Lessons Learned: An Evaluation of Cadastral Initiatives in Latin America over the Past Two Decades

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Key words: Cadastral Systems, Land Administration, Latin America, Lessons Learned.

ABSTRACT

Latin America has a long and rich history of cadastral and land titling projects stretching back to the 1980s and beyond. Currently almost every country in the region has a land administration project, incorporating cadastral reform, that is either in preparation or being implemented. Unfortunately, this history has not been systematically reconstructed but is buried in a myriad of reports and other gray literature. In fact, with the exception of Thailand, the situation is the same in other regions of the world. This paper starts with a summary of a recent World Bank/USAID initiative to compile lessons learned from land administration projects around the world and follows with lessons learned in the context of project design, institutional reform and technical innovation.

RESUMEN

America Latina tiene una historia larga y abundante en proyectos catastrales y titulación de tierra desde los años de 1980s y antes. Hoy día casi todos los paises en la region tienen un proyecto de administración de tierras, incorporando reformas catastrales, que estan bajo preparación o en el proceso de implementación. Desafortunadamente, esta historia no ha sido reconstruida sistematicamente y se encuentra escondido en varios informes y otras formas de literatura no publicada. De hecho, con la excepción de Tailandia, la situación es similar en otras regiones del mundo. Este articulo comienza con un resumen de la iniciativa reciente del Banco Mundial y USAID para compilar las lecciónes aprendidas con la experiencia mundial en los proyectos de administración de tierras. La segunda parte del articulo discute lecciónes aprendidas en el contexto de diseño de proyectos, reforma institucional e inovaciones técnicas.

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1. INTRODUCTION

Latin America has a rich history of cadastral projects extending back to the USAID-funded projects in the 1980s. Today, virtually every Latin American country has a land administration project either in implementation or under preparation.[1] Recently, while revisiting one of these countries after a 14 year absence, I was struck by the lack of local institutional memory and the apparent absence of lessons learned from earlier land titling and land administration initiatives in that country. Around the same time I participated in an e-conference on "Lessons Learned in Land Policy and Administration," with a follow-up consultative meeting held in Washington, D.C. in April, 2001. This initiative, jointly sponsored by the World Bank and USAID, confirmed the urgent need to compile lessons learned from past experience. This paper reflects part of the debate from these conferences as well as my own personal views on lessons learned within the context of Latin America.

Land administration projects in Latin America, as in other parts of the world, are focused primarily on facilitating a land market. While these projects also have equity and environmental sustainability goals, in most projects this is a secondary focus or is left to environmental and rural development projects. For example, a recently approved land regularization project in Ecuador targets the poorest counties (*cantones*), but does not explicitly address poverty or environmental concerns except to delineate the outside boundaries of any protected areas that may fall in the project area. These concerns are left to other existing projects in the country, perhaps reflecting more the divisions within the development banks than the often competing policy goals of promoting equity, efficiency and sustainability (see Figure 1 below).
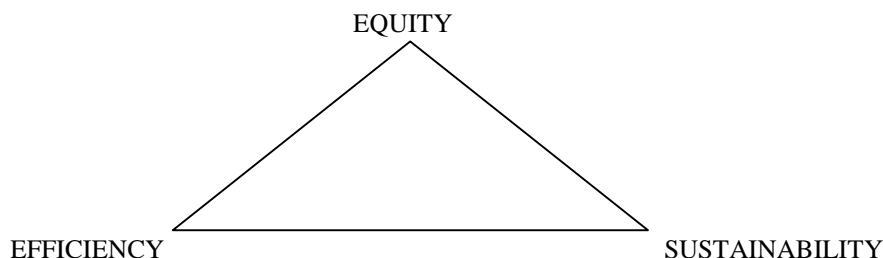
EQUITY

EFFICIENCY   SUSTAINABILITY

Figure 1. Competing Land Policy Goals

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[1] For a list of current land administration projects in Latin America and the Caribbean see this USAID/OAS website: http://www.property-registration.org/Project-list.htm

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There is a growing realization that there has been sufficient experience to carry out a more comprehensive evaluation of land administration initiatives worldwide and to compile the lessons learned to date. The World Bank/USAID e-conference and follow-up consultative meeting, discussed in the next section was an initial response to this need.

