



Comparative Evaluation

# Land Regularization and Administration Projects



## PREFACE

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This evaluation belongs to a new group of products by the Office of Evaluation and Oversight (OVE). It is a comparative evaluation of Bank-financed projects, relating, in this case, to land regularization and administration.

The evaluation is relevant for two reasons. First, no other evaluation of these types of projects exists, despite the fact that they have been present since the Bank's founding. In addition, since the mid-1990s, the number of projects has risen (see Section II.A and Annex 2), showing that is still an ongoing concern for the regularization of land holdings and the improvement of land administration in the region and in the Bank. Second, the region still faces a number of development challenges (such as low agricultural productivity) that are at least partly caused by problems in land tenure and administration (see Chapter I and Annex 1). The Bank's interventions in this area are thus highly relevant, and an evaluation is required to help improve them.

The main objective of this evaluation is to identify elements that have contributed to the greater or lesser success of a number of land regularization and administration projects; it also seeks, on the basis of these, to identify aspects of both design and execution that warrant special attention in order to make these projects more efficient, effective, and sustainable. The secondary objective is to provide information on the performance and outcomes of the projects evaluated. The evaluation is based on a number of selected projects that are not representative of the full range of Bank activities in this area (see Section III.A for the selection process), and its conclusions are limited to the scope of those projects. The evaluation does not, therefore, claim to offer conclusions that can be extrapolated to all such activities, or to make any judgment about the future relevance of land administration projects in the region.

The evaluation methodology is comparative— in other words, a number of case studies were selected (in countries where the Bank has financed one or more projects) and all aspects that might be relevant for future, similar operations were compared systematically. The comparison was carried out on two levels: first, at the program level, identifying those aspects of the projects in which failures and successes were most often seen (Section IV.A); and second, at the level of activity, with a review of differences between the case studies (Section IV.B). In this second level of comparison, the evaluation also looked at the quality and number of project outputs, and, to the extent possible, outcomes.

This evaluation procedure first required a separate analysis for each case study. These four analyses led to the identification of aspects warranting special attention in each case study—aspects upon which the subsequent comparison was based. Rather than inputs, the analyses are important complements that lead to an improved understanding of what each project did.

**Comparative Evaluation:**

# **Land Regularization and Administration Projects**

**OFFICE OF EVALUATION AND OVERSIGHT, OVE**



**Inter-American Development Bank**

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ACRONYMS

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## ACRONYMS

ANATI	<i>Autoridad Nacional de Administración de Tierras</i> [National Land Administration Authority]
FAO	United Nations Food and Agriculture Organization
FIG	<i>Fédération Internationale des Géomètres</i> [International Federation of Surveyors]
GPS	Geographical Positioning Systems
GTS	<i>Grupos de Trabajo Supervisado</i> [Supervised Work Teams]
IGAC	<i>Instituto Geográfico Agustín Codazzi</i> [Agustín Codazzi Geographical Institute]
ILD	<i>Instituto Libertad y Democracia</i> [Institute for Liberty and Democracy]
INCORA	<i>Instituto Nacional para la Reforma Agraria</i> [National Agrarian Reform Institute]
LAS	Land Administration System
LMP	Land Management Program
PETT	<i>Programa Especial de Titulación de Tierras</i> [Special Program for Land Titling]
PRONAT	<i>Programa Nacional de Administración de Tierras</i> [National Program for Land Administration] (Bank program)
PTRT	<i>Programa de Titulación y Registro de Tierras</i> [Land Titling and Registration Program]
SIICAR	<i>Sistema de Interrelación de la Información del Registro y el Catastro</i> [System for the Exchange of Registry and Cadastral Information]
TITULAR	<i>Programa Presidencial para la Formalización de la Propiedad y la Modernización de la Titulación Predial</i> [Presidential Program for the Formalization of Property and Modernization of Property Titling]

This evaluation was prepared by a team consisting of Héctor Valdés Conroy and Johanna Ramos Piracoca, with the collaboration of Ana Ramírez-Goldin and Li Tang, and under the direction of Cheryl W. Gray. The evaluation would not have been possible without the collaboration of countless individuals. The team sincerely thanks the government officials and members of civil society in Belize, Colombia, Panama, and Peru, who kindly cooperated with this evaluation, giving their time to provide us with information and their opinions on the various projects analyzed in this document. Our thanks go also to various people inside and outside those countries—researchers from different organizations, as well as individuals who participated in the analyzed projects—for giving us information and part of their invaluable time. We would also like to acknowledge IDB Management, particularly the Environment, Rural Development, and Disaster Risk Management Division (INE/RND), as well as the Country Offices in Belize, Colombia, Panama, and Peru, for their kind support and valuable contributions. Lastly, the team would like to thank their colleagues in OVE who served as reviewers of the preliminary versions of the evaluation.



Land can be seen as a factor of production, as the space necessary to engage in an activity, as a determinant of cultural identity, or as the place that is home and where one grew up.  
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# Executive Summary

**Land is usually of very high value, and for this reason the determination of who has rights over it, as well as guaranteeing those rights, takes on particular importance. By enhancing tenure security, the regularization of land tenure can yield a series of economic benefits such as increased investment, credit access, and productivity. However, it is also an input for the creation of an efficient and comprehensive land administration system. A system with these characteristics can provide benefits that go beyond land tenure security to include the reduction of frictions in land markets and improvements to tax collection and land-use planning.**

Since the early 1990s, the Bank has approved land regularization and administration projects on an almost uninterrupted basis—nearly 20 projects in 14 Latin American and Caribbean countries. These projects have responded to the high levels of informal land tenure that predominate in the region. Objectives have mainly emphasized the revitalization of land markets, increased agricultural investment and productivity, and improvement of government land administration capacities.

This evaluation seeks to contribute to the Bank's work in this area through the identification of elements that have contributed to the greater or lesser success of a number of these projects. To this end, the evaluation team undertook case studies of the experiences of Belize, Colombia, Panama, and Peru (9 projects in total), comparing aspects of design, execution, and outputs among them.

The evaluation finds that the Bank has been consistent in its support to the countries. The projects have sought to improve the countries' land administration systems (LASs) based upon an integrated model consisting of a multipurpose cadastre and a comprehensive title-based registry covering the entire country. The projects have also supported the mass regularization of land tenure, using modern demarcation techniques and participatory adjudication methodologies.

Within this overall consistency, there are significant differences among the various experiences. Panama and Peru demonstrated greater progress in the area of regularization than in improvement of the LAS. In Colombia, on the other hand, little work was done on regularization, but the LAS (specifically, the cadastre) was strengthened appreciably. In Belize, major and organized regularization activities were undertaken (the best organized of the four cases), and the LAS was strengthened through an efficient, complete, and robust information system.

The sustainability of these achievements is also variable. In Colombia, the cadastre has attained a good degree of financial self-sufficiency, and the country has continued to work on integration of the register and the cadastre—an effort initiated under the Bank's project. In Belize, both the benefits and the sustainability of the information system depend on the use that is made of it; this, in turn, depends on the technical capacity of the staff that operate the system. In Panama, the concentration of titling and cadastral activities in a single institution is a recent step, the sustainability of which cannot yet be evaluated. The sustainability of regularization activities is at greatest risk where the conditions that gave rise to informality have not changed. This is the case of Peru and Panama. In Belize, the new information system could reduce the disincentives to formalization that were created by previous LAS processes.

In terms of those aspects that might be improved, the evaluation finds a number of project design and evaluation elements that warrant attention in future operations of this kind. First, more resources should be invested in the diagnostic assessment, monitoring, and evaluation of project activities. This is particularly necessary in the area of regularization, where the lack of rigorous assessments led to contractual difficulties with a number of companies responsible for these activities. Moreover, in three of the four case studies, exact information regarding the number of properties regularized under the Bank projects is not available.

The evaluation also finds that, in general, all activities under the projects were developed simultaneously. This led to delays, bottlenecks, and other execution problems, as satisfactory progress in some activities relied on the prior completion of others. In light of this, the evaluation suggests that projects be structured according to a logical sequence.

