

International Experience with Land Administration Projects: a Framework for Monitoring of Pilots¹

by Tony Burns²

1. Introduction

Any discussion on strengthening land administration systems can very quickly become embroiled in a range of highly specialised areas. Institutional issues will arise, such as the roles and responsibilities of the agency charged with the task to complete the initial registration of rights in land, and its relationship to the agency that will maintain the register (if different) and to other key agencies that are responsible for managing land resources. Legal issues will arise, including such fundamental questions as the types of rights in land recognised by the state, the status of registered rights in land and whether there is a state guarantee. Surveying and mapping issues will need to be considered, and decisions made on the types of boundaries, the use of terrestrial and/or photogrammetric techniques, the role of cadastral maps and even on whether boundaries are marked. The question of centralised versus decentralised land registers will arise, as will issues related to techniques to store and archive land documents and the legal status of the archived records.

All these questions are relevant for India and this workshop. This paper sets out to:

- provide an insight into land administration and projects to strengthen land administration systems;
- review key lessons from international experience in strengthening land administration systems;
- review recent international experience with various types of Public-Private Partnerships (PPPs) in the land administration sector;
- summarise the key issues faced in India; and
- conclude with some strategic observations drawn from international experience and a summary of the key issues outlined in India.

2. Land Administration

2.1 Land Administration

Land Administration includes the processes of determining, recording and disseminating information about tenure, value and use of land. Land administration is

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² Managing Director, Land Equity International Pty Ltd, PO Box 798 Wollongong, NSW, Australia 2520. Email: tburns@landequity.com.au

a basic tool that supports land management and operates within the framework established by land policy and the legal, social, and environmental background of a particular country or jurisdiction.

In most jurisdictions land administration has evolved from separate systems to manage private rights in land and manage public land. In countries with a colonial background there is often a dual system; imported systems based on western models operate in urban areas and areas formerly occupied by colonial land-holders, and customary systems operate elsewhere.

Land classification plays a major role in land administration, particularly in Asia. In most Asian countries private rights are only recognised over non-forest land and a lack of clarity in forest boundaries is often a key factor in insecure tenure. With increasing pressure on land resources, many countries have set aside land for national parks and wildlife reserves but this has often resulted in conflict with 'customary use'. However governments in many countries either lack the political will or the ability to enforce land classification or the preservation of national parks and wildlife reserves. As a result, a significant proportion of the population has the legal status of 'informal settlers' or squatters. The rapid urbanisation that has occurred since the mid twentieth century has resulted in informal settlements in urban areas that most governments have found difficult to address.

2.2 Projects to Strengthen Land Administration

Not only is there great variety in land administration systems, but there is also great variety in the environments within which the various projects which aim to strengthen such systems operate. Countries where systematic land titling³ projects have been undertaken in the past half century range across the full political spectrum, from one party states in Cuba, Tanzania and Mexico, military regimes such as Perú and Argentina, to capitalist states such as Kenya and Thailand. Countries also cover the full development spectrum, from the poorest countries such as Malawi through to developed countries such as Japan and Taiwan.

Although there is fairly common agreement on the generic objectives for an improved land administration system, each project operates within a specific contextual mix of political, social and economic objectives. These contexts vary from transitional economies, evolving market economies through to very poor countries with strong colonial legacies. There is also variety in the type and relative importance of the obstacles that the various land administration projects face.

This variety makes comparisons difficult. In 2003 the World Bank commissioned a comparative study examining the experience of 18 countries attempting to improve land administration (Burns et al, 2003). The study summarised the major issues for land administration (see Attachment 1 for the issues identified for Asia) and concluded that the key elements in assessing the environment for land administration are:

- Clarity and social congruence in formally recognised rights and the ability of the regime to implement systems which recognise these rights (indicated by

³ A range of terms are used in various countries to describe the formal recognition of rights in land. These terms include: land titling, land adjudication, first registration, property formalisation, settlement surveys. In this paper the generic term 'land titling' will be used for these processes.

the proportion of the population and jurisdictional area that benefits from formal land administration services);

- Recognition afforded by the regime to informal land rights covering, where appropriate, both informal settlers and populations living under customary arrangements;
- The level of disputes over land rights and the efficiency and effectiveness of the formal and alternative dispute resolution mechanisms available to resolve these disputes.

The study developed a framework for assessing the efficiency and effectiveness of formal land administration systems.

2.3 Rationale for Investing in Land Administration

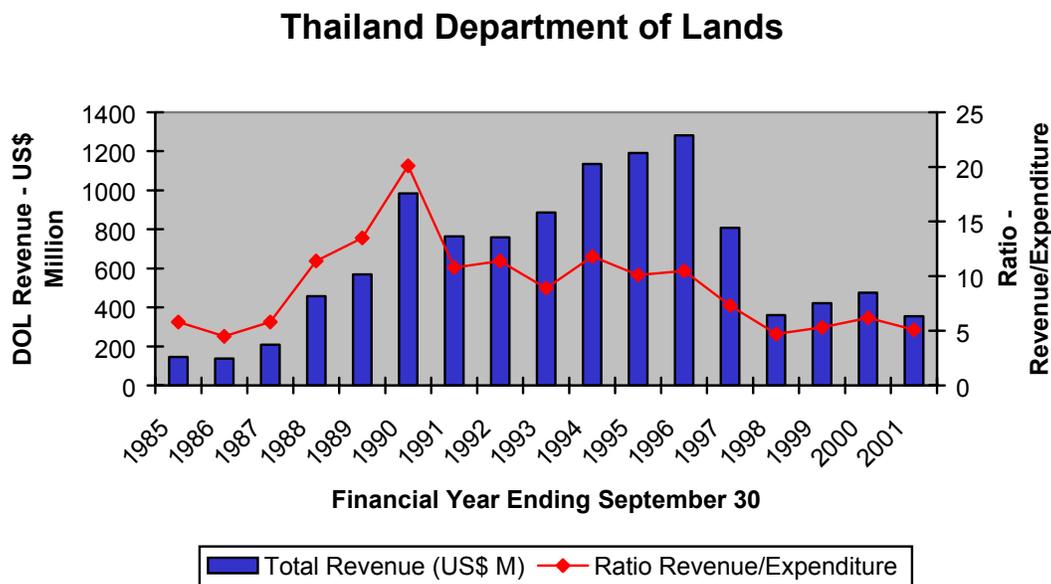
In the literature three main economic arguments are presented to support rural land registration (Atwood, 1990, page 661):

- land titling or registration will increase productivity through increasing factor mobility (development of efficient land markets)
- land titling will increase access to institutional credit
- land titling will encourage on-farm investments.

As noted by Wachter and English (1992) it is generally accepted that an efficient, formal land titles system is an essential prerequisite for the operation of a commercial land market.

Land titling can lead to substantial increases in government revenue. This has occurred in Thailand during the implementation of the 20-year Thailand Land Titling Project (TLTP) which commenced in late 1984 (see Figure 1).

Figure 1 - Revenue Raised by Thai Department of Lands (1985 to 2001)



Source: LEI, Contextual Information for Thailand, 2002.

The individual landholder benefits economically through the increased tenure security provided by land titling. This benefit is often reflected in increased land prices. Socio-economic studies conducted as part of the Thailand Land Titling Project (Center for Applied Economics Research, 1993) have demonstrated that there is a strong relationship between land titles and land prices. Dowell and Leaf (1989), after interviewing land brokers in 128 districts in Jakarta (Indonesia), determined that registered land in Jakarta was up to 73 percent more valuable than similar land held by a weak claim.

Secure tenure also can lead to a reduction in land disputes, which is to the benefit of the land holder. On the other hand, if the land registration system is in conflict with local custom, land titling can give rise to social tension.

3. International Experience with Land Administration Pilots

Programs to strengthen land administration (“land administration projects”) can take many decades to complete. A phased approach is commonly adopted, often with an initial emphasis on developing efficient and effective procedures through a series of pilots. Pilot activity is an important strategy to build capacity by developing and field testing efficient procedures, and building stakeholder support. To gain support from stakeholders, particularly where there is not a strong policy and legal framework, one strategy is to select pilot areas where local conditions are already conducive to success. This may mean confining initial activity to areas where there is already support from key champions in government and innovative and motivated agency staff. It may also mean confining initial activity to a sub-set of the problems being faced by the land administration system.