2. REVIEW OF LESSONS LEARNED REPORT AND e-CONFERENCE

In the early part of 2001 the World Bank and USAID commissioned a report on lessons learned in land policy and administration that was designed to be used as a focal point for the e-conference discussion. The introductory section of the document emphasizes the role of land tenure in promoting economic growth. Researchers at the World Bank and elsewhere have argued that greater tenure security will promote greater incentives for land holders to invest in their land and increase the availability of credit for such investment (Feder et al 1988, Feder and Nishio 1998). The land administration system provides the operational mechanism for managing land tenure and is designed to facilitate a well functioning property market.

The document recognizes the different policy motivations behind land administration reform within different regions of the world. Those concerning countries in Latin America include stabilizing land tenure in post conflict situations (e.g. Nicaragua, El Salvador, Colombia and Guatemala) and improving the property market infrastructure (e.g. Ecuador, Peru, Bolivia). The report goes on to discuss the sequencing of project interventions, legal and institutional issues, and implementation arrangements. The report draws heavily on the experience in the transition economies of eastern and central Europe and the NIS (newly independent states), but many of these lessons are just as applicable to Latin America. The lessons learned are divided into the following categories: (a) land policy, (b) land administration, (c) land markets and land reform, and (d) natural resource management and land policy.[2] I will restrict the discussion here to the section on land administration that concludes with a list of lessons learned (summarized in Box 1 below).

The e-conference to discuss the World Bank report and gain broader input to this issue ran from March 5 to April 1, 2001, with a week allocated to each individual theme in the report. A total of 527 individuals from 65 countries signed up for the conference. Over the 28 days of the e-conference, 271 messages were posted by some 115 contributors.[3] This was an effective medium for reaching many of those involved in land administration projects. However, one difficulty with such a conference, where participants are logging in from vastly different time zones, is that the discussion does not build sequentially as each person comments on an issue. As a result, participants are at different places in the discussion, depending on what messages they have read (which can differ significantly if you accept that people sleep for 8 hours and are thus out of the discussion for this period).

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[2] World Bank (2001) available on-line at this address.

[3] See summary of conference on-line at this Web address and actual email message at this Web address.

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Box 1. Summary of Lessons Learned in World Bank Study (World Bank 2001)

Legal Lessons:

− It is much more important to obtain general agreement on land policy direction than to require *a priori* a technically perfect legal framework.
− Drafting of new laws should be linked to the implementation of pilot projects and the process should be flexible enough to incorporate the experience and lessons learned from the pilot in the new legal framework.
− New legal frameworks have been ineffective because insufficient attention has been paid to discussion with interested parties and dissemination of their rights.

Institutional Lessons:

− Cadastral and registry agencies should be integrated into a single institutional structure.
− A number of projects have given inadequate attention to capacity building, particularly where various project activities rely on the private sector..

Project Design Lessons:

− It is essential to involve stakeholders on a "broad and continuous front."
− Pilot projects are crucial for identifying key policy issues and acceptable solutions.
− The areas – marginal or high economic potential - prioritized in the project will affect costs, fiscal sustainability and impact on poverty.
− Cadastral survey and the collection of land use and cadastral data are a waste of time if they do not lead to the issue of legal title and if future transactions are not referenced to the cadastral survey.
− A minimum "package of services" should accompany title if expected benefits are to be realized.

Sustainability and Impact Lessons:

− Transaction costs may be a major obstacle to registration, particularly amongst the poor.
− The links between project activities and benefits (increased household welfare, reduction in poverty and economic growth) are not clear, partly because of the shortage of "meaningful indicators of project effectiveness."
− A clear definition of projective objectives and a comprehensive evaluation of impacts are essential for support in subsequent phases of the project.

The other difficulty, or challenge, is how to involve the many stakeholders in developing countries who do not have access to the Internet.

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In the rest of this paper I discuss what I perceive to be the major lessons learned from project experience in Latin America, incorporating where applicable debate from the e-conference. I will approach this through looking first at the project design lessons and then by examining institutional, technical and general lessons learned over the past two decades.

