argued here that it is better to invest in more photomaps than in more 4WD's: Natural boundaries are easily documented, and delimitation of physical boundaries on photomaps can save surveying.
The cost of photomaps is low when bigger areas are covered and the production time is relatively short.

Photomaps can be produced through outsourcing, which may then release energy for the essential parts of land registration. Image mapping by satellite data and aerial mapping techniques supported by GPS are technologies, which reduces the burden of land registration agencies.

The sooner index maps are used for identification of properties and for registration of decisions and conflicts, the sooner disorder in land administration can be reduced.

The importance of basic land records

Strengthen local documentation practices is an essential aspect of building more orderly land administration, as mentioned above. Documented practices allow for better transparency and facilitates reforms. Preliminary records are better than no records.

Note that the Structure of information is more important than the recording media. It is simple to computerize structured records of data and files, once it is becoming feasible from the point of view of the technical infrastructure.
Systems of identification of persons, properties, localities, etc. should be defined as far as possible. Simple conventions on standards and structure will help. Classification and description of all different types of rights should also be supported from the national level.

An example
Land books have been kept systematically at local courts in Denmark since the 19th century in the form of protocols with associated legal documents. The land registry records (land books) were not digitized until in the 1990's and the last land book was converted in year 2000. The main difficulty encountered in the conversion to digital form was interpretation of the records: and converting registrations into a structured form.
Such books worked well and fine for more than a hundred years in Denmark, and good paper records can be a good start. On the other hand, computers should be applied whenever the environment is suited for it. There is no reason to fear technology, which have a potential of higher efficiency.

The instrumental role of IT and communication technology

Computer technologies may greatly reduce the cost of land administration as stated in the DFID Land Policy 2002. Use of technology is no longer reserved for sophisticated office environments, but can be used at even remote and humble locations. However, the technology is not yet sufficiently available or integrated in local administration, and the use of computers for administrative use has to be better organised and secured.

Efficient public administration relies on sharing and integrating information and basic data across sectors.

LAND REGISTRATION SYSTEM IS PART OF THE PUBLIC INFRASTRUCTURE

A land registration system cannot be viewed in isolation. It is inter-wowen with other basic registration systems, in particular personal identification systems and tax rolls.

In some ways it may be more difficult to identify or describe the holders of rights than the right itself, because it could be a wide circle, or because persons lack personal documents for identification.

In cases of community rights, the establishment of founding documents and rules of membership of communities is required. An example of community based registration is given at http://www.leap.org.za

Building public registers is part of any effort of building public services supported by public revenues. Registers (however simple) on localities, land, assets, persons, etc. are components of good practices of public administration, and such registers serve multiple functions.

The potential of realising social policies through a distributive tax policy has been practiced in many parts of the world. As real property taxes are mostly allocated to the municipal level, decentralisation can be strengthened in more than one way through building and maintaining basic registers.

Record keeping and registration systems are therefore not only prudent, but may also constitute good investments for society.

BUT WHERE TO START?

Since there is nearly endless amount of work to be done, a highly practical question arises: Should registration just start in one corner of a country and then work towards the other?

It is argued here to implement various concurrent interventions both systematic and sporadic selected based on giving priority to the tasks with the highest effect (reference to the 80/20 principle). A kind of hierarchy of problems seems to appear, which is useful for setting priorities to achieve an optimal effect (in line with the 80/20 principle).

Suggested priorities

Apart from the parallel activities of basic mapping and building basic registers, it is suggested to

1. Deal with Administrative and Community boundaries (higher level disputes) at first. Settlement if unclear territorial boundaries may at the same time lead to a reduced level of conflict at lower levels. At the same time the determination of administrative boundaries defines clear jurisdictions of authority within the territories, for which reason registration and dispute resolution can take place at a lower administrative level.

2. Make inventories and delimitations of public land, communal land and common space before private land;

It is recommendable as a first priority to register the most vulnerable land or land exposed to land grabbing, normally public land, common land, or critical land. Hereby, it may be possible to prevent undesirable actions, which could be difficult to reverse later on. It can be expected that in other areas with a more stable pattern of occupancy and use, e.g. in well established residential areas, the land tenure situation is not quite as delicate.