Projects also experienced delays and exceeded their original timeframes. This consistent pattern suggests that project execution periods should be extended. Together with the sequencing considerations, this raises the question of whether interventions should be structured in the form of programs consisting of various projects, each one with different timeframes and specific objectives (and possibly using different financing instruments).

The evaluation also finds that Bank-financed projects encounter persistent difficulties in developing complex information systems, such as those required in an LAS. However, the experience of Belize suggests that one possible solution is to purchase off-the-shelf systems from specialized companies, after which the only need is to adapt them to the specific requirements of each country.

The evaluation also shows that the Bank's support for temporary programs in the countries (Panama and Peru), instead of permanent institutions, has an adverse impact on the sustainability of project outcomes.

Lastly, an analysis of the four case studies suggests that greater attention should be paid to the design of contracts with firms hired to undertake regularization activities, in terms of human resources management and the recovery of at-risk information.



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Enhanced land tenure security can yield a number of economic benefits, such as increased investment, credit, and productivity. It can also raise the number of land market transactions, increase property values, and reduce land conflict, among other benefits.  
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# 1 Economic Importance of Land Regularization and Administration

## A. IMPACT OF LAND TENURE AND REGULARIZATION

**Land is a particularly important asset, both from an economic standpoint and from a cultural, or even emotional, standpoint. Land can be seen as a factor of production, as the space necessary to engage in an activity, as a determinant of cultural identity, or as the place that is home and where one grew up. For all these reasons, it normally commands a high value. Determination of who has rights over it and guaranteeing those rights take on particular importance.**

According to Besley (1995), the economic literature<sup>1</sup> has identified four reasons that a lack of secure property rights has a negative impact on economic activity.

- First, the risk of expropriation acts as a disincentive to property investment.
- Second, people are forced to channel resources into defending their property instead of productive activities.
- Third, the exchange of property is inhibited. In the case of land, this prevents the land from being cultivated by those who are most productive.
- Fourth, the property cannot be used as collateral in financial operations necessary to support other economic activities.

For these reasons, enhanced land tenure security can yield a number of economic benefits, such as increased investment, credit, and productivity. It can also raise the number of land market transactions, increase property values, and reduce land conflict, among other benefits.

Land tenure security is a difficult concept to measure, at least from an economic standpoint. According to the legal definition, the degree of security is determined by the level of protection offered by the legal system. In economic terms, however, the

relevant definition (and the one employed throughout this evaluation) is the degree of certainty that is felt or perceived by someone that no one will deprive them of their rights or benefits in relation to a land parcel that they own or control.<sup>2</sup>

Regularization<sup>3</sup> of tenure can increase the level of security with respect to a piece of land, although not necessarily. Wherever the rule of law applies, the increased legal security stemming from regularization should lead to increased security of land tenure. However, where informal land tenure systems predominate and operate in a satisfactory manner, regularization may be irrelevant and may leave land tenure security unaltered.<sup>4</sup>

In other cases, regularization can even have negative effects, such as legitimizing spurious property claims (possibly leading to a loss of property rights by vulnerable individuals) or encouraging land grabs.<sup>5</sup> The concentration of land tenure could increase while some people lose their lands without an equivalent increase in their monetary wealth. Another potential negative effect is the change in land use that would have adverse environmental consequences, such as deforestation.

Despite these risks, the empirical literature has found evidence that land tenure regularization in several countries has yielded the economic benefits mentioned above. Among these, possibly the most frequently identified is increased investment.<sup>6</sup> The possibility that lending will increase has been widely explored, yet the evidence in favor is scarce,<sup>7</sup> possibly owing to the fact that credit requires several other conditions in addition to collateral availability. A number of studies have found increases in the number of land market transactions<sup>8</sup> (both sale/purchase and rental), while others have found evidence of increased labor supply,<sup>9</sup> partly as a result of the reduced amount of time that regularization beneficiaries spend looking after their properties. Lastly, a few studies have found positive effects on land values<sup>10</sup> and agricultural productivity.<sup>11</sup>

## **B. LAND REGULARIZATION AND ADMINISTRATION**

Land tenure regularization is an input for land administration systems (LASs), in that it incorporates informal property holdings and their cadastral and registration information into the system. The economic benefits produced by regularization as a result of increased land tenure security are only a subset of the benefits that can be achieved through effective land administration. The reason for this is that they correspond to the registration function of an LAS (the function directly affected by regularization). However, LASs have three other functions that are important for economic development: valuation, land-use planning, and land development (see Box 1 for a definition of LASs and their functions).

Thus, the creation of an efficient, accessible, reliable, and comprehensive LAS depends on other efforts that extend beyond regularization. Also required are a satisfactory legal framework, institutional structures that facilitate collaboration between the various parts of the system, an efficient and secure mechanism for

processing information, and sufficient resources and technical capacity to carry out all of the functions. Once achieved, an efficient, comprehensive LAS can ensure that the formalization and data completeness generated by regularization are sustainable, as subsequent land tenure changes can be processed rapidly and securely without creating disincentives to registering such changes through formal channels.<sup>12</sup>

The economic benefits of an efficient and complete LAS are not limited to maintaining land tenure formality and its associated benefits. To this should be added the more effective collection of taxes linked to the ownership and transfer of land, as well as improved land development and planning (Figure 1.1).

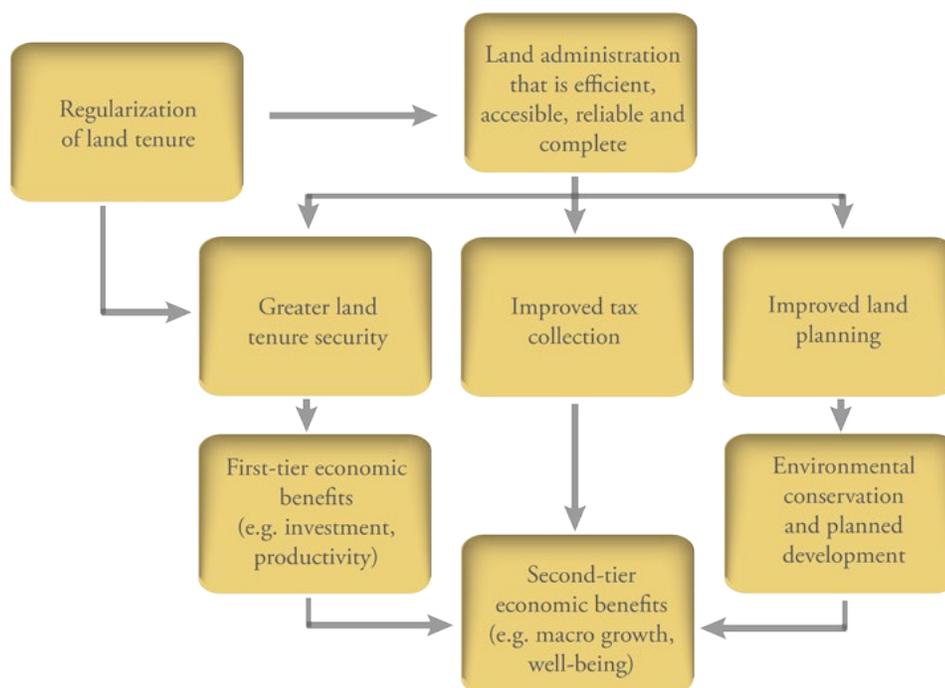


FIGURE 1.1  
Impact of land regularization  
and administration

This aspect is important for the evaluation, as some projects concentrated more on regularization than on LAS improvements, as will be seen later. This implies that the projects that concentrated more on LAS improvements have a better chance of being sustained over time, as LASs in Latin America and the Caribbean face major challenges.