This section of the paper draws on over 20 years personal experience on land administration projects and several key references (Burns et al 2003, Burns et al 1996, Wachter and English 1992). As India takes steps to improve the country’s land administration systems, some key lessons from this international experience can be drawn, including:

- the importance of commitment to reform;
- recognition that the emphasis is on human resources and not technology;
- recognition that technology provides the tools not the standards;
- the importance of adopting a client service and production orientation;
- the fact that it is better to have complete cover to lesser standard/accuracy than partial cover to higher standard/accuracy;
- recognition that a successful approach in developing the legal framework can be working from the part to the whole; and
- the importance of strong public support.

These lessons are briefly discussed below.

3.1 Importance of Commitment to Reform

A land administration project can involve considerable resources over a long period of time. The TLTP, which commenced in 1984, was implemented in 4 phases over a

20-year period at a cost of over US\$500 million. At various times during the project the Department of Lands (DOL) had in excess of 5,000 personnel deployed directly or indirectly on the project. The Land Administration Project in Indonesia (ILAP), which commenced in 1992, was planned as the first phase in a 25 year program to register all rights in non-forest land in Indonesia.

Success in land administration projects of this scale requires an environment where there is a commitment to change at the highest level. A clear and consistent policy and legal framework is important to guide and sustain this change. This framework must provide the economic as well as the social rationale for reform. Thailand has a strong policy, legal and institutional framework (at least for the population that occupy land deemed non-forest land). This is not the case in many countries and many projects require significant effort to develop and implement a clear, consistent and coherent policy and legal framework. This is the case in current projects in Cambodia, the Philippines, Indonesia and Ghana.

A fundamental policy issue is the requirements necessary to establish a right to land, and in particular the balance between long term peaceful occupation and a right on the basis of documentary evidence. In Indonesia there has been an historical requirement for documentary proof, but this is recognised as unreasonable in many situations, particularly in cases where occupants are less educated. In many cases rights are now linked to continued personal use, or use by a predecessor. Changes in regulations implemented under the Land Administration Project provide for documentary evidence in the form of a declaration from reliable witnesses as to the claimants right to land and acceptance of that right by the community. The approach in Thailand is a more pragmatic one and the Land Code⁴ states *'in the absence of such notice of possession, that person shall still be deemed to desire to acquire the rights to such land if he or his representative escorts the official to make the cadastral survey on the day and at the time specified by the official.'*⁵ In both these cases qualified titles may be issued upon proof of long term peaceful occupation of the land. Both of these approaches place strong reliance on the active participation by the community in the systematic adjudication process.

At the institutional level the land administration environment is invariably one of overlapping responsibilities and duplication. In Indonesia at least seven agencies in addition to the National Land Agency (BPN) have been identified as having some land related function. In the Philippines there are 19 agencies that have a role in land administration with much overlap in responsibilities. Four agencies have the authority to issue titles, and 2 have the authority to approve survey plans. In Thailand the disputes between DOL and the Royal Forest Department over jurisdictional boundaries have effectively quarantined large areas from land titling - much of which has been peacefully settled for several generations.

One strategy put forward in many jurisdictions to address these problems is to adopt consistent standards for records management and data models. Another is to implement clear coordination guidelines supported by memoranda of agreement between the various institutions. While these work in theory, in practice the experience in the developing world is that duplication of effort and inconsistencies

⁴ Section 27 (tri)

⁵ With the adjudication process being conducted in a public manner, with local officials as witnesses and the adjudication results being publicly displayed and subject to appeal.

are best addressed by institutional reorganisation and bringing the core functions together in one organisation. Institutional change must be stimulated by a mandate from government at the highest levels to achieve the national objectives. Unless these objectives are clearly set out and the roles played by responsible agencies are unambiguously assigned there is little imperative for reform at the institutional level.

3.2 Critical Emphasis Human Resources not Technology

The application of technology is attractive to developing countries seeking to address land administration problems and many development assistance programs are based on the application of ready made technological solutions. It is tempting for example to apply information technology to the land records, but experience in most developing countries is that the data to be converted is unreliable and the existing systems for gathering and maintaining the records are ineffective. No amount of computerisation will help overcome these basic problems. Moreover developing countries often have a limited base of skilled resources. This is certainly the case in Lao PDR, where the total staff involved in land administration throughout the country at all levels of Government is 601, with very few having any training or education in land administration. The initial emphasis must therefore be on expanding this skill base, with a particular emphasis on the development of future leaders.

At the start of the project in Thailand, the DOL did not have a division responsible for training. The project itself did not provide assistance directly in this area until the second phase and then only on a limited basis. Considerable technological change was successfully introduced to the surveying and mapping activities needed to accelerate the issuance of titles. Overseas training was built around the traditional surveying course offered by Universities with courses in geodetic science being a favourite. The local university course for survey engineers was modified to include cadastral studies for land titling, but the bulk of the students sponsored by the project went straight into the private sector. The experience showed clearly that land titling was not sustainable unless the technological changes introduced in the early development stages were matched by capacity development of the people who must ultimately manage this technological change.

On ILAP a high priority was given to human resources development (HRD). The scholarships for overseas study (40 masters degrees) emphasise development of management skills and the majority of staff are attending a course especially tailored to meet the land administration needs of a developing country (see Forster, Trinder and Nettle, 1996) rather than one selected from the traditional offerings. Training in management and administration disciplines may appear less attractive in developing communities, but these skills are always in short supply in large undertakings like land titling.

In Lao PDR the education level is low and with the development of the Lao Land Titling Project an innovative approach was required to build up human resource capacity to support the project. An In-Country Course in Surveying and Land Administration was developed through the Lao Polytechnic School. An Australian tertiary institution was contracted to deliver a two year education program to 26 selected students, all of whom were involved in the project. The course was divided into 13 modules, covering amongst other things topics in law, surveying, systematic registration, maths, project management and customer relations. This course has now been developed into a three year High Diploma in Surveying and Land

Administration, run by the Polytechnic School. The approach taken has been recognised as a very acceptable model for implementing in developing countries.

Also in Laos a further innovation was adopted in the delivery of management training. The Management School of the National University of Laos was contracted to provide a series of management courses to senior government officials associated with the project, with courses developed to suit the different management levels required to support the project.

Attention to staff rewards and incentives is important. Systematic land titling can involve staff spending long periods in the field, working from temporary field offices, over many years. In Thailand staff are assigned to the field for periods of up to 10 months and many have been involved for more than 5 years. The work is production oriented, unlike the usual land office situation, so field staff are required to work to stricter time constraints. There is a higher level of responsibility and risk in the work - in Thailand staff are personally responsible for their work. Staff will only do this if they are adequately rewarded.

The setting of reward systems is not a simple process, as there are usually stringent civil service requirements. At the start of the TLTP the field allowances were set at a level of approximately twice the base salaries and there was no trouble in attracting field staff. Over time the allowances have become less attractive, contributing to the current difficulties in staffing field teams.

It is important that field allowances are not too high or there can be an impact on the normal or routine activities in the agency.

In Indonesia, BPN has adopted an innovative approach to the field allowances. Allowances are budgeted on the basis of the appropriate Government daily rates, but using the production targets, these rates are converted to a rate per parcel. Field staff are then paid their allowances on the basis of output and this reinforces the production orientation. In Lao PDR the field adjudication staff receive an additional payment above their salary, based on two components: a daily allowance and a bonus per completed parcel. Office staff responsible for the first registration receive a bonus per parcel, without a daily allowance.

If field staff are not adequately rewarded there will be repercussions either in the quantity or quality of their work, or in the manner in which they seek to establish an informal reward system. These factors can seriously impact on the land titling program and how it is perceived by land office staff, land holders and the general public.

3.3 Technology Provides the Tools not the Standards

Technology is a useful tool in improving land administration systems but there are many situations where technology has been pushed on the basis of capability rather than need, and this has put projects at risk. One example is proposals in the mid 1980s to digitise and integrate digital topographic data for all of Papua New Guinea (PNG) in a GIS being established to computerise leases. This is despite the fact that the PNG government had great difficulty in maintaining records for the leases themselves which only covered the 3% of the country that had been alienated from customary tenure. Another example is proposals in the mid-1990s to establish a 1 millimetre accurate cadastral GIS over the whole of Perú. This is despite the fact that the network of public registries was full of registered documents setting out legal

rights over often very poorly described parcels of land and the primary geodetic network in the country would have trouble supporting a 1 metre GIS of the whole country. There are also many examples of technology gathering dust because the agency lacks the budget for materials and maintenance. It is important to remember that *[a]ll the photographs and computer inventories in the world cannot tell anyone what local rules enforce rights or what networks of relationships sustain them.*' (de Soto 2000:202).