2.1 Project Design Lessons

2.1.1 Project Scope and Focus – from Titles to Infrastructure

Cadastral projects during the 1980s, and even prior to that period,[4] focused primarily on land titling. The emphasis was on issuing a paper title to as many eligible landholders as possible and these projects were often simply evaluated in terms of the number of titles that were issued. To some extent this continues still today, but this is more for political reasons than as a valid measure of the success of a project. The project names during the 1980s reflect this emphasis – for example, Land Titling Project (Honduras), Land Legalization Project (Ecuador). Many other cadastral projects at this time were not stand-alone projects, but components of larger agricultural development projects. In a global review of World Bank land administration projects, Holstein (1993) identified 30 such cases. This fragmentation made it difficult to identify all the cadastral initiatives, let alone evaluate them.

The experience of the land titling projects of the 1980s demonstrated that you cannot simply hand out land titles and expect recipients to register subsequent transactions. Furthermore, the goal of instilling tenure security, which would lead to increased agricultural production and improved standards of living (Feder and Noronha 1987), is a long term goal which relies on the sustainability of the system well beyond the life of the project. So titling by itself was recognized as insufficient for ensuring continued use of the system. After examining the reasons why titleholders do not report subsequent transactions, it was realized that the main problem lay within the cadastral and registration systems themselves. These systems were overly bureaucratic, costly, inaccessible, centralized, corrupt and not transparent to the users (Wachter and English 1992; World Bank 1995; Barnes, Stanfield and Barthel 2000). In other words, the infrastructure for facilitating a land market and for promoting tenure security was not working and the focus of land projects needed to shift to fixing this infrastructure.

The property infrastructure is comprised of institutional, legal and technical components. Over the past decade stand-alone land administration projects have multiplied as the focus has shifted from simple titling to providing an effective infrastructure for the property market. These land administration projects typically contain the following scope of activities (World Bank 1995; World Bank 1998; IDB 2000):

− Facilitation of broad-based land policy debate
− Institutional strengthening (including decentralization) of the cadastral and registration agencies
− Systematic regularization (*saneamiento*) of land parcels in targeted areas

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[4] Goldstein (1974) described cadastral projects begun in the 1960s in Costa Rica, Guatemala, Nicaragua and Panama

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- Introduction of digital information technology (IT) for managing cadastral and registry information
- Cadastral mapping, property registration and land titling.

Part of the reason that land administration has become the focus of many projects is that the complexity (institutional, legal and technical) of this area makes it impossible to deal with land administration reform as a sub-component of a larger project. Agricultural projects, for example, do not address cadastral or land administration issues in urban or protected areas. Another area of complexity is the land tenure system found in many Latin American countries, the topic of the next section.

2.1.2   Common Property Tenure Regimes

The conventional approach in cadastral projects is to treat the land as either 'private individual' or 'communal.' This over-simplified binary approach is inadequate as it does not capture the complexity of the many individual rights, and overlayering of rights, that are typical of common property resource systems. This is mainly due to the limitation of using 'western' tenure constructs for analyzing and explaining land tenure systems that are fundamentally different than this 'western' model. We need a more general, cross-cultural framework or theory for examining complex 'customary' land tenure systems. There is a vast amount of literature on common property resources (see Agrawal 2001, Ostrum 1990, for example) that would contribute to the property debate and to a more generalized theory of property rights.

The World Bank (2001) document suggests that we should look towards 'communal titles' in customary tenure situations where there is not a high demand for individual titles. Many communal titles assume equal land holdings within the unit as well as an absence of individual use rights. In reality, many customary tenure systems distribute the land in proportion to a family's labor capacity and the distribution may vary from one year to the next. Conventional cadastral systems are not flexible enough to deal with these tenure dynamics. The answer is not to force these people into an inflexible western model, but to look for cadastral solutions for managing land and associated rights within customary tenure areas, possible through some form of community cadastre (Fourie and van Gysen 1996).