### C. STATUS OF LAND AND LAND ADMINISTRATION SYSTEMS IN LATIN AMERICA AND THE CARIBBEAN

The region faces major challenges in the area of land. First, the region has high levels of land tenure informality and insecurity, in both rural and urban areas. These particularly affect more vulnerable groups (such as low-income individuals, women, and ethnic minorities). These phenomena can be attributed, among other things, to the complexity and cost of administrative processes for registering property; the excessive centralization

of cadastral and registry institutions, limiting access to these services; the complex tenure systems that predominate in the region, which often go beyond the conventional legal concept of property (communal, generational, or family, etc. versus individual private property); a general lack of awareness regarding the benefits of formalization, which encourages a culture of nonregistration; and the presence of tenure conflicts and disputes, and the absence of mechanisms to reduce these.<sup>13</sup>

At the same time, there are a number of institutional, legal, and technical considerations that limit the development of LASs in Latin America. The most significant relates to the separation of the property register and the cadastre, both at the levels of institutions and of information.<sup>14</sup> In general, institutions involved in land administration are poorly integrated, reflecting the lack of a comprehensive vision of the functions and benefits of LASs. In most countries in the region, property registries and cadastral institutions are located in different branches of the government institutional structure. They have differing levels of institutional, technical, and technological development, and they still lack legal and technical mechanisms to facilitate the exchange of information. The English-speaking Caribbean countries are an exception, as all (or most) LAS institutions tend to be concentrated in a single government entity.

As regards the legal and regulatory framework, it is common to find gaps and contradictions in the rules and laws governing property, or an inability to issue and enforce existing regulations. In addition, in some countries in the region, there is resistance from political and economic interest groups to the legal and institutional reforms necessary to strengthen LASs, as well as to the implementation of formalization and registration programs.<sup>15</sup>

Lastly, there are problems in the availability of technical and technological resources for the maintenance of data and the provision of registry and cadastral services. A large amount of paper-based data and documentation is at risk of deterioration, despite efforts made under the land administration programs executed in the region to retrieve, systematize, and digitize that information. Moreover, the level of technical qualifications and academic training among staff involved in registry and cadastral services is low, and there is a scarcity of financial resources to meet demands for technological modernization.<sup>16</sup>

Loan documents for Bank-financed projects (see Section II.A) all confirm these problems. A review of 22 such projects shows that the problems most frequently identified in the loan documents are land tenure informality and deficiencies in LAS data (and administration). According to these documents, these problems are usually the consequence of weaknesses in the legal and regulatory framework, a lack of resources, limited technological capacity, and deficiencies in LAS institutional organization. With a view to resolving these difficulties, the projects planned to support land tenure regularization, activities to improve LAS performance, or both.

**Box 1. DEFINITIONS**

Several terms are used throughout this evaluation, the definitions for which should be clarified. Land administration system (LAS). There is no single definition of an LAS. Some authors limit it to land tenure-related topics—for example, the Food and Agriculture Organization (FAO): “*the way in which the rules of land tenure are applied and made operational*” (FIG [International Federation of Surveyors] and FAO, 2008). Others propose a broader definition—for example, the United Nations Economic Commission for Europe: “*the processes of recording and disseminating information about the ownership, value, and use of land and its associated resources*” (FIG and FAO, 2008).

This evaluation uses the latter definition, which corresponds to the activities included in many Bank-financed projects and is aligned with a modern view of land administration. In effect, the land management paradigm of modern land administration theory sets out four essential functions of LASs (Williamson, et al., 2010):

- i. land tenure,
- ii. validation,
- iii. use, and
- iv. development.

**Cadastré.** The cadastre can be defined as “*a methodically arranged public inventory of data concerning properties within a country or district, based on a survey of their boundaries*” (Henssen, 1995). There are various types of cadastres, depending on the kind of information that they contain:

- Fiscal cadastre: a register of properties and their valuations
- Land use cadastre: a register of land use
- Legal cadastre: a register of land ownership
- Multipurpose cadastre: a register that includes multiple attributes of land parcels

**Land register.** The land register can be understood as “*a process of official recording of rights in land through deeds or as title on properties*” (Henssen, 1995). It constitutes, in effect, a legal cadastre, but this term is rarely used, in order to avoid confusion (as the land register is usually managed by an institution separate from the cadastre).

There are several types of land registers. The first important distinction is in relation to the object that is registered. In this sense, there are two kinds of register:

- *Register of deeds*, when registration (of a deed or title) is not required as an essential requirement for the transfer and establishment of property rights.
- *Title registers*, (real estate folios or land registers), which register property titles, and, therefore, legal rights over a given property (the well-known Torrens systems falls into this category).

A separate distinction should be made in relation to the level of legal responsibility of a register. In this sense, the register can be:

- *Declaratory*, when registration (of a deed or title) is not required as an essential requirement for the transfer and establishment of property rights.
- *Evidentiary*, when registration is essential for the transfer and establishment of property rights.
- *Obligatory*, when sanctions are applied in the event that properties are not registered.

Lastly, it is also important to distinguish between land (or cadastral) registers and other types of registers. A land register contains information regarding legal rights over all real estate located in a given territory (for example, a country). This type of register is evidentiary and tends to be more reliable as it has information concerning the entire territory. A land register is a complete legal cadastre.



# 2 Project Portfolio

## A. PROJECT PORTFOLIO<sup>17</sup>

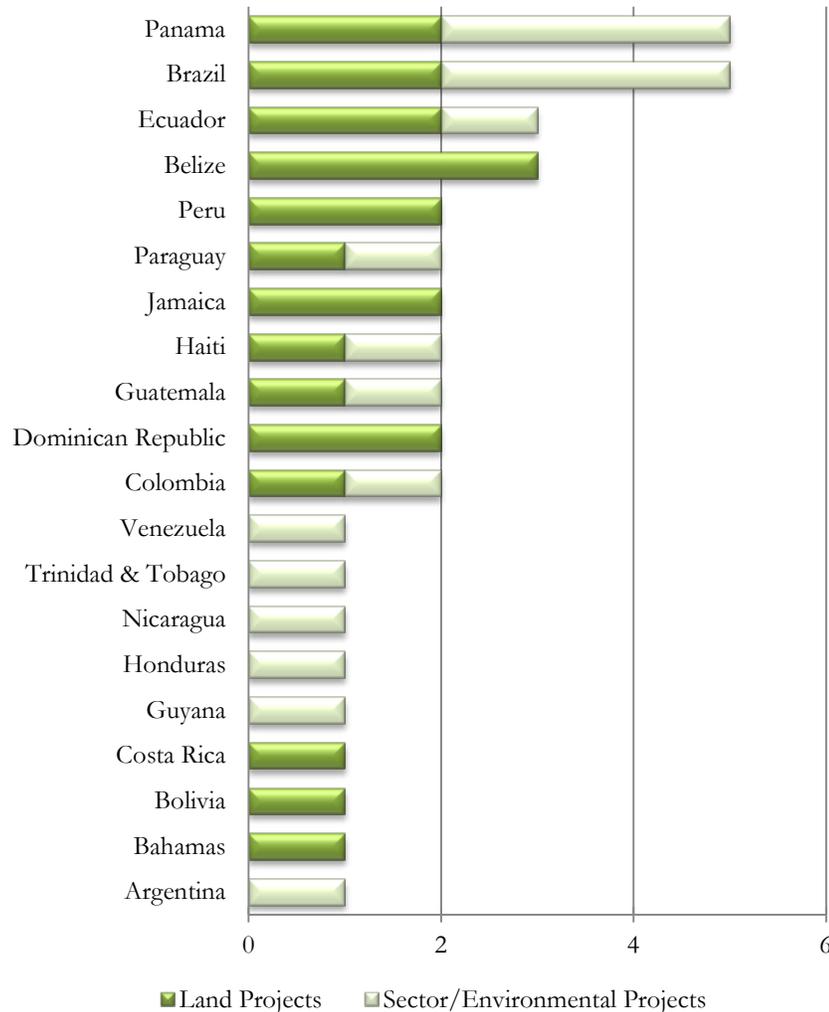
**Since its creation, the Bank has provided continuous support for the execution and financing of land programs in the region. This support has evolved over time—both in terms of the amounts invested and the programmatic emphasis of the projects—in response to altered demands in the region and the level of land market development. Under an initial phase, finance was provided for colonization, settlement, and agrarian reform projects, in accordance with the countries’ general objectives of guaranteeing equitable access to land, promoting the creation of new production areas, and improving standards of living for small-scale rural workers.<sup>18</sup>**

From the 1980s onward, and even though the problem of unequal land distribution remained, country demand was focused on providing legal certainty regarding property, as well as guarantees that this certainty would be sustainable over time. Consistent with this new interest, a second wave of projects was initiated in 1981, focused on supporting the strengthening of property rights through regularization programs, as well as LAS modernization processes.