Technology has a vital role to play in land titling but it has to be looked at within the overall objective of establishing a land administration system. Decisions on technology made in land titling can have a major impact on the successful integration of the records into the land administration system. Survey and mapping is a major cost/resource component both in first registration and in the on-going maintenance of the land administration system.

It is important to recognise that not all land has the same value and a range in survey accuracies is warranted. One of the strengths of the Thai land administration system is the provision for a range in survey methodologies. There are two orders of surveys. First order surveys, using electronic total-stations connecting to cadastral control networks are used in the cities and many urban areas. In less developed areas, second order surveys are used. These involve picking up cadastral information either as square offsets from temporary cadastral traverses, or by identifying cadastral boundaries on large-scale photomaps. Second class surveys involve significantly less cost than first order surveys and require significantly less staff training. These surveys have been a major feature in the titling effort in Thailand.

These options are not available in all countries. In the Philippines survey standards are specified to a high accuracy and there is little flexibility in methodology. These surveys are often undertaken by the private sector and the cost of the surveys is passed on to land owners. However, the quality of surveys is not well enforced and many surveys do not comply with the standards. The high cost of survey has been raised as an issue in rural areas in the social assessment for the Land Administration and Management Project in the Philippines.

High technology equipment such as satellite positioning systems, automated mapping systems and analytical stereoplotters have been successfully introduced on projects. But in Thailand and Indonesia, this technology was only introduced after a careful assessment of the overall management, environment and especially local work practices. Where it could be shown that new technology could overcome a production bottle-neck, and that the new technology was sustainable, then it was carefully integrated into the agency. Associated with this introduction was a thoroughly planned program of in-country and overseas training. However, of equal significance to the overall success of the projects has been the review of existing manual procedures such as the simplification of a dealings form, or the streamlining of an administrative procedure.

3.4 Need to Adopt a Production Orientation

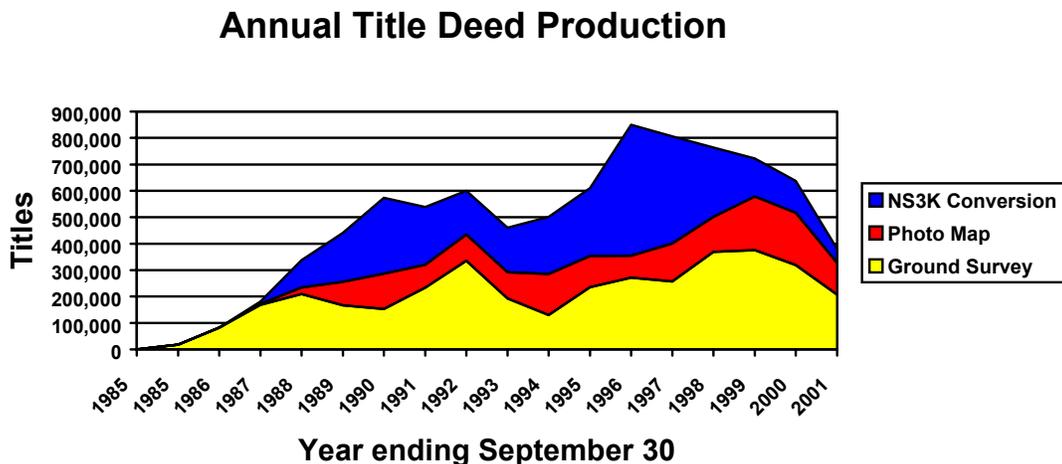
The processing of sporadic registration requests by individuals is usually conducted in a service environment. Land titling or systematic registration of rights in land on the other hand is a production process that requires a series of coordinated actions to be undertaken, either sequentially or in parallel. Typical activities include: geodetic

control; base mapping; community consultation; demarcation of boundaries; adjudication of rights; public display and processing of disputes; preparation of records; distribution of titles; and the transfer and registration of records in land offices. This pipeline of activities contains events which may take some years to complete before field work can commence. Field teams must be formed, private sector input procured (in some cases), and staff trained and deployed. All this requires coordination and a production approach to the task.

The foundation for a production activity is efficient, streamlined procedures. Pilot programs can be used to identify policy implications of a systematic registration program and identify mechanisms (decrees, declarations, orders etc) needed to facilitate delegation with appropriate checks and balances. Small pilot projects can be used to prepare and test the manual of operations. They are an adjunct to delegation and guide field staff in the rules applying to evidence and the procedures to be followed in the field when mediating disputes. However, with pilot activity it is important that the activity has clearly defined outcomes and timeframes. Without clear outcomes and timeframes there is the real risk of never-ending pilot activity which will only disillusion key stakeholders.

A key element in a production process is the setting of output targets. The target is a fine balance between what is realistically achievable in the environment yet ensures that output is maximised since staff will tend to work to the target, not to capacity. Small changes in production targets can have significant impact on staffing requirements and/or the overall duration of the project. An important factor in the marked increase in TLTP output in 1996 (see Figure 2) was an increase in production targets. These increased targets were supported by changed management arrangements, simplified certification and title distribution procedures, more temporary field staff, but with no significant change in the overall field process.

Figure 2 - Annual Title Production in Thailand (1984-2001)



Source: LEI, Contextual Information for Thailand, 2002.

It is important that there is quality control and monitoring to ensure that field staff are not by-passing areas of difficulty or areas which do not easily contribute to achieving the target outputs.

The field activity in Thailand works so well because there are well established standards for adjudication output per field team per month. These output targets are accepted by the staff, the Department and the RTG Budget Bureau. Funds are provided on the basis of planned output, with a degree of flexibility in how the funds are applied.

3.5 Better to have Complete Cover to Lesser Standard/Accuracy than Partial Cover to Higher Standard/Accuracy

Land administration projects can involve long time horizons. In Australia, where a voluntary approach to conversion from deeds to title registration was initially adopted, the conversion process took over 100 years and was only completed when a systematic approach was adopted. As noted above (page 4) major land titling projects have been implemented in Thailand and Indonesia with timeframes of 20 and 25 years respectively and with budgets well in excess of US\$100 million.

Land records systems have a strong legal and social basis and typically operate in a complex institutional environment. Often, in an endeavour to introduce new technology, existing procedures and the reasons behind them can be overlooked. Land administration is strongly influenced by the bureaucratic, social and cultural environment, and overlooking existing practices often leads to the failure of the proposed changes.

One of the major objectives of the TLTP has been the production of a new series of large scale cadastral maps in urban areas. These maps over Bangkok are now complete and in use, however the new maps were not introduced without difficulty. One of the main indices in a land office is the map parcel number and new maps meant new indices. The previous system was servicing the demands of the office without the new maps. Most urban land offices are under-staffed and very busy, and initially no funds or additional resources were allocated to the introduction of the new maps. It is not surprising that until funds and resources were provided, the new maps were little used in the land offices.

A more serious failure was the impact on land administration of the World Bank-funded 100-Cities project implemented in the late 1980s. This project had the objective of producing large-scale mapping of major urban areas in Indonesia to support a range of users including local government and land offices. However the project focussed on covering 100 cities, rather than the complete coverage of any one city. The land administration system in Indonesia at that time operated without maps. The new mapping only covered part of the jurisdiction in any land office. There was no provision for support in the land office for the introduction of new processes linked to the mapping. I can recall visiting a land office in Semarang in Central Java in the mid 1990's and the 100-city mapping was in a corner of the office unused – still in the wrapped bundle that had been delivered some years previously.

In an environment where many developing land administration systems struggle to implement one land administration system, adopting new technology with high accuracy standards can be a high risk strategy. This particularly applies to survey and mapping technology which can be a major cost in any system and can require significant technical resources to implement and maintain. Virtually every country has initially implemented graphical mapping systems. Graphical mapping systems were initially implemented in England, Switzerland and Sweden. In Australia, which has traditionally had a system of high-accuracy isolated surveys, when a system of

cadastral maps was introduced about 20-30 years ago in most states, graphical techniques were adopted in producing the initial series of cadastral maps. In New South Wales cadastral maps were generated from the best available maps which ranged in scale from 1/4,000 to 1/100,000. Only recently have these developed countries looked at moving to digital mapping with survey accuracy, but only on an incremental basis. Why then do so many developed countries, with much more serious problems with land records and more limited resources, seek to go straight to a survey-accurate digital cadastre?