2.2 Institutional Lessons

2.2.1   Decentralization

Decentralization and devolution of decision-making powers is a key issue in Latin America. Centralized bodies were put in place during the colonial era to ***control*** the colonized nation. This centralized control structure was retained in the post-colonial era and only relatively recently in Latin America has this begun to change. Decentralizing land institutions, such as the cadastre and registry, is critical to optimizing access and more fundamentally to sustaining these systems. In Latin America this means decentralizing to at least the department level. In many cases registry offices already exist at this decentralized level, but the legal cadastre, if it exists, has remained centralized. In addition, property taxation

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agencies, which are primary users of cadastral and registry information, are also typically decentralized to the *Municipio* level.

Moving from a control mentality to one that is more democratic and participatory requires decentralizing the operational functions of land administration to the local/departmental level. Past experience has shown that centralized entities should be concerned with policymaking, coordination and the establishment of standards and norms, and not with the every day operation of the cadastre and registry. It is also argued that decentralization (a) promotes information symmetry, (b) gives greater local control thereby facilitating broader participation in the new system, (c) improves access by bringing cadastral/registry services closer to the users. Naturally, decentralized land administration systems will only be effective if there are adequate human, technical and financial resources to operate the system at the local level. While these resources are, by definition, scarce in developing countries, I would argue that development occurs at the local level and therefore development interventions should be aimed primarily at this level. Supporting over-burdened and unrepresentative central government structures does nothing for the tenure security and ultimate welfare of the poor majority in these countries

2.2.2   Linkage between Registry and Cadastre

The World Bank (2001, p. 30) document suggests that the "cadastre and registry functions should be managed by a single institutional entity." The lack of integration of the registry and cadastre is a severe problem throughout Latin America, with El Salvador as perhaps the only example of a combined institution. Combining these two institutions is extremely difficult and often not politically feasible. Registry offices in Latin America generally function under the Ministry of Justice or the Supreme Court, while the cadastre typically falls under a completely different ministry. There are other ways of linking these two institutions if combining them is not feasible. These include: (i) retaining the cadastre and registry as separate institutions, but incorporate them in the same building, or (ii) integrating the information system of the cadastre/registry, but administering the staff through different ministries as before. Experience has shown that a simple cooperative agreement between these two institutions will not promote cooperation.

Another significant change between the earlier land titling projects and today's land administration projects is the increased privatization of cadastral services. Instead of building up a large government agency to do the cadastral surveys and regularization work, projects are increasingly turning to the private sector (nationally or internationally) for these services.

2.2.3   Parallel Registration Systems

The World Bank (2001, p. 32) document mentions the "threat of having two parallel registries in urban and rural areas" and discusses this issue in the context of Peru. In most of Latin America, property registries typically register any property documents presented to them, regardless of whether it is urban or rural. However, this urban/rural division does exist in the cadastre where one finds a *catastro rural* separated from a *catastro urbano*. If there is to be integration between the registry and cadastre (see previous sub-section), then the

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cadastre must incorporate both urban and rural properties. As mentioned previously, this presents a problem when cadastral reforms are sub-components of agricultural development projects as they exclude urban land by definition.

Creating a new registry system that operates in parallel to the existing one can offer significant advantages as evidenced by the experience of the *registro predial* in Peru (Lastarria and Barnes 1999). Most notably, it provides the opportunity to create a completely new system that can be designed to be more efficient and simpler than the traditional system. With careful design, it can also avoid opposition from those who have vested interests in the old system and can begin operating without a complete overhaul of the legal framework. Once this system has been tested in specifically designated areas, the two systems can be merged to incorporate the best of both systems. The danger, as demonstrated in countries like Australia and Belize is that the old system may persist, in parallel with the new system, for generations.

2.2.4   Developing Autonomous Land Institutions

In several land administration projects in Latin America and the Caribbean, most notably Trinidad, Guyana, and El Salvador, it has been proposed that the land institution (cadastre and registry) become more independent and autonomous. This means that they will increasingly operate like a business, raising revenues through services offered as well as through the sale of land information. The main motivation for this institutional innovation has sprung from the need to gain more control over the resources of the cadastral and registry agencies. This would address problems associated with retaining qualified personnel (who are drawn into the private sector because of higher financial rewards) and in being able to reinvest revenues in the maintenance and upgrading of technical resources. We are beginning to see the emergence of innovative public/private institutional arrangements, such as the registry system in Ontario (Canada), and I believe developing greater autonomy in land institutions is a first step towards such an arrangement.