The IDB has not been alone in these efforts. Other development agencies—mainly the World Bank and the United States Agency for International Development—have also financed several land administration and regularization projects in the region. According to Barnes (2007), the National Land Administration Project financed by the World Bank in 1985 in northeastern Brazil was the pioneering project in this area. However, the IDB had already begun to finance projects of this kind in 1981 (Land Title Regularization Project in Northeastern Brazil, BR-0174).

From 1981 to May 2013, 39 projects were approved for a total nominal value of US\$1.707 billion (slightly more than 13% of the total agricultural portfolio). Although this value is relatively low, the Bank's presence in the region through this type of project has been extensive and constant: they have been executed in 20 of the Bank's 26 borrowing member countries (Figure 2.1) and the number of annual approvals has remained stable since 1991 (Figure 2.2).

**FIGURE 2.1**  
**Countries that have implemented land projects**



It was in the 1990s that these projects gathered pace, against the backdrop of two contemporary trends that appear to have exerted an influence: first, the prevalence of a new economic paradigm based on market liberalization; and second, development of a forward-looking vision of what a modern cadastre should be. Developed between 1994 and 1998 by the Federation of International Surveyors (FIG, by its acronym in French), this vision offers a number of recommendations for cadastral reform projects, and establishes that a “Cadastre 2014” should provide complete documentation regarding public and private rights and restrictions for land owners and users. It should be incorporated into a broader, fully coordinated and automated land information system.”<sup>19</sup>

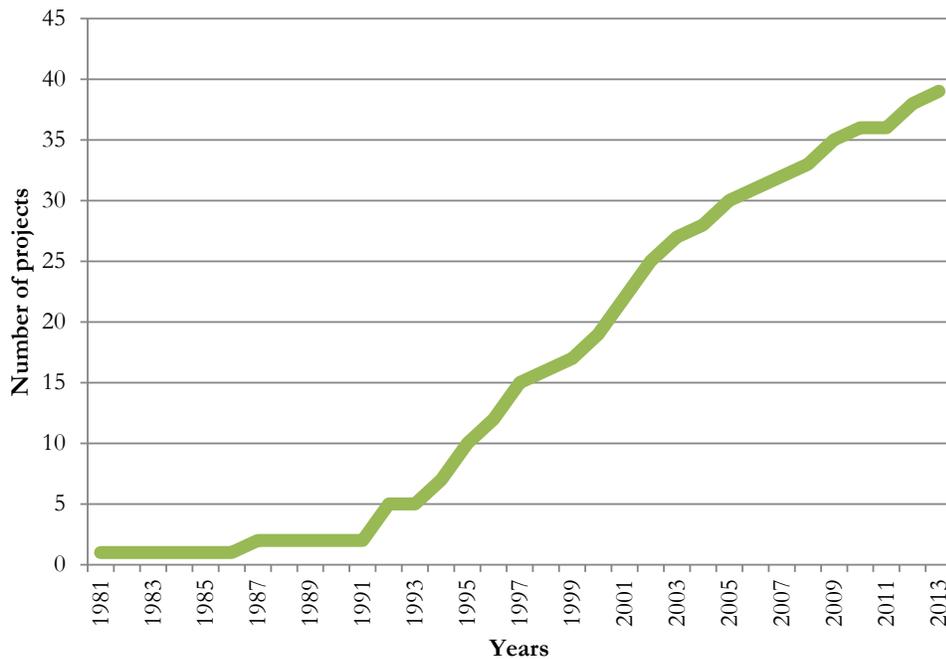


FIGURE 2.2  
Approved land projects,  
1981-2013 (cumulative)

Of the 39 projects approved, 22 (almost US\$530 million) were dedicated exclusively to regularization and LAS-strengthening activities. The other 17 were for the development of agriculture or socially and environmentally strategic areas, and included regularization or LAS-strengthening activities as part of a broader program of support to these sectors or areas (Figure 2.3).

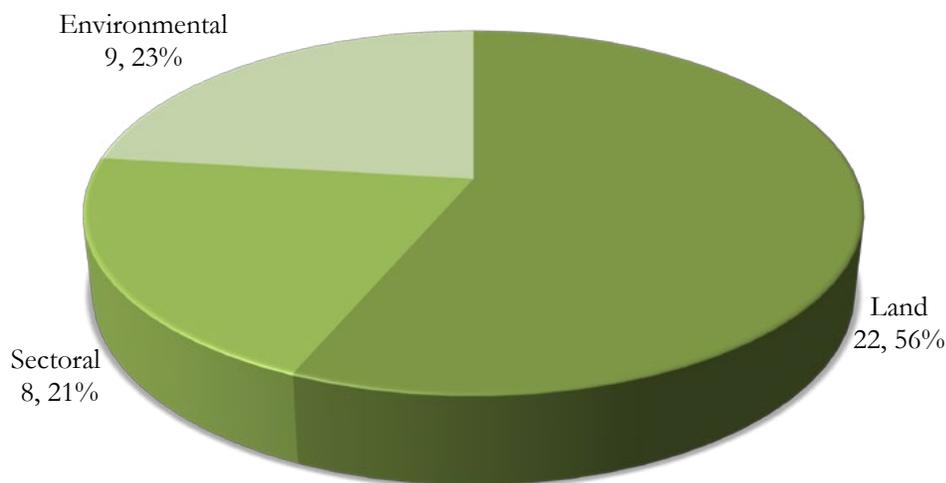


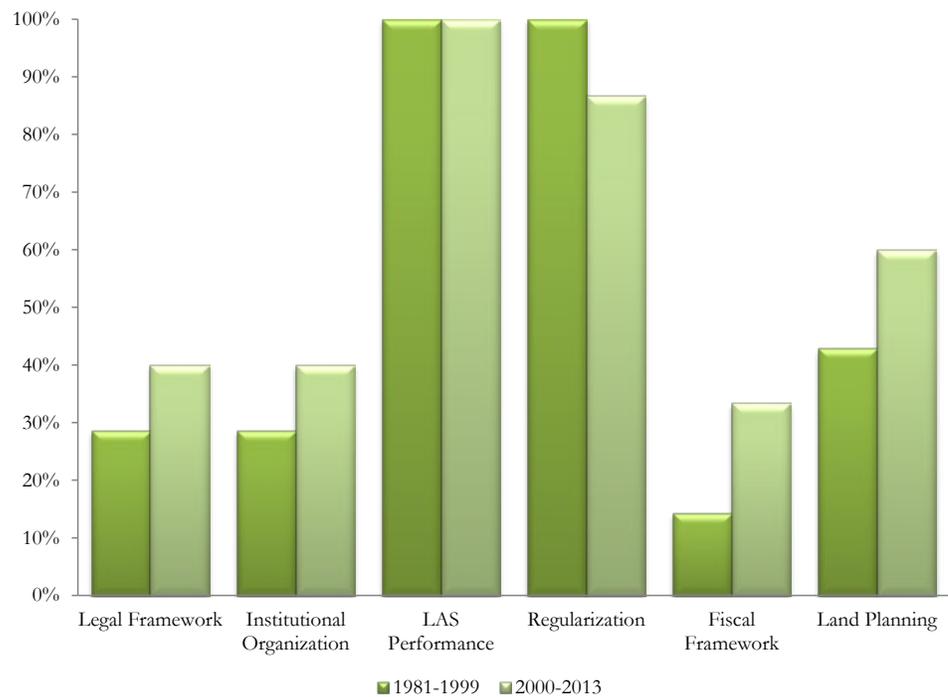
FIGURE 2.3  
Types of land projects

The 22 projects mentioned above constitute the sample on which this evaluation is based (see Section II.C). They were approved in 14 countries, and mostly financed land tenure regularization and LAS-strengthening activities.<sup>20</sup> (A more detailed classification is presented in Section II.B.) A number focused more on regularization than on strengthening of the LAS, as indicated by their explicit and implicit objectives.