3.6 Work from the Part to the Whole in Developing Legal Framework

A basic principle in surveying is to work from the whole to the part. However in developing the policy and legal framework, the reverse can almost be true - it is better to work from the part to the whole. This is not to say that the work can be undertaken without a basic policy and legal framework, but in the early stages of the development of a systematic registration capability, many of the difficulties and problems will not be apparent until the procedure is tested in the field and feed-back sought from the participants.

It can take a considerable time to develop and implement high level land law. In Indonesia it took a concentrated effort over 12 years to write the Basic Agrarian Law (BAL) and the major regulations that underpin it, (particularly Government Regulation PP10/1961, which sets out the principles for the registration system and the systematic registration of rights in land).

In developing the pilots in ILAP, BPN had to work within the constraints of BAL and PP10/1961, but as a streamlined systematic registration process was developed, this process was regulated by a lower level instrument, a Ministerial Decree. After the first pilot was completed, the process was reviewed and amended and a new Ministerial Decree issued prior to the second pilot. The second pilot largely confirmed the new process.

In parallel with the first two pilots, over the first two years of the project, a large team was working to revise PP10/1961. This process involved substantial work within BPN, followed by inter-departmental seminars, before the draft regulation could be submitted to the Secretary of Cabinet, the step prior to authorisation by the President of the Republic. The lessons learnt in the pilot and the Ministerial Decrees assisted in the revision of PP10/1961.

A considerable delay in the project would have resulted had BPN waited for a revised PP10/1961, and the revision would have also been completed without the experience of the first two pilot studies. Although the Ministerial Decree was prepared solely to support the pilot study in West Java, the improvements in the process were such that they could be applied to other projects elsewhere in Indonesia.

This process of a lower level instrument, pilot, revision of the instrument, followed by a second pilot has been repeated in Lao PDR. In this case the lower level instrument is a Provisional Ministerial Decree, prepared specifically to support pilot activity in the Vientiane Prefecture. The decree was revised for subsequent pilot land titling activity and provided a practical basis to the development of higher level legislative instruments.

In a situation where land policy and land law is unclear, the practice of implementing a low level instrument has proved successful in quickly providing a legal basis for pilot activity. This pilot activity then enables land policy and the procedures to be tested and a comprehensive law developed.

In the early stages of a project it is important to reassure policy makers that land titling is viable. This has been important in Lao PDR where the rights to land are complicated by factors such as the unclear rights to the land of Lao nationals who fled the country after the change of administration in 1975. To get results quickly it is best to identify as clearly as possible what features of the land titling process are to be tested and to geographically confine the initial pilot activity.

In many countries land rights are politically very sensitive and it is often best to begin reforms in areas where there is already acceptance of and demand for more secure, formal tenure. This has been the case in Samoa where the SIAMII (Samoa Second Infrastructure and Asset Management Project) has facilitated the introduction of a Torrens Title system, but with restricted initial application to land which is already classified as freehold or public land, approximately 20 per cent of the country. While the proposed introduction of the Torrens system only applies to 20 percent of the country the legislation has been developed in close coordination with the Land and Titles Court (exclusively responsible for customary land). This will facilitate the potential for registration of customary land if it is deemed to be economically and socially desirable at a later date. The staged approach to developing Samoa's legal framework has meant that reforms can be applied far more quickly and in areas where the demand is greatest without adverse effect on the traditional and customary forms of tenure.

An important point to remember is the fact that not all problems need be solved at once. The '80-20' rule – that is eighty percent of the problem can be solved with 20 percent of the effort – is an important rule to remember. It would be prohibitive, both in terms of cost and time, for a systematic land titling project to undertake surveys of sufficient accuracy to solve all boundary disputes. However, low cost, quick survey can be undertaken that will address most boundary identification requirements. If parties subsequently have a dispute over the location of a boundary they can seek redress by hiring survey experts or making application to the courts at their cost. A systematic land titling program may also not record all rights. For example, in Thailand the land administration system has provision to record easements.⁶ However the systematic land titling project does not pick up information on easements. If someone subsequently wants to have an easement recorded they must make an individual application in a land office.

3.7 Strong Public Support is Necessary

A land titling project is initiated by the State. The State decides the procedure that is to be followed, the schedule of the activity and the roles and responsibilities of the various participants. However, land titling will only successfully result in a sustainable land administration system if the project has strong public support.

In Thailand, Indonesia and Lao PDR land titling have been undertaken in a systematic, publicly transparent manner in a whole jurisdiction at a local level. The process is public, open to all, actively involves village officials, and the results of the

⁶ A right held by one person to make specific, limited use of land owned by another person.

adjudication are publicly displayed. Formal public ceremonies are held to distribute certificates to the community.

There are few countries where the community does not look to the authorities to resolve issues concerning rights to land. However, in many cases it is necessary for the Government to actively convince the general public of the benefit of participating in a land titling program. In the first pilot in Indonesia, a few land holders refused to participate, one reputedly stating he did not trust anything from the Government which was so cheap! This reflects the general lack of knowledge in the community, due in large part to BPN's history of not being able to provide efficient, low cost services to the general public. In other countries the concern of land owners about taxation is an issue that needs to be addressed.

Usually an active program of Customer Relations and Services is required. This program needs to communicate to the public the benefits of land registration in general, and land titling in detail as well as establish procedures for the agency and the staff in the agency to respond to the requirements of the general public. Essential elements in a successful communications program are clear promises on outcomes, cost and schedule.

The Government also needs to ensure that any impediments or disincentives to public participation are avoided. The fee system is a major potential disincentive and the fee schedule needs to be simple and low. In Thailand the fee is about 100 baht (about US\$3) per title deed and is collected on distribution of the certificates, so that participation in the field adjudication is not hampered by the need to collect fees. It should be noted that this fee is lower than the cost of the service (about US\$30-40/title), so the Government is, in effect, providing a subsidy to land owners. In Indonesia the maximum fee has been set at 25,000 rupiah (about US\$10 at the time) although it has been lower in practice.

4. Role of the Private Sector

'It is a general trend in Europe and worldwide that the private sector has increasingly been invited to take part in different activities in the field of land cadastre, land registry, land consolidation and provision of land information. The aim is to bring together the experience and skills of different partners in a way that guarantees maximum benefit with the best practical and financial outcomes.' (UN ECE, 2005)

The rapid development and increase in access to information technology has been a driver in fundamental changes in the way that governments provide services to citizens. In response many governments have attempted to tap the resources of the private sector as a means to reduce bureaucracy and introduce competition in service delivery.

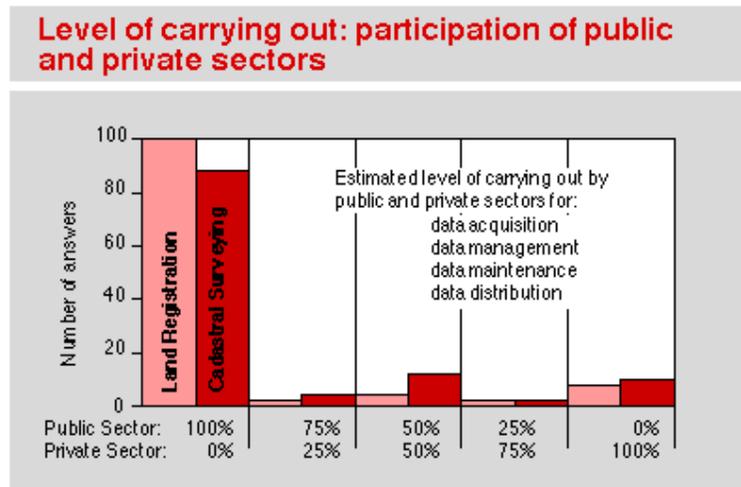
4.1 Public vs. Private Service Delivery

In a limited number of jurisdictions the private sector has been formally brought in as a land administration service provider. In Greece the system of deeds registration functions separately from the cadastre in regional and district offices which are operated independently on a private sector basis by legally qualified land registrars. A key strategy of the proposed EU supported Hellenic Cadastre Project was the progressive transition of these deeds registry offices into *Cadastral Offices* with

responsibility for all aspects of the newly established parcel based system of title registration.

However, in most jurisdictions land administration is predominantly a public sector role. This emphasis is illustrated in Figure 3 below, which was prepared as a result of a questionnaire completed by 31 jurisdictions as part of the preparation of the FIG vision for Cadastre 2014 (Kaufmann and Steudler, 1998).