2.3 Technical Issues

2.3.1   Decentralized Information Systems

The World Bank (2001, p. 31) document promotes the concept of a "single national level database which links cadastre and registry" and is updated through local offices which send information to the center. This approach runs counter to institutional decentralization efforts and also assumes that there is a modern operational network that links local offices with the central database. Most of the users of cadastral and registry information systems live in the area serviced by the local office, so what justification is there for building a massive, central database? The answer given by proponents of centralization is the need for control. This reflects the colonial attitudes mentioned previously and ignores the fundamental need for effective land administration as opposed to paternalistic control. The central government does, of course, have an interest in land around the country, particularly state land that is protected for environmental or security reasons. However, using this interest as a justification that central government must have all parcel-level information is simply not valid. I would

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argue that in most cases summary information provided every 3-6 months will meet most of their needs.

When the Internet access is more generally available in Latin America, this technology will make it possible to link between local systems or between local system and the center. Vertical and horizontal integration will therefore be possible within 5-10 years, but in the meantime experience suggests that we focus on developing the local nodes of this future network.

2.3.2   Technology Transfer is Tough

While we are experiencing an era where technology is developing at an incredible pace, we do not seem to be advancing nearly as fast in the area of technology **transfer**. In land administration this covers the transition to a digital world through data capture technologies like GPS, airborne laser and radar system and satellite imaging technologies, as well as in the management of digital information in a GIS. Technologies like GPS offer significant advantages in terms of cost and efficiency, but incorporating (and maintaining) them in every day practice is extremely difficult. We have done pilot projects with GPS in a number of countries, including Albania, Belize, Peru, and Nicaragua, but Belize may be the only country where the technology has been assimilated into everyday practice. In a study of the transfer of GPS technology in Albania (Barnes et al 2000), we identified several key factors blocking the effective transfer of this technology (see Figure 1 below). Albania may be regarded as an extreme case in terms of the difficulty of transferring technology, but it does reflect many of the problems faced in Latin America.
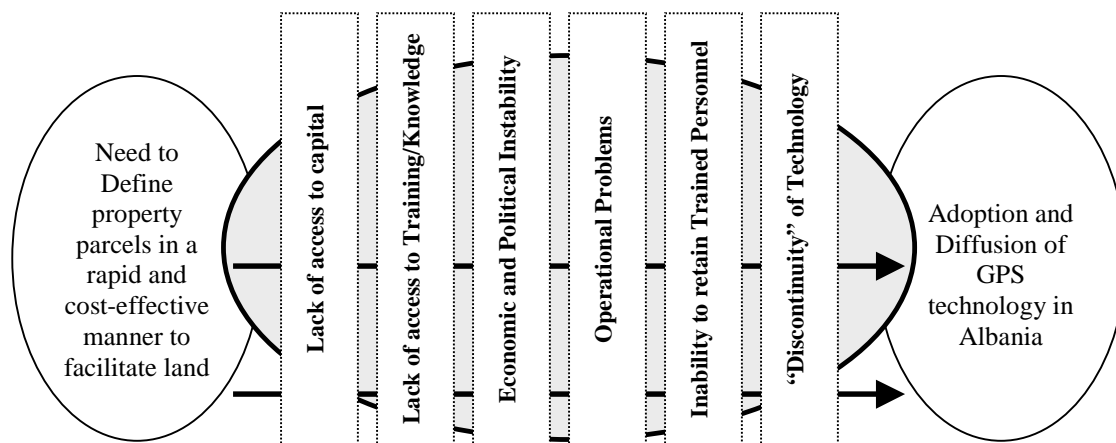

FIGURE 2. Obstacles to GPS Technology Adoption in Albania

Most of the obstacles shown in Figure 1 are self-evident, but it is worth expanding on what I have called the "discontinuity" of technologies. In broad terms this captures the leap from manual to digital technology. In more specific terms, GPS represents a technology that is not simply an automation of an existing technology. GPS equipment is very different than traditional surveying equipment, such as a theodolite or even EDM, and the fact that it is not

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merely an automated version of an earlier technology (as total stations are) makes it discontinuous. This in turn makes it substantially more difficult to transfer.