Implicit objectives are revealed by relative levels of investment in each type of activity. A project that invests more in regularization than in the LAS reveals an implicit (de facto) regularization objective. Given that the cost of activities of differing characteristics cannot be compared, the fact that a project concentrates to a greater or lesser extent on a certain type of activity is revealed through a comparison of relative funding levels for the different activities (for all portfolio projects).

The most important finding of this portfolio review is that more recent projects (approved since 2000) have focused to a greater extent on improving LASs than on regularization (Figure 2.4). This can be seen in the kinds of problems and causes identified, as well as in the selected objectives, proposed activities, and distribution of project resources among the different activities (implicit objectives). This is a good sign, as it indicates a shift towards projects with potentially more sustainable outcomes (as mentioned above).

**FIGURE 2.4**  
**Percentage of project funds**  
**invested in six areas of activity**



## **B. AREAS OF PROJECT ACTIVITY**

The foregoing analysis is based partly on the construction of a classification of activities financed under the projects. The resulting classification contains six categories, defined according to the type of activities undertaken and the LAS functions that they influence. In addition, the different categories represent elements that can be separated and—from a purely logical standpoint<sup>21</sup>—sequenced in order to facilitate project execution.



This classification of activities is important as it allows the orientation and scope of the projects to be determined, as well as the development of a strategy to reduce possible bottlenecks in the implementation of land regularization and administration projects. For these reasons, the classification constitutes the main criterion used to structure this evaluation.

Land regularization can also have negative effects, such as legitimizing spurious property claims (possibly leading to a loss of property rights by vulnerable individuals) or encouraging land grabs.

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The classification is as follows:

- a. **Legal framework.** Activities related to the analysis and modification of the body of laws and regulations governing land property rights. These can be of two kinds:
  - i. Those that determine the types of land tenure (the land rights of individuals and legal entities and the extent thereof); and
  - ii. Those that determine the conditions and general procedures for acquiring the various types of land tenure.
- b. **LAS institutional organization.** Activities aimed at analyzing and modifying the institutional structures for land administration, including the number of agencies, their responsibilities, and the way in which they coordinate—for example, institutional mergers or the requirement that two institutions (such as the cadastre and the registry) share information.
- c. **Land-use planning.** Activities aimed at improving LAS capacities in relation to the functions of land-use planning and land development.

- d. LAS performance.** Activities to improve LAS functioning without modifications to institutional structures. Examples of these activities include the development of information systems, staff training, and the purchase of equipment.
- e. Regularization.** This refers to the activities of cadastral surveys, adjudication, titling, and registration.
- f. Fiscal framework for land.** Activities linked to the analysis and modification of fiscal regulations governing land tenure and transfer, including tax rates and land valuation methodologies with fiscal objectives.

This classification can be justified for a number of reasons:

- The areas correspond to the different functions of land administration systems. Areas **a**, **b**, **d**, and **e** correspond to the land tenure function; area **c** corresponds to the land use and development functions; and area **f** corresponds to the land valuation function (see Box 1).
- As is the case in the projects, greater emphasis is placed on the land tenure function.
- The classification allows the thematic scope of the projects analyzed to be determined.
- The areas represent a logical order. In other words, a number of the activities under the areas listed first should precede some of those listed subsequently in order to avoid possible complications in implementation.

The sequencing referred to in the last paragraph warrants a brief explanation. From a purely logical standpoint, activities related to the legal framework should be undertaken first, since they can affect the rest. For example, it should be ensured that the law permits mass regularization. Once the necessary adjustments have been made to the legal framework (or once it has been confirmed that the legal framework does not represent an obstacle), the reform of LAS institutional structures can then begin. However, some of these changes need to be undertaken before others, given that their implementation can interrupt the work of the institutions concerned, or render investments in institutional strengthening redundant (for example, when an institution is dissolved).

The area of land-use planning mainly affects two LAS functions that are separate from that of tenure, meaning that many of the tasks in this area can be carried out independently. However, regularization work requires complete information regarding land use if incorrect adjudications are to be avoided. For this reason, some land-use planning tasks (such as delimitation of ecological reserves, for example) should precede those of regularization. Activities to improve LAS functionality should also begin prior to regularization to ensure that the system will be capable of absorbing and managing all of the data generated through regularization (for example, information systems should be either ready or in an advanced state of readiness). Once

a satisfactory legal framework is in place, institutional structures are stable, auxiliary information is complete, and information systems are ready, regularization can move ahead without further complications (beyond those inherent in the process). Lastly, the area concerning the fiscal framework for land has little potential impact on the rest of the activities. From a logical standpoint, therefore, it would seem unnecessary to assign it a specific place in the sequence.

As follows from this explanation, the suggested sequencing is not absolute. In other words, it does not presuppose that all activities in a given area should be completed before activities in another one can begin (in fact, it may often be unnecessary to undertake any activity in a given area). It simply suggests that work in an area located later in the sequence should begin once certain minimum conditions have been met, so as to avoid bottlenecks, interruptions, or redundancies in activities. As will be seen later, a number of weaknesses of this type were observed in the projects analyzed.



# 3 Case Studies

## A. SELECTION OF CASE STUDIES

**Selection of the case studies preceded the portfolio analysis and classification of activities presented above, and was based on a preliminary classification of projects. From the beginning of this evaluation, the decision was made to look at four case studies—a manageable number, but also sufficiently large to allow for matched pairs and reduce the likelihood that one of the case studies would not be comparable.**

The selection was made at the country level, rather than the project level, because when two or more projects have been implemented in a given country, these tend to be linked as parts of a single program (even where this was not the original intention). In fact, one of the two initial criteria for selecting case studies was to take those countries in which more than one land regularization and administration project had been executed, so that the evaluation would benefit from a greater availability of information and increase its relevance.

The other criterion was that projects executed in the country should have encompassed the widest possible range of activities. This was determined based on a preliminary classification of activities different from the one set out above, which consisted of three groups of projects: (a) projects involving regularization, institutional strengthening, and information systems activities; (b) projects focused on institutional reforms and LAS modernization; and (c) sustainable development projects with a land component (see Table 3.1).

The selection of case studies was carried out as follows. Firstly, project group (a) was selected. Secondly, the countries within that group with the highest number of projects were chosen. This resulted in the selection of **Belize, Panama, and Peru**. Ecuador was not selected as the second operation had been approved very recently, and could not therefore be evaluated.<sup>22</sup>

**TABLE 3.1. PRELIMINARY CLASSIFICATION OF LAND PROJECTS**

Operation	Approval Year	Country	Project Name	Status	Group
PE0037	1995	Peru	Land titling and registration project	Completed	1) Projects involved with most of the following: - Information Systems - Institutional Capacity - Surveying - Adjudication - Titling - Registration
PE0107	2001		Land titling and registration program, second phase	Completed	
PN0032	1996	Panama	Agricultural Services Modernization Program	Completed	
PN0148	2002		National Land Management Program	Completed	
PN-L1018	2010		Metropolitan region cadastre and land administration modernization program	Active	
CO0157	1997	Colombia	Land titling & registry modernization	Completed	
BL0007	1997	Belize	TC: Land Administration Program	Completed	
BL0017	2001		Land management program II	Completed	
BL-L1008	2009		Land management program III	Active	
JA0050	1999	Jamaica	Land administration and management program	Completed	
CR0134	2000	Costa Rica	Program for regularization of the cadastre and property registry	Active	
EC0191	2001	Ecuador	Rural land regularization and administration program	Completed	
EC-L1071	2010		National system for rural land information and management and technology infrastructure	Active	
BO0221	2003	Bolivia	Land regularization and legal cadastre program	Active	
BR0392	2005	Brazil	Cadastre and land regularization program	Completed	
PR-L1061	2011	Paraguay	Cadastre and Property Registry Program II	Active	
HA-L1056	---	Haiti	Land Tenure Security Program	Preparation	
DR0118	1997	Dominican Republic	Land jurisdiction modernization program	Completed	2) Concentrated on institutional reforms to improve land administration systems
DR-L1010	2006		Property Jurisdiction Consolidation	Active	
BR0274	2000	Brazil	Self Sufficiency Agrarian Reform Settlement	Completed	
PR0132	2003	Paraguay	Cadastral Registry Program	Completed	
BH-L1001	2004	Bahamas	Land use, policy and administration project	Completed	
GU0081	1996	Guatemala	Sustainable development of Peten	Completed	3) Sustainable development projects with land titling component
BR0313	2002	Brazil	Acre sustainable development	Completed	
HO0198	2002	Honduras	Bay Islands Environmental Management Program II	Completed	

The fourth case study was also sourced from project group (a). The criteria adopted were that the project should already be completed, it should offer points of comparison with the other pre-selected case studies, and that the issue of land regularization should have considerable relevance for the country.