Figure 3 - Participation of Public and Private Sectors (from Kaufmann and Steudler, 1998).



In many countries a range of issues arise when using public sector resources to implement land administration projects. These include limited incentives/rewards, lack of skills and limited experience with new technology, and a limited ability by government to adequately fund land administration services.

One strategy to address these problems is to set up the registration system as a government trading enterprise. This strategy has been implemented in England, Hong Kong and the Australian State of New South Wales, all of which operate off-budget.

Another variant is to establish semi-autonomous agencies that operate under similar employment conditions to those of private sector. This approach has been implemented in Perú and Greece, with success in the former and failure in the later country.

Another strategy to address the public-sector issues listed above is to involve the private sector in service delivery through a formal public-private partnership arrangement. In 1991 the Ontario provincial government reached agreement with Teranet Inc to undertake a major revamp of the land registry system. Under the agreement Teranet Inc was equally owned by the province of Ontario and a private company Teramira Holdings Inc, with limits placed on individual shareholdings in Teramira Holdings Inc.

In the 1990s New Zealand and the Australian state of Victoria attempted to enter into a partnership with the private sector to enhance their respective land administration systems. Both attempts failed, due largely to an inability to reach agreement on fee structures, revenue projections and the costs to be borne by the private partners. The Philippines is currently implementing a major upgrade of the land registration

system under a Build-Own-Operate (BOO) agreement with a private sector consortium. This project, which commenced in late 2000/early 2001, is seriously behind schedule and is faced with a number of difficulties including the inability to agree on arrangements for government access to land records and an acceptable fee structure.

Another model for involving the private sector is to have the private sector provide a network of 'front-offices' that feed information back into and/or access information from a government-run central land registration 'back-office'. This has been discussed in a number of jurisdictions, with options for the private sector partner being an organisation with an established network of offices, such as a private bank or utility company. Such an arrangement has many potential advantages, including minimal public sector staff, most of whom would be specialists focussed on the integrity of the registration system itself, fewer levels of checking and administration and increased control over rent-seeking. I am not aware of any jurisdiction that has implemented this model.

4.2 Outsourced Services

Even where land administration services are provided by public sector agencies, as they are in most countries, the private sector is usually engaged to provide specific services. In many countries the management of information technology facilities and software development are functions that are typically contracted out to the private sector. This is also happening in India. In Karnataka the private sector is managing the Bhoomi kiosks under service level agreements.

Because systematic land titling is a one-time effort with a production orientation many projects outsource some or all the effort to the private sector. In Indonesia and the Philippines the survey and mapping task is typically contracted to the private sector with government officials undertaking the task of adjudication of rights. In many countries the whole process has been outsourced (for example, on projects in many countries in Latin America, Eastern Europe and Central Asia).

4.3 Public Notaries and Conveyancers

In some countries public notaries and licensed conveyancers take responsibility for the correct identification of parties to the transaction and in some cases for the validity of a transaction. This is common in jurisdictions with a registration of deeds system. Van der Molen (2002) explains this relationship in the Netherlands where *"traditionally there is a strong link with the notary, who is a free professional appointed by the Crown, exclusively entitled to draw up authentic deeds. Such a deed is a compulsory requirement for the legitimate creation, transfer and deletion of rights to land within a closed system of rights 'in rem'. Complementary, the execution of the legal effect is impossible without registration. The Agency and the notaries therefore form a strong partnership, to provide land tenure security, and security of transactions in the real estate market."*

Technology is changing the providing opportunities to broaden this role. In New Zealand, with the introduction of the electronic conveyancing system e-dealing in the Landonline system, private sector solicitors acting for the parties to a dealing in rights in property when using e-dealing take responsibility for the proof of identity and the electronic update of the registration database (New Zealand Law Society, 2004).

However public notaries can also be a powerful force and a reluctant participant in any initiative to simplify procedures and reduce transaction costs. In Perú, for example, to overcome a range of problems including high notarial charges and resistance to using simplified forms, legislation was introduced to broaden the categories of persons able to prepare and witness transactions.

4.4 Licensed Surveyors

Many jurisdictions have licensed private sector surveyors because public-sector surveyors can not service market demand. The realisation of the need for private sector input for survey and mapping occurred early in Australia, as noted by Enemark, Williamson and Wallace (2005). *'The colonies, for over a hundred years, had insufficient skilled professionals (surveyors, lawyers and administrators) to service needs. After an initial regulation system was established in the 1860's [in Victoria], a gradual improvement in surveying was slowly achieved. This licensing and regulation system for surveyors and control over cadastral surveying survived for the next 100 years. ... Reliable mapping and surveying were assisted by creation of legal standards for surveying, a permanent survey mark network throughout Melbourne, a better licensing system and the audit of surveys by surveyors employed by the Titles Office.'*

The tasks that private surveyors can perform are usually clearly specified. The division of responsibilities (from Thomas, 2002) are set out in Table 1.

Table 1 - Role of Private Surveyors in Germany (from Thomas 2002).

Partners	Private			Public
	Engineering Company: Engineer/ Land Surveyor	Licensed Land Surveyor (in accredited competency)	Licensed Land Surveyor with temporary sovereign competency	State Authorities
Administrative assistance	X	X	X	X
Technical assistance and/or technical preparatory work in the field of public right (i.e. state survey)		X	X	X
Simple state acts in the field of public right (i.e. cadastre: notification about marking)		X	X	X
State acts (i.e. land consolidation: publication of land consolidation plans)			X	X
State acts and core state competency				X

Typically licensed surveyors are administered by a Board of Surveyors. The functions of the Board of Surveying and Spatial Information in New South Wales in Australia are:⁷

⁷ From <http://www.bossi.nsw.gov.au/public/>

- The maintenance of the Register of Surveyors;
- The granting of registration to surveyors under the provisions of the Surveying Act 2002;
- The assessment of overseas and interstate academic qualifications for persons wishing to practice in New South Wales;
- The maintenance of acceptable levels of assessment of the ability and competence of Surveyors Assistants (previously Candidates) striving for Registration;
- Dealing with the conduct of a Registered Surveyor where a complaint is received; and
- Dealing with general enquiries.

Typically the Board of Surveyors is a Board run by the Government with representatives from industry and academe. This is the case, for example in most states in Australia where the Surveyor General is the Chair. The exception is South Australia, where the Board is run by the professional institution, the local division of the Institution of Surveyors.

Surveyors can however represent a particularly strong vested interest, often pushing for high standards for survey and mapping and often with limited policing of these standards. As the cost of survey and mapping can be a major element in any land administration system this is a concern, particularly as most developing countries have great difficulty in supplying the human and other resources necessary to support an over-specified survey and mapping requirement. The survey lobby is particularly strong in a number of countries, including Malaysia, the Philippines, and Greece. In the Philippines, where the cost of survey is passed onto the public, participants in a recent social assessment undertaken for the Land Administration and Management Project have expressed strong concerns about the cost.

5. Key Issues for India

Other papers at this workshop will review the current situation with land records systems in India. Many of the participants will be intimately aware of the situation in their states. A detailed review of the situation is therefore not appropriate for this paper. However, it is worthwhile briefly reviewing some of the major issues, based on the author's experience on the sub-continent in Karnataka, Maharashtra and Andhra Pradesh in India and Punjab Province in Pakistan.

5.1 Current Situation

Multiple Systems/Agencies. In most states there are multiple agencies and multiple systems. Typically a Survey, Settlements and Land Records Department prepares and maintains survey and mapping records and property cards where they exist, a Revenue Department prepares and maintains the record of rights and a Department of Registration and Stamps registers and maintains records on land transactions. Not one of these systems is complete or comprehensive or definitive. The record of rights is largely relevant only to agricultural land. In the case of urban land the property card system, if it exists, only covers part of the urban area. Outside of these areas the main property record in urban areas is the Khata kept by the

relevant Corporation/Municipal/Panchayat office but this is only a record of taxpayers and does not profess to represent ownership. The Registration system is intended to place on public record transactions with land in all areas but does not apply to certain matters affecting land ownership such as inheritance, transfers by operation of law, Court decrees, etc., although these matters can be recorded in the record of rights. This combination of systems is inefficient to operate and maintain and complex to use.

In the case of urban and non-agricultural land, after registration of a transaction resulting in change of ownership, it is necessary for the owner to make application to the Corporation/Municipal/Panchayat office, together with a copy of the deed in order to update the Khata. As a result Khata records are not always complete and up-to-date. The overall result is that there is considerable uncertainty in rights and government records have limited effect in clearing up this uncertainty.