3. Initiate preliminary registration of all transactions and decisions on land
Preliminary registration of any transaction and decision on land has to be initiated from the beginning. Capturing actions in the land market will contribute to getting more transparency in the land market and facilitate intervention and systematic adjudication later on.

4. Build simple and basic registers on basic entities: people, clans, areas, properties, etc. and document decisions and events related to land.

LAND REGISTRATION IS AN OPERATIONAL CHALLENGE

Land registration is at the same time a huge practical operation, which has to serve all citizens and is affecting all areas in a country. The operational challenges are often poorly planned and supported, which causes the natural failure of a land reform process, which might otherwise be well designed or well intended. A growing understanding is now spreading that a diversified and iterative approach to land registration is needed to meet the operational challenge. Planning and objective criteria for such diversification are again related to specific information.

It is suggested here, that much more effort should be put into operational planning. It is necessary to view the intervention of building a land registration system as a type of "production" organisation. Land registration organisations produce land records and provide services and can be analysed and planned from

the perspective of input, resources, processing time, etc. We have to sit down and calculate with all the good tools and know-how available, how to optimise the "production" of land records and services. In this way, calculation of options of intervention can also be analysed and presented to decision makers. Pilot projects are needed to improve understanding of problems and develop methodology. Pilot projects can be implemented in parallel with a full scale, but incremental reform of dysfunctioning systems. Pilot projects should not postpone implementation of urgent measures to reduce the disorder in land administration.

Operational planning

Operational planning is a cumbersome, non-scientific exercise, where the basic facts are converted into figures, tables and charts. The quantitative elements of areas, groups, persons, properties, etc. shall be combined with estimates on what it takes to perform each type of action, how long each sub-process takes, where is the critical path, and so on. In this way it resembles any other kind of production planning.

Sadly, this necessary exercise has often been left out during planning of land reforms even when large funds are flowing in from international donors. While researchers contribute with excellent analysis of land reforms and land tenure problems, other professionals have failed to contribute to setting up the operational plans required to ensure implementation.

WHAT TO DO, WHILE LAND TENURE DATA IS INCOMPLETE?

It is suggested here to build a strategic partnership between cadastres and statistics for a number of reasons. Statistics and land registration share an operative challenge of mapping and definition of territorial boundaries and references. Synergy on data can be developed in the area of small area statistics and census mapping.

Censuses of population and housing are the most common (and often the only) source of small area statistics. The reliance on statistics is growing due to the increase of monitoring activities and the setting of the UN-Millennium goals for poverty alleviation. Through the milestones of the MDGs attention is growing in the area of obtaining quantitative measures of monitoring the achievement of the MDG's. Unfortunately, lack of land tenure data is so widespread, that it is hardly possible to establish a baseline. Therefore better monitoring data through better statistics is also necessary in particular in the transition period. A statistical perspective is also needed for collecting, analysing and disseminating gender-disaggregated data and information and integrating them in all planning and policy formulation.

It is suggested here to exploit the full potential of census data for land administration, as Censuses of population and housing are often the only countrywide data source:
❑ Quality of statistics depends on definition of territorial references and local administrative boundaries;
❑ Census data may include data or indicators related to tenure of housing or land;
❑ Cost savings can be achieved by co-production of basic maps and delineation of administrative boundaries and sub-areas;
❑ The quality of statistics will be better with better maps;
❑ Statistical offices often lack mapping and GIS expertise, which is available in cadastral offices;
❑ Better small area statistics can support land administration;
❑ Small area statistics could form part of incremental approach to land registration e.g. in slum areas.

In support of urban upgrading efforts it is argued that orthophoto maps combined with disaggregated statistics and various types of local records on neighbourhood level could serve a number of planning and administrative functions and provide necessary information for decision makers, locally and centrally. These tools are low cost compared to the cost of titling programmes.

To conclude, a basic level on information can be established by the use of small area statistics, and land tenure and housing indicators derived from the latest round of censuses of population and housing. Such GIS data digitised at census tract level (city blocks or smaller) is valuable as a support for physical planning, and the targeting of differentiated intervention and land tenure regularisation programmes in the first instance.

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