This led to the selection of **Colombia** (CO-0157). According to Management, this operation had a very similar design to the first one in Peru, and was executed almost simultaneously, thus offering a good opportunity for comparative analysis. In addition, the issue of land regularization is particularly important for Colombia given the country's efforts in the area of land restitution. Lastly, it was felt that three further group (a) projects that had already been completed (Brazil BR-0392, Ecuador EC-0191, and Jamaica JA-0050) should be analyzed alongside other projects in the same countries. Such analysis was complicated, however, by the fact that these other projects were either very old (Jamaica), very recent (Ecuador), or of a different type to the one identified in group (a) (Brazil).

## B. PROJECT DESCRIPTIONS

The following paragraphs provide a brief description of the projects analyzed as part of this comparative evaluation, as well as the contexts in which they were implemented. The aim is to give an initial idea of their objectives and development. Annexes 3 through 6 contain analyses of the design and execution of the projects, and the degree of attainment of planned outputs. (Table 3.2 presents a summary of the characteristics of the projects involved.)

**Belize** (see Annex 3). Around the mid-1990s, when the Bank began its collaboration with Belize in this area, the country faced a complex situation of land tenure concentration and informality, resulting partly from a complex legal framework. Belize's legal framework governing land tenure changed substantially over the twentieth century. As a consequence, a variety of forms of land tenure persist in the country, as well as two registry systems and a series of overlapping and sometimes contradictory laws.

Land tenure in Belize is inequitable and often informal. Despite several years of redistribution of state lands, by the 1990s the government had not managed to substantially reduce the concentration of land holdings. At the same time, land tenure informality was high. Belize receives migrants that often travel to rural areas to occupy land.<sup>23</sup> If this were not enough, the slowness and complexity of registration systems acted as a disincentive to land registration, while people receiving state land did not always receive titles that were adequately demarcated, and thus had no guarantee that the lands would not be subject to subsequent dispute. Another land-related problem in Belize concerned tax collection. As a result of high informality and weak institutional capacity in the area of land administration, the Belizean state had very low levels of tax collection for land tenure and transfer.

## BELIZE

TABLE 3.2. BASIC FEATURES OF THE PROJECTS

Country and name of the project	Loan and total project amount	Date of approval and completion	Objectives	Components
<b>Belize</b>				
LMP 1. Land Management Program (BL0007)	US\$902,000 (loan) US\$2,254,000 (total)	1997 (approval) 2001 (completion)	Establish a reliable cadastral system and create an adjudication system to guarantee tenure.	<ul style="list-style-type: none"> <li>i) Administration of cadastres through the computerization of lease, title, and financial registers.</li> <li>ii) Adjudication of land tenure through application of the Land Adjudication Act of 1994.</li> <li>iii) A study of the legislation governing taxes and capital gains, and the design of a new framework for the leasing of state lands.</li> </ul>
LMP 2. Land Management Program (BL0017)	US\$7,000,000 (loan) US\$8,860,000 (total)	2001 (approval) 2011 (completion)	Improve the environment for public and private sector development through improved land tenure security efficient land markets, and promotion of coherent agricultural policy framework that contributes to sustainable development and efficient use of agricultural resources.	<ul style="list-style-type: none"> <li>i) National cadastre and property rights register.</li> <li>ii) Expansion of land administration services.</li> <li>iii) Review of land use planning and its utilization.</li> <li>iv) Reform of agricultural policy and strengthening of the MN REI.</li> </ul>
LMP 3. Land Management Program (BL-L1008)	US\$2,500,000 (loan) US\$2,729,000 (total)	2009 (approval) Active	Consolidate land administration services and extend them to the entire country, to improve access, quality, and efficiency.	<ul style="list-style-type: none"> <li>i) Expansion of the parcel-based cadastral system.</li> <li>ii) Improvement of urban poverty information.</li> <li>iii) Support for the provision of modern land-use planning services.</li> </ul>
<b>Peru</b>				
PTRT 1. Land titling and registration project (PE0037)	US\$21,000,000 (loan) US\$36,500,000 (total)	1996 (approval) 2001 (completion)	Support the creation of a rural land market in Peru that operates in an open, flexible, and transparent manner, through the definitive regularization of ownership of all properties resulting from the agrarian reform, as well as modernization and consolidation of the rural cadastre, and the creation of a single, automated registration system for rural property.	<ul style="list-style-type: none"> <li>i) Land regularization.</li> <li>ii) Cadastre.</li> <li>iii) Public Registry.</li> <li>iv) Administration and monitoring of renewable natural resources.</li> </ul>
PTRT 2. Land titling and registration project, second phase (PE0107)	US\$23,300,000 (loan) US\$46,700,000 (total)	2001 (approval) 2007 (completion)	Continue with the development of a land market that operates in a flexible and transparent manner and that promoted the efficient use of land.	<ul style="list-style-type: none"> <li>i) Cadastre, titling, and registration of rural properties and campesino and native communities.</li> <li>ii) Strengthening of the rural cadastral and registry system and the institutions responsible for it.</li> <li>iii) Environmental and cultural analysis, protection, and monitoring.</li> </ul>

Country and name of the project	Loan and total project amount	Date of approval and completion	Objectives	Components
<b>Panama</b>				
Agricultural Services Modernization Program (PN0032)	US\$33,600,000 (loan) US\$48,000,000 (total)	1996 (approval) 2004 (cierre)	To improve the profitability of the agricultural sector and the quality of produce, as well as to facilitate the Panamanian producers' adaptation to a more competitive economic system through the modernization of a national technology development and transfer, agricultural health and food safety, market information, and land titling.	i) Development and transfer of technology. ii) Agricultural health and food safety. iii) Market information. iv) Land titling.
Land Administration and Regularization Project (PN0148)	US\$27,000,000 (loan) US\$32,000,000 (total)	2002 (approval) 2012 (closed due to merger)	Promote land tenure security with a view to facilitating access to credit and land investment in support of economic growth in rural, periurban, and urban areas of the provinces of Herrera, Los Santos, Veraguas, Coclé, and Colón or other areas that the government may designate in the future.	i) Modernization of national and municipal land administration services. ii) Land regularization services. iii) Development of land markets and the local economy.
National Land Management Program (PN-L1018)	US\$27,000,000 (loan) US\$38,000,000 (total)	2007 (approval) Active (consolidated with PN0148)	Contribute to the country's LAS modernization process, focusing the activities in the Metropolitan Region.	i) Multipurpose cadastre. ii) Land regularization. iii) Municipal land use. iv) New Institutional Framework for Land Administration v) Administration and supervision.
<b>Colombia</b>				
Program for Titling and the Modernization of the Cadastre and Register (CO0157)	US\$38,500,000 (loan) US\$104,000,000 (total)	1997 (approval) 2001 (restructuring)	Support the consolidation of a land market in Colombia that operates in urban and rural areas in a flexible, transparent, and open manner.	i) Titling of undeveloped rural lots. ii) Titling of urban properties. iii) Modernization of the cadastre and register. iv) Environmental protection in rural areas.
Titling and modernization of the register (restructuring of operation CO0157)	US\$14,500,000 (loan) US\$24,395,000 (total) (Remaining values for CO0157 after cancelations)	2001 (restructuring) 2008 (completion)	Support the security of legal right over property through modernization of the cadastral and registry systems, and subject to more limited scope, the titling of rural properties.	i) Modernization of the cadastre and the register. ii) Rural titling.