Inconclusive Nature of Land Records and Registration. The Land Revenue Act typically states that *'an entry in the Record of Rights and a certified entry in the Register of Mutations shall be presumed to be true until the contrary is proved or a new entry is lawfully substituted therefore'*. It has been stated that *'As regards Indian law as to title to land, the statute law of India as in force at present, broadly speaking, does not profess to provide for a state certification of title to land under the aegis of a public authority. No doubt, regarding agricultural land, the record-of-rights in land and similar documents, by virtue of provisions in the land laws of various states, create a structure, at least in theory, of permanent records of transactions concerning such land. But the entries in such records are not conclusive even though they may be relevant in a court of law and may be given presumptive status by land laws'* (Wadhwa, 1989). The Supreme Court of India has held that: *'It is firmly established that the revenue records are not documents of title...'*⁸

Several Indian states have computerised their land records (examples of systems include Bhoomi in Karnataka and Mahabhulekh in Maharashtra). Notwithstanding the improvements, these systems are essentially a computerisation of a very old land revenue system. In an ideal situation it would have been desirable to review and re-engineer the basic land administration systems prior to computerisation, but this would have delayed the much needed service delivery improvements. However, the opportunity should now be taken to undertake this task and ensure that the computerised land records systems, or any redevelopment of them, meet the future needs of a modern society. The issues that need to be addressed include:

- the appropriateness of existing Land Revenue procedures (for example, the process of handling mutations)
- the data that the system should hold. Does the revenue collected from agricultural land justify continuing the maintenance of the existing system and the information contained in it?
- the extent of the system. Should the computerised land records system be an information system for all land in the State?

⁸ *Corporation of the City of Bangalore v M Papaiah and Another*, Judgments Today, 1989 (3) SC 294, at 296.

- the status of the information in the system. Should all or some of the information be regarded as conclusive in the eyes of the law and possibly have the status of information guaranteed by the State?

By law the registration of a transaction is compulsory (except in certain cases such as inheritance, transfers by operation of law, Court decrees, etc.). Registration does not include the adjudication of rights and the resolution of disputes and does not ensure the validity of a transaction. Registration serves only to provide evidentiary value of a document in a court of law and, in the case of compulsory registration, registered instruments have priority over unregistered ones. It is the duty of the purchaser to investigate the ownership claims of the seller.

Poor Spatial Framework. The following major issues arise in reviewing the spatial framework for the record of rights:

- the British introduced simple and quick methods to measure land holdings. These methods have been continued after independence. The primary record for the settlement surveys is the individual parcel survey records (typically the tippan/tippon/FMB, but in some cases a village map). There is no mathematically rigorous method to compile a cadastral map from the tippan/tippon/FMB record;
- the tippan/tippon/FMB record is fragile and some records have been lost;
- non-standard, manual drafting techniques were used to graphically compile village maps using the information in the tippan/tippon/FMB records;
- the village maps are updated infrequently (no more frequently than every 10-30 years) and any subdivisions happening in the interim are usually not charted;
- there are typically long delays in surveys for sub-divisions – sometimes decades and mutations are being recorded in the record of rights without survey;
- largely due to inheritance, land holdings are increasingly being fragmented. Consolidation can be implemented in re-survey, but few re-surveys have been undertaken. The result is that it is common for a farmer's landholding is recorded on several (many) record of rights;
- the settlement surveys and the village maps are not geo-referenced.

These issues create a number of problems. Perhaps the major problem is the lack of a clear, unambiguous spatial reference for the record of rights system. The tippan/tippon/FMB record is the primary spatial reference for the record of rights in many states. The tippan records for less than 10% of the villages in Karnataka have been archived to microfilm. If the tippan/tippon/FMB record is lost, there will be increased uncertainty over rights, leading to an increased number of disputes and higher costs by the state and individuals in resolving these disputes. In Andhra Pradesh it is estimated that 29% of village maps, 21% of tippons and 13% of FMBs have been lost.

The village maps comprise a spatial framework to validate records. These maps cannot fulfil this function if they are inaccurate and not up-to-date and in this form the maps cannot be readily accessed by other users. The lack of geo-referencing also limits the usefulness of the maps as a core reference for integration with other

datasets such as topographic maps, demographic information and satellite data. Without the spatial framework, other more costly and time-consuming options, such as re-survey, will need to be explored in establishing a conclusive registration system.

The sub-registry offices (SROs) look after document registration only. There are no cadastral maps kept in the sub-registries. Furthermore, the description of the land contained in a deed may leave a lot to be desired in terms of providing an accurate location of the property, particularly in urban areas. Inspection of registered deeds in sub-registries in urban areas in some states has disclosed that descriptions are often vague and imprecise. Thus the system is one which goes to a lot of trouble to ensure the correct identification of the parties to a deed, but does little to facilitate the location of the land the subject of a deed or to ensure the correct identification of the land.

Limited Information in Urban Areas. As noted earlier, there is a lack of both map and textual information in urban areas. Where they have been implemented, City Survey Plans and associated Property Cards only cover parts of urban centres. This information is not up-to-date and does not reflect the reality on the ground. The municipal property tax registers (Khata) do not have a spatial component and are incomplete. There are frequently no large-scale, up-to-date maps of urban areas, both for the major urban centres and for non-agriculture land in rural areas. There is therefore currently limited information that can be used to populate a computerised land records system with urban and non-agriculture land.

5.2 Key Issues

The following key issues are put forward in the light of the international experience set out above in section 3 and the overview of the current situation in India in section 4.1.

The Need for a Clear Definition of Objectives and Timeframes. There has been no shortage of projects to improve land records in India. In Karnataka, for example, there has been a project to computerise land records. This project resulted in Bhoomi. The registration system has been computerised, resulting in KAVERI. There has been a project to computerise tippan records in 2 of the 177 Taluks in the state. There has been a long-term project to re-survey 33 villages in Maddur District using electronic total-stations and computers. There is also an on-going project to image tippan records. These later three projects have not been as successful as Bhoomi and KAVERI. It would seem that these projects have not been well-thought through. The projects lack a clear statement on what is going to be achieved, fail to specify a clear timeframe and more importantly do not specify measures of success. In the case of the pilot re-survey in Maddur there are questions about the approach that has been adopted, but also about the legal status of the final result. These problems are not unique to Karnataka. In fact Karnataka has implemented its projects better than most. Investment is required in India to address the problems with land records. However, a clear lesson is that more effort and rigor is required in designing, managing and overseeing pilots and projects.

The Benefit of Re-Engineering Prior to Computerisation. Although land records and registration systems have been successfully computerised in a number of states, these systems have largely been restricted to computerising existing manual systems. This limiting of the scope of the computerisation has meant that the

changes could be implemented relatively quickly and without any major controversy. However, the systems suffer from cumbersome processes and a re-engineering will now require significant changes to the software systems. In hindsight there would have been advantages in re-engineering processes prior to computerisation.

Appropriate Schedule of Fees and Charges. Systematic registration programs will generate an initial register of rights in land but unless the system captures the subsequent dealings in these rights the register quickly becomes out-of-date. There is a range of reasons why people may not be inclined to register subsequent dealings, including:

- perception of high fees and charges;
- conviction that informal rights are secure. For example, there is no need to register an inheritance, or there are competing customary or informal systems for enforcing rights;
- difficulty in gaining access to the register;
- perception of complex rules and procedures; and
- lack of awareness of laws, rules and procedures.

There are a number of strategies that can be and have been developed to address these reasons, including:

- a review of fees and charges;
- reduced fees for registration of inheritance;
- decentralisation of registers;
- the simplification of laws, rules and procedures both in the register itself and simplifying prerequisites for registration; and
- public awareness campaigns.

Based on my international experience, if the transaction cost exceeds about 5% of the property value, people will either opt not to register property transactions or under-declare property values. Traditionally the transaction costs in India for registration have been significantly higher than 5% of property values. However, most states have taken steps to reduce transaction costs, particularly stamp duty. Maharashtra has reduced stamp duty from 10% to 5% of property value, one of the lowest rates in India. This change was implemented in July 2004 and in the following year stamp duty revenue increased by 20% (World Bank, 2006). There was a similar result in Karnataka where the stamp duty for the registration of a transfer was reduced to 8% with effect from 1 April 2003.⁹ In the year ending March 31 2004 there was an increase of 22.3% in the number of the documents registered and an increase of 24.4% in the total revenue from stamp duty and fees, even with the reduced rates for stamp duty and registration fees (LEI, 2004).