We need to acknowledge at the outset that transferring digital technology into a previously manual world represents a paradigm shift and consequently is a complex undertaking. It requires much more time and resource investment than a few training courses for those who will provide guidance. I believe we should learn from our agricultural colleagues and develop a network of technology extension agents who can shepherd these new technologies across the digital divide.

2.3.3   Coverage vs Accuracy

One topic that generated a flurry of responses in the World Bank/USAID e-conference was whether projects should give higher priority to achieving complete coverage, possible at the expense of quality, or whether quality should be the priority goal. Proponents of the first option argue for a simple, inexpensive and rapid cadastral/registration system that would get as many properties into the formal property market in a short period of time. Opponents of this option argue that the lack of precision will cause disputes and will defer the costs for a "proper" system to a later date. In the final analysis, there remain a variety of approaches all of which are valid and each case should be dictated by its social, economic and environmental needs and not by narrow technocratic concerns.

2.4 General Lessons

2.4.1   Gender Equity and Indigenous Rights

One problem that has attracted increasing concern as we have gained experience with cadastral projects is gender inequity. In short, how do we protect women's land and resource rights? In rural areas, women often play a pivotal role in agriculture in addition to their traditional family roles. In the past, land titling projects granted titles in the name of the head of household, who was usually an adult male. This often undermined the tenure security that women had through the customary system that operated prior to titling. Currently, land administration projects are trying to address this problem through joint titling of conjugal property and through expanding policy dialogue to incorporate the voices and interests of women (World Bank 2001). These are mechanisms for promoting greater gender equity in land and property, but we need further studies to measure the impact of joint titling on gender equity, tenure security, and access to factor markets.[5]

Several land administration projects have addressed indigenous land rights through simply demarcating indigenous territories and issuing a title in the name of the group. Much of the surviving forests in Latin America is inhabited by indigenous groups. These groups are now saddled with protecting this forest while at the same time trying to make a decent living. Formal land administration systems rarely deal with anything but the "tenure shell" that

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[5] See this FAO site for more discussion on this issue.

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defines the outsi[6]de polygon of these areas. Given the value of these remaining forests and their importance at local, national and international levels, how can land administration internal to indigenous areas be enhanced so as to promote sustainability?

2.4.2   Capacity Building

Capacity building is critical to both decentralization and privatization efforts in land administration. In Latin America one of the most serious challenges facing the implementation of land administration projects and the ongoing maintenance of land administration beyond the project, is the lack of institutional and human capacity. There are many land administration projects underway or proposed in Latin America, but who will do the implementation work and how will the requisite knowledge and training be provided? Can the Internet assist with knowledge transfer? What role can existing universities play in capacity building?[7] Williamson (2000, p. 25) contends that at least 10% of project budgets should be directed towards capacity building.

3. CONCLUSION

One of the valuable by-products of an effort to compile lessons learned is that it illuminates those areas where there are no good lessons or where there is insufficient data to extract lessons learned. One area where we lack good comparative data is in detailed costs. In the lessons learned e-conference contributors were quoting per parcel costs of $47 for regularization, cadastre and titling in Peru,[8] while the "equivalent" costs for Georgia[9] were $1.05 per parcel! We have these general cost figures for a number of countries, but what we do not have is a good understanding of what you get for $47 or $1.05 and why these costs differ so radically. Fortunately, this is now being addressed as a follow-up to the World Bank/USAID conference and results are expected in April, 2002.

The other area where we are short of lessons is in the maintenance or sustainability of cadastre and registry systems. What incentives can be provided to encourage titleholders to report property transactions to the cadastre and registry? I echo the call in the World Bank document for better and more impact studies (see Box 1), not just for subsequent phases of a project, but to better gauge how well we are meeting the equity, efficiency and sustainability goals that underlie all cadastral initiatives.

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[6] Capacity building is needed in such areas as cadastral surveying, informations systems, adjudication, conflict management , project mangaement and in the administration of cadastral and registry offices.
[7] Capacity building is needed in such areas as cadastral surveying, information systems, adjudication, conflict management, project management and in the administration of cadastral and registry offices.
[8] Email from Kevin Barthel dated March 13, 2001
[9] Email from Bob Cemovich dated March 16, 2001

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