The Bank has been working with Belize in the area of land regularization and administration since 1997, through three main operations (BL-0007, BL-0017, and BL-L1008). These operations basically constitute three phases of the Land Management Program (LMP). From the beginning, the LMP had two motivations. First, it sought to promote private sector development through increased investment and productivity, mainly in the agricultural sector. Second, it aimed to strengthen the public sector by improving its land administration capacities and thus enhancing revenue.

The program began with the aim of regularizing lands and registering them with the Land Registry, as well as creating an information system to improve tax collection on land transactions and land ownership. The program was ambitious from the start. Activities began simultaneously in several of the major areas identified in this evaluation, but were gradually abandoned in some of them as they became unnecessary, or as the work became unproductive or problematic. This simultaneous approach meant that information gathered during the regularization process had to be kept on paper and processed manually while there was no system. However, the program did show an ability to adapt to the specific conditions of the country.

The first phase involved three main activities: (i) Analysis of the legal and fiscal frameworks for land and the drafting of reform proposals. These reforms were not implemented, however. (ii) Design of a computerized system for the administration of land-related taxes. This system was ultimately very limited and of little use to the country, despite the fact that its scope was broadened in the development phase. (iii) Regularization in the north and south of the country. However, there were a number of difficulties in meeting targets in this area (mainly in the south of the country, where some indigenous groups demanded a type of tenure that is not provided for under Belizean law). During the second phase, analyses and plans were prepared in the area of land development, but the bulk of activities consisted of mass regularization in the north of the country (using a barrido, or full-sweep approach) and development of an information system incorporating all LAS functions. Regularization targets were surpassed, but the information system took longer than expected; for this reason, the third phase (still under execution) has been focused almost exclusively on completing development and implementation of the system.

The LMP faced many significant delays from which important lessons can be drawn in terms of project design and execution, as well as the advantages of integrating the institutions responsible for land administration.

## COLOMBIA

**Colombia** (see Annex 4). Despite numerous efforts since the 1960s to reduce high levels of concentration in property ownership in Colombia, the successful implementation of agrarian reform has proved impossible. From 1994 to 1996, there was an important shift in the orientation of land policy. Policies and institutional changes were implemented that recognized the importance of tenure regularization



for development of the agricultural sector. During this period, the framework for administration of property rights over state and protected lands was reformed, and the Programa Presidencial para la Formalización de la Propiedad y la Modernización de la Titulación Predial [Presidential Program for the Formalization of Property Rights and Modernization of Property Titling] (TITULAR) was created thereafter, with the aim of streamlining processes for the formalization of property rights and undertaking a mass titling program to reduce informality.

In 1997, the country and the Bank signed the Programa Especial para la Formalización de la Propiedad y la Modernización de la Titulación Predial [Special Program for the Formalization of Property Rights and Modernization of Property Titling] (CO-0157). The aim of the project was to bolster land markets in Colombia through activities to formalize property ownership (in both rural and urban areas), modernize the cadastre and land registration systems in the country, and support the protection of environmentally sensitive areas. Within the framework of this program, development of a new titling methodology supervised by TITULAR was planned to enhance efficiency, helping to streamline processes and reduce costs and

Different techniques were used in the demarcation process, from theodolites and total stations, to GPS and digital photogrammetric rectification.

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timeframes for procedures, thus creating incentives for formalization. It also sought to provide resources to allow the cadastral and land registry institutions to move forward with processes of technological modernization that had been hindered by budgetary restrictions.

The initial years of project execution took place against a complex economic and political backdrop. In the years following loan approval, the country had experienced low growth rates and faced serious fiscal difficulties that hindered the flow of counterpart resources. In addition, the change of government in 1998 resulted in a shift in emphasis under the government's rural development strategy away from formalization, and the TITULAR program disappeared. As a consequence, in 2000 the government requested the Bank's support in restructuring the program.

The restructuring resulted not only in a substantial reduction in resources but also in a change in emphasis, with a redirection of activities away from formalization towards modernization of the cadastre and the land register. This implied the cancellation of the urban titling and environmental protection components, a considerable reduction in the rural titling component, and an expansion in the scope of cadastral modernization activities to include updating of the cadastre, design of geographical information systems, and integration of the cadastre and the land register. The Instituto Geográfico Agustín Codazzi [Agustín Codazzi Geographical Institute] (IGAC)—the national cadastral body—became the new executing agency, while the Instituto Nacional para la Reforma Agraria [National Agrarian Reform Institute] (INCORA) supervised the execution of the rural titling component. INCORA was closed and execution of the component was transferred to the recently created Instituto de Desarrollo Rural [Rural Development Institute] (INCODER).

The project took 10 years to execute—6 more than contemplated in the original design and 4 more than contemplated after the project was restructured. Significant execution delays resulted from weaknesses in design, exogenous events that affected the project in its initial years, and fiduciary problems that delayed the execution of modernization activities. Despite this, the program achieved substantial progress in the area of LAS modernization, particularly in relation to design of the methodology for integration of the cadastre and the land register, and technological modernization of the IGAC, which placed the latter at the forefront of cadastral institutions in the region. With respect to titling, the target under the restructured program (which was substantially less ambitious than the original one) was not met, and it has not been possible to establish whether the titles issued were ultimately registered.

## PANAMA

**Panama** (see Annex 5). The Bank has undertaken five operations in Panama in the area of land regularization and administration. Two of these were dedicated exclusively to regularization and LAS modernization activities, while three were either sector or environmental development projects that included tenure regularization components.<sup>24</sup>

The first of these operations was the Agricultural Services Modernization Program (PROMOSA) (PN0032, 1996), which included a pilot component for cadastral and land regularization activities in Veraguas province. Given high levels of informality in rural land tenure, this component was part of a strategy for promoting agricultural investment and access to credit. The outcomes attained under the program in terms of the costs and benefits of cadastral and registration activities led to interest in the country in expanding regularization activities to the national level, as well as in modernizing land administration and policy.

To this end, in 1999 the Government of Panama created the Programa Nacional de Administración de Tierras [National Program for Land Administration] (PRONAT). In 2001, with the support of World Bank funding, regularization activities began in the provinces of Chiriquí and Bocas del Toro, as well as a series of activities to modernize the cadastre and the property register. The government subsequently requested IDB participation, in order to expand the program's geographic coverage. In response, in 2002 the Bank approved project PN0148, which supported an expansion of PRONAT activities to the provinces of Herrera, Los Santos, Coclé, and Colón, and included activities in the areas of the legal framework for property rights (reforming the Agrarian Code), LAS infrastructure (support for implementation of an information system to interconnect cadastral and registration data), and infrastructure for land-use planning. Five years after execution of this project had begun, the Metropolitan Region Cadastre and Land Administration Modernization Program (PN-L1018) was approved. The objective of this operation was to regularize land tenure in the metropolitan area of the province of Panama. As part of this program, and with a view to enhancing the efficiency, agility, and effectiveness of land administration processes in the country, it was proposed that a National Land Administration Authority (ANATI) be created, that would centralize all activities related to the cadastre, regularization, and land-use planning. Two other projects were also approved—one for the province of Darien (PN0116) and another for the Panama Canal watershed (PN0139)—which included regularization components that used the methodology established by PRONAT.

Execution of the regularization and LAS-strengthening activities formulated under these projects was subject to significant delay, owing in large part to problems with the supervision of survey and regularization activities, and with the implementation of information systems to support the processes. Despite this, the operations succeeded in regularizing a high proportion of rural areas in the country. At the same time, weak institutional capacity at ANATI jeopardized continuity of the operations, as the recently created institution had absorbed PRONAT and, with it, responsibility for project execution. From a conceptual standpoint, however, the concentration of land administration-related processes and activities in a single institution is a desirable step that may yield significant long-term benefits.

**Peru** (see Annex 6). The Bank began to work with Peru on land issues in the mid-1990s, at a time when the country was particularly interested in land tenure regularization and allowing development of the agricultural land market.