These changes while significant are not of the scale of the reduction in Punjab province in Pakistan where in 2004 stamp duty for a property transfer was reduced to 2% of property value and the registration fee was reduced to 1% of property value.

⁹ Previously the stamp duty was 10% for urban land, 9% for semi-urban land and 8% for agricultural land, and the registration fee was 2%.

With the mutation fee set in Punjab at 3% of property value for the registration of a transfer or Rs. 200 where there is a registered deed, a future decision to discontinue oral mutations would not change the direct cost to the applicants for registration.

Limited Technical Capacity in Survey and Mapping. In my limited assignments in India one thing that has struck me is the limited technical capability in survey and mapping. The traditional survey technology used to support land records, the cross staff and chain, is simple but low technology. This technology is still widely used. There have been attempts to implement new survey technology such as ETS and differential GPS (DGPS), but the broad application of this technology is faced with the major difficulty of training staff in its efficient operation. There are limited agencies that can supply survey and map data (including Survey of India and the National Remote Sensing Authority) and based on my limited experience in India these agencies seem to have difficulty in providing data to internationally accepted standards. This difficulty is compounded by an apparent tendency in many agencies to treat digital data as 'error-free' regardless of the source or methodology used in producing the data. The key lesson here is that some effort is required to develop, disseminate and implement appropriate standards for the production and use of digital spatial data. A key long-term factor causing this problem has been limited opportunities and support for the land sector. This problem can be addressed with a range of strategies, including:

- Offering increased opportunities for government staff – access to new technology, training, challenging work etc. - by implementing well designed programs to address problems with land records;
- As part of these programs, building a strong private sector with a real role in supporting land administration;
- Support for the education sector to enhance land administration-related courses, land administration research activity and to encourage students to enter the field.

Strong Technical Capacity in Computing and Remote Sensing. India does have real strengths in the key technical areas of computing and remote sensing. The National Informatics Centre (NIC) an attached office in the Central Government Ministry of Communications and Information Technology (MCIT) has developed a Land Records Information System (called BHULEKH) and has played a key role in developing software for the computerisation of land records in a number of states including Karnataka. The Centre for the Development of Advanced Computing (C-DAC) an autonomous body in MCIT has developed software for the computerisation of registration in Maharashtra (SARITA). The Indian private sector IT companies have a strong presence in the international market. There is strong remote sensing capability in India. The Indian Space Research Organisation (ISRO) in the Central Government Department of Space recently launched CARTOSAT-1, a high resolution satellite panchromatic imaging system capable of producing medium scale mapping. CARTOSAT-1 has a swath of 30 kilometres and a spatial resolution of 2.5 metres and can generate three-dimensional maps with stereo-coverage. Remote sensing organisations in the various states have digitised and geo-referenced village maps (this has been completed in Maharashtra and is underway in Karnataka). These organisations have experience in the processing of data from international high-resolution satellite systems including IKONOS and QuickBird.

Security Measures. One of factors that have limited the development of survey and mapping capacity in India has been the security regulations on the availability of geodetic control and maps. These regulations also limit the availability of digital map data. In Maharashtra the village maps have been digitised and geo-referenced using Survey of India control and remote sensing data. These digitised maps are available for sale on CD-ROM, however the map data has no coordinate references. There have also been significant restrictions on organisations that can undertake aerial photography (less than 10 have such clearance) and on the dissemination of aerial photography (with aerial photography classified into one of three categories – ‘restricted’, ‘secret’ or ‘top secret’).

In May 2005 the Department of Science and Technology announced that Cabinet had approved a new national map policy (Tarafdar, 2005). This policy envisions two series of maps: a Defense Series Maps (DSMs) and an Open Series Maps (OSMs). The OSMs would have a different datum, projection, content and sheet numbering to the DSMs and each OSM in either digital or graphical format would become ‘unrestricted’ after obtaining a one-time clearance from the Department of Defense. The policy however is apparently silent on aerial photography and remote sensing data.¹⁰

Role of the Private Sector. There are a few good examples in India of public-private partnerships (PPPs) to improve land records systems. Maharashtra has used the PPP model to computerise both the record of rights system and the registration system. This experience is summarized above in **Error! Reference source not found.** The rationale for implementing a BOT model instead of the traditional approach of attempting to implement a government funded project was:

1. High capital cost: estimated at approximately Rs.20 crores.
2. Maintenance problem: lack of technically competent staff
3. Upgrading problem: difficulty in keeping pace with the fast changing technology.
4. Attention diverted from core competency
5. Inadequate supply of consumables
6. Department resistance/sabotage: leading to frequent breakdowns and the ultimate collapse of the system.

¹⁰ The word ‘apparently’ is used as the policy is no longer available on page referred to by Tarafdar (2005) <http://dst.gov.in/doc/NationalMapPolicy.doc> and the Department of Science and Technology web page has a copy of the May 19 2005 press release (http://dst.gov.in/whats_new/cabinet_approves.htm) but makes no mention of the actual policy document.

Box 1 - Experience with PPPs in Maharashtra.

Land Records. The computerisation of the rural land records in Maharashtra started in 2002 and was completed in December 2003. The system is deployed at the Tehsil level under a Public-Private Partnership (PPP) arrangement with private partners providing the front end service and the Revenue Department providing the back office registration function under a revenue sharing agreement. The data entry was undertaken by the private partner and the private partner is providing the staff and hardware in the kiosks, in return for a fixed fee for mutations ranging from Rs 10-15.

Land Registration. In 1998 work started on a project to computerise the registration process. C-DAC, a government-owned autonomous organisation, was contracted to supply a turnkey solution, piloting and fine-tuning of the software, vendor management software and specifications that could be used to prepare Build-Operate-Transfer (BOT) contracts with private companies. The decision to adopt a BOT model was supported by Government after considering the difficulties of implementing a Government funded program which had been costed at Rs. 20 crore. The system was installed in all SROs in 2002 under BOT contracts with 5 private companies. The key officials in the SROs are government officials, but steps were taken to strengthen capacity. Under the BOT arrangements the private companies provide all the hardware, install furniture based on standard design and layout, provide consumables and install the software system. The companies also provided the staff for data entry and on-going scanning of documents for registration. The costs to Government were therefore minimal. In return, the private partners keep Rs. 12 of the Rs. 20 processing fee for each page registered.

Backlogs in survey work are an issue in India and several states have taken steps to licence private surveyors. Karnataka has legislation for private surveyors and there are over 2,000 licensed surveyors. However there are a number of restrictions that have limited the impact of this initiative. Licensed surveyors are restricted to providing services in only one Taluk. They also are restricted to only part of the process (that is producing the hissa tippan that places the phodi on record). Boundary stones can only be emplaced by government surveyors. The proposed role for private surveyors in Andhra Pradesh under the Integrated Land Information System (ILIS) project is broader. The Functional Requirements and Technical Specifications in the ILIS RFP specify that private surveyors will '*offer services to users like, demarcation of boundaries, planting of field stones, etc.*' The broader role, with appropriate checks and balances, will enable the private surveyors to better fill the gap between market needs and the government's ability to provide a service.

Policy Framework for Title Registration. The lack of certainty of rights in the present systems has been the subject of much consideration and discussion. Professor Wadhwa's 1989 report makes the clear recommendation that a system of registered title with state guarantee should be implemented (Wadhwa, 1989). Introducing a title registration system will involve significant new legislation. Prior to drafting this new legislation considerable discussion will be required by key stakeholders to reach consensus on the policy and principles for title registration.

Title registration systems will vary from one country to the next but this is generally a variation in detail. All title registrations systems follow the same basic principle viz. a transaction with land obtains its validity from the act of registration by the State. Without registration the transaction will not be recognised by the law as creating a legal interest in the land. Once registered the right in land is shown on the certificate of title and the holder of that right may (with some exceptions) be regarded as holding that land free from any other rights other than those recorded on the title. This is known as conclusiveness or indefeasibility and must be enshrined in the law. However, beyond this basic principle, decisions must be made on a range of issues

relating to the manner in which a title registration system should operate which must also be embodied in the law. These include matters such as:

- a) the extent of indefeasibility and what exceptions there should be to the general principle;
- b) the extent of the State guarantee. One of the principles of the Torrens system of title registration was that the titles would be certified by the State and if anyone suffered a loss through error or the operation of the system they should be compensated out of a fund established for that purpose. Nevertheless there are title registration systems that operate successfully without a compensation fund, nearby examples being Thailand and Malaysia. Where a fund does exist it is usually built up and maintained by a small levy on the dealings that are presented for registration. In the early days of these funds they were defended vigorously against all claims. Nowadays many registries use the fund to enable them to operate on a business risk basis.

In most title registration systems the State guarantee does not extend to a guarantee of the area and boundary measurements of a parcel.

- c) The use of provisional titles is an expedient way to quickly establish the system. If provisional titles are implemented, it will be necessary to determine the policy for dealing with rights in land which were not recorded on the title at the time of issue but are later brought to notice and also the situations in which a provisional title may mature into a full title.
- d) the machinery for handling disputes arising from the issue of titles.
- e) what land will be the subject of the system. Ideally, the system should be capable of including not only privately owned land, but also all Government land so that the system is a complete record of all land in the State.

The development of this policy and principles should be undertaken in consultation with stakeholders and interested parties.

6. Conclusions

There is a lot of international experience with land administration projects, much of which is relevant to the situation in India. This paper has attempted to cover a lot of ground, although detail on some topics is light. To conclude the paper the following observations are put forward:

- a) Successful pilot activity will be a critical first step in the improvement of the land administration system in India. This pilot activity needs to be on a smaller scale than much previous activity – smaller than the District level - and have clearly defined objectives and timeframes. The objectives for the pilots should be the development of efficient, streamlined procedures and the fostering of stakeholder support, two essential steps in scaling up of the massive programs that will be necessary to improve land administration systems.
- b) There is much experience in India with a variety of approaches to improving land administration. There is little point in the less developed states implementing projects to repeat the efforts of states that have implemented pilots. The experience and lessons learnt should be documented and widely disseminated.

- c) States that have successfully computerised systems should be encouraged to implement pilots to scope, test and implement business process re-engineering.
- d) Steps have been taken in a number of states to reduce transaction costs, particularly stamp duty. There is evidence in states that have made significant reductions in stamp duty that the result has been an increase in both documents registered and revenue collected. This experience should be documented (including the experience in the province of Punjab in Pakistan where stamp duty has been reduced to 2% of property values) and strategies developed to reduce transaction costs below an international benchmark of about 5% of property values.
- e) In rural areas the prime mapping tool should be high-resolution satellite imagery. The imagery should also be tested in urban areas. Although this imagery has a lower spatial resolution than ground or aerial mapping methodologies (in the range 0.6 to 2.5 metres compared to a range of 0.01 to 0.2 metres) the imagery has a number of significant advantages:
 - India has strong skills in the generation and processing of satellite imagery;
 - Data from CARTOSAT-1, while of a lower resolution than US satellite systems, should readily be available in India at minimal cost;
 - The existing security restrictions on mapping products have limited impact on access and use of satellite imagery;
 - The imagery is readily available and can be used to quickly produce jurisdiction-wide base digital mapping in most states (recognising that there will be difficulties in hilly and heavily vegetated areas);
 - This base digital mapping could be used to geo-reference existing records such as village maps and mosaiced tippan/tippon records, as well provide a base to reference new spatial data produced from existing techniques such as cross-staff/chain and more modern technologies such as ETS and DGPS;
 - The resultant cadastral maps provide the means to cross-reference computerised record-of-rights systems and thus identify areas where further survey work is necessary. This information would also help prioritise any re-survey efforts;
 - The base digital maps would provide a spatial framework in many areas for systematic land titling programs using both existing low-cost survey technology and more modern technology such as ETS and DGPS.
 - In urban areas pilots should be implemented using photomaps produced from aerial photography as a map base and existing low-technology survey methodology as a fill in.

The above recommendations on graphical methodologies do not mean that there is not a place for the use of new survey technology such as ETS and DGPS. This technology is appropriate for land of high value and is efficient in some circumstances. However, given the current skill levels of staff, the very limited number existing academic and training institutions and the relatively high cost of the

equipment, it will be some years before this technology is the prime tool for cadastral surveying in India.

Various states have experimented with PPP arrangements (including Maharashtra as summarised above). This experience should be documented, including templates for BOT RFP/Contracts etc, and widely disseminated to provide a framework for the wider adoption of this approach;

Various states have also implemented systems to license private surveyors. This experience should also be documented and widely disseminated to enable strategies to be developed that best enable private surveyors to service the market needs within the framework of strengthened land administration systems.

A workshop of key stakeholders should be convened, perhaps with support from the World Bank, to explore the principles involved in introducing a title registration system. This workshop could perhaps be convened in a state that is implementing or proposing to implement pilot land titling activity. A key outcome of the workshop would be an agreement on the key principles and a strategy to be able to quickly provide the legal framework to support pilot land titling activity.

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Critical Land Administration Issues in Asia¹¹

A common characteristic of land administration in Asian countries is the influence of colonial history. With the notable exception of Thailand, colonial administration has commonly resulted in a duality of systems, one to accommodate western occupation (usually urban and commercial agriculture areas) and the other covering customary tenure arrangements.

Rising populations have put pressure on dwindling land resources, leading to widespread deforestation, land degradation and landlessness. Various land reform interventions have been attempted with limited success. Land administration interventions have however been successful because of a conscious separation between respective land administration and land reform programs.

Land Tenure. Recognition of rights is confined to non-forest land, thereby excluding in many countries a significant proportion of the indigenous population who have lived on and cultivated land for many generations. In some countries whole communities (towns) are established in land classified as forest. This is a critical land classification issue where settled and cultivated land will never return to forest use. The existing policy, institutional and legal frameworks regarding forest protection often remain far removed from reality on the ground.

Institutional Framework. The institutional setting is usually characterised by large, conservative, central agencies with vested interests that resist change. Recent government land administration policy is almost universally to decentralise services and devolve power from central to local government. The trend is towards *de-concentration*, with central government responsible for policy, maintenance of a unitary legal and regulatory framework and uniform service standards, and all operational responsibilities devolved to the regions. In most cases the trend is yet to become reality.

Multiple agencies with overlapping land administration roles and responsibilities, each supported by empowering legislation, is a critical issue in some countries. Attempts to coordinate project implementation through “steering committees” etc. have invariably been unsuccessful. The compromise of arrangement of separation of the project component parts amongst different agencies results in a disaggregation into separate projects. Institutional issues remain one of the biggest obstacles to successful land administration reform in the region.

Legal Framework. The need to rationalise the sheer volume of uncoordinated and disintegrated land related legislation is a critical issue in many countries. The level of law enforcement is low and the prevailing culture of consensus makes it very difficult to reach agreement on the need to amend existing legislation.

A common characteristic of the region is the predominance of title registration over deeds systems however, with the exception of the Philippines which has some limited and ineffective rights to compensation by the State, these systems are not backed by any form of State guarantee.

There is a high incidence of land tenure related conflict with attendant social disruption in some countries. Dispute resolution is usually subject to court litigation

¹¹ From Burns et al, 2003.

with the time delays and costs involved effectively removing most citizens from the process.

Technical Arrangements. The critical technical issue is the relatively low level of technology and the low skill levels of staff coupled with the perception that the lack of access to technology is at the heart of most land administration problems. In reality, incorrectly conceived and applied technology is likely to be a much more serious problem.

Underestimating the need for appropriate human resource training and development programs and the expansion of programs across the private sector or industry development is a critical technical issue.

Administration Processes. The existence of a hierarchy of rights over private land complicates the tenure system in many countries because many of the rights are for specific and temporary use, so the need for renewal, or conversion to a higher right, adds to the bureaucratic chain. For example, Indonesia registers separate rights for ownership, cultivation, building, use and management. When added to an already complex regulatory system this creates a concentration of power in numerous points of the process which increases the potential for “informal fees”, discourages participation and leads to distrust of the formal tenure system.

A parallel issue is the failure to delegate responsibility to an appropriate lower level of competence. The convoluted chain of officials whose signature is required in many jurisdictions to approve many routine functions in the land administration process adds to transaction time and expense, increases backlogs, and discourages participation in the formal system.

Land Market Information. With the commitment to systematic registration of rights to land in Asia there is a growing mass of registered land parcels in most countries. However, the security of title and sustainability of the land administration system relies on maintenance of the records so a critical issue emerging in many countries is the relatively low level of registration of subsequent transactions. This reflects low levels of community understanding of the benefits of formal registration and highlights the need to simplify procedures and processes, review fee structures and extend community education and awareness programs beyond project public relations campaigns.