In 1969, the Peruvian government had carried out an agrarian reform involving the expropriation of large estates and their redistribution to small-scale farmers organized into cooperatives. Later, in 1981, dissolution of the cooperatives was permitted, and this resulted in a fragmentation of land holdings as small parcels were transferred to members. Moreover, given that land sales were prohibited under the agrarian reform, these transfers were carried out informally, often via subdivision of already small land holdings. Lastly, registration procedures were expensive and costly, and rural land owners were generally unaware of them.

As a result, in the late 1980s, a situation prevailed of informal land tenure with fragmentation into microholdings (*minifundios*). Given this situation, at the beginning of the 1990s the government initiated a campaign of mass regularization, using a simplified registration procedure.<sup>25</sup> To carry it out, in 1992 it created the Programa Especial de Titulación de Tierras [Special Program for Land Titling] (PETT), which was responsible for rural areas. Regularization in urban areas came under the purview of the Comisión de Formalización de la Propiedad Informal [Commission for the Formalization of Informal Properties] (COFOPRI), created in 1996 and supported by World Bank funding.<sup>26</sup>

The IDB began to work with Peru on land issues in 1995, through the Programa de Titulación y Registro de Tierras [Land Titling and Registration Program] (PTRT). This program consisted of two phases,<sup>27</sup> both focused on supporting PETT in its rural land regularization activities (first in coastal areas and thereafter in the highlands). The original intention was for regularization to be carried out by private firms, and only in the case of properties that had come under the agrarian reform but for which the titling process had not been completed. This strategy was unsuccessful, however, and in 1997, mass regularization activities were initiated using a *barrido* (full-sweep) approach in selected valleys, carried out by teams hired directly by the Peruvian government. Although the PTRT did not originally have full legal authority to undertake regularization and faced delays, the program significantly surpassed the majority of its targets in this area,<sup>28</sup> and at low cost.

Support was also originally intended under the PTRT for LAS institutional organization, with studies and legal reform proposals to merge both the entities responsible for the cadastre and those responsible for the register. These studies were not carried out, but the country later implemented institutional reforms with similar objectives. The PTRT was also engaged in the area of land-use planning, with the

preparation of studies and delimitation of ecologically or culturally sensitive areas. However, this information could not be used in the work on regularization, due to the incompatibility of formats.

Although the projects financed by the Bank were active in different areas, they strongly emphasized regularization. With the support of the PTRI, PETT became a highly successful program in terms of regularization. Nonetheless, given that the structure of incentives that encourages informality in Peru remains in place, sustainability of the formalization achieved is low.



In all for case studies (Belize, Colombia, Panama and Peru), IDB performed consistently, revealing a land administration system model and a more appropriate regularization strategy.  
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# 4 Project Comparison

## A. GENERAL COMPARISON OF PROJECT STRENGTHS AND WEAKNESSES

**The case studies highlight several positive aspects of the Bank's support. To begin with, it is important to note that the Bank's projects were relevant given the various land administration challenges experienced by the countries when the programs began. In addition, the Bank acted in a consistent way in all four of the cases analyzed, revealing an LAS model and a regularization strategy that it considers to be the most appropriate.**

The LAS model that the Bank pursued under these projects is an integrated one, in which all system functions are either concentrated in a single institution, or, failing this, coordinated through close collaboration agreements and interagency information systems.<sup>29</sup> The model seeks to build a single multipurpose cadastre and a land register.

The most frequently used regularization strategy is a mass one based on a sweep approach, using a variety of cadastral technologies (both modern and traditional) and a participatory adjudication methodology. Consistent with this, the programs analyzed were comprehensive, targeting all four LAS functions (see Box 1).

Another positive aspect is that the Bank demonstrated good response capacity in the face of complications that arose during project execution. In Panama and Peru, for example, selective regularization strategies were replaced by sweeps. Outreach campaigns were also stepped up in Panama in order to boost participation, and a private firm was hired as fiduciary administrator to accelerate execution. In Belize, the decision was made to focus phase three activities on completing the information system before proceeding with regularization, and in Colombia, substantial changes were made to the project to reduce costs and focus on LAS improvements.

Lastly, the Bank also made efforts to introduce modern technology through its projects, mainly in the area of cadastral techniques, but also in information systems. In Belize and Peru, for example, technical cooperation operations were financed to test the feasibility of using GPS (Geographical Positioning Systems) technology for mass demarcation.

Project weaknesses are highly specific. In order to be able to make systematic comparisons among very different programs,<sup>30</sup> the evaluation team developed a general classification of project features. When this classification is cross-tabulated with two major phases in the projects (design and execution), a matrix is obtained (Figure 4.1) in which project weaknesses can be entered in each cell, based on information gathered by the team. The complete matrices for each project are aggregated at the program level, generating aggregate information for each case study. This allows identification of the main weaknesses in the Bank's work for each case study.

**TABLE 4.1. IDENTIFICATION OF THE MOST COMMON WEAKNESSES**

Where is the weakness?			When does the weakness arise?	
Area	Feature	Specific feature	Design	Execution
Solution proposed or implemented	Proposed methodology	Little relation to the problem to be resolved and its causes		
		Completeness (the entire production chain, field diagnostics)	2	
		Implementation strategy (sequence, organization of agencies)	3	1
		Technology used (e.g. information systems, field methodologies, contracts)	4	2
	Adequacy of resources	Human	1	2
		Financial and material		1
		Time		
		Others	2	
Implementation	Risks	Political (will, institutional coordination)	1	3
		Institutional (capacity)	1	1
		Social and economic		1
		Legal (including breach of contract)		3
		Others		
	Fiduciary management		3	
M&E	Monitoring		3	2
	Evaluation		4	

*Note:* The number in each cell refers to the number of case studies exhibiting this type of project weakness.

The classification of project elements is as follows:

- a. Proposed methodology.** Problems with the proposed solution, such as the relationship between the proposed solution and the problems it aims to address; the completeness of the proposal (including the diagnostic assessment and selection of areas for action); the implementation strategy; and the technology used in the various parts of the proposed solution.
- b. Adequacy of funding.** Problems with the diagnostic assessment or the allocation of human, financial, time, and material resources.
- c. Risks.** Anticipation or mitigation (depending on whether the design or execution phases are being discussed) of political, institutional, legal, social, and economic risks.
- d. Fiduciary management.** Problems experienced in this area, given the Bank's fiduciary requirements.
- e. Monitoring.** Problems in monitoring project progress (number and quality of outputs).
- f. Evaluation.** Problems in project evaluability, such as data collection and design of the evaluation strategy.

Table 4.1 summarizes the main weaknesses identified in the case study projects and their frequency. The following paragraphs provide a brief review of the main weaknesses.

**Implementation strategy.** This category refers to intended project implementation: the executing agency; organization of the project in terms of components and execution periods (both in terms of duration and timing); the agencies that were expected to carry out activities (government, private firms, NGOs), etc. Several projects showed weaknesses in this area.

First, the order in which the activities were undertaken was problematic. In the three cases in which mass regularization was carried out (Belize, Panama, and Peru), project designs saw field work beginning before (or at the same time as) design of the information systems that were to receive and process the information generated. In all three cases, the production of information and its receipt by the executing agencies commenced before the systems were ready. In the case of Peru (and in the pilot phase in Panama), regularization activities began in the absence of a legal framework that would allow mass regularization under the program. Lastly, mass regularization in Peru also began without satisfactory information regarding the boundaries of areas that could not be adjudicated owing to their cultural or ecological value.

There were also a number of weaknesses related to the implementation arrangements for regularization activities. In Panama, the desire to proceed rapidly led to several firms being hired to carry out cadastral surveys simultaneously in different areas. This complicated supervision of the firms and ultimately led to delays and low quality outputs. In Peru, regularization was initially carried out by small local companies,

but when these faced difficulties owing to their lack of familiarity with the field, the decision was made to hire teams of students and faculty from local universities and, ultimately, teams of private contractors (known as Grupos de Trabajo Supervisado [Supervised Work Teams], or GTSs). The GTSs made rapid progress and helped the projects to surpass targets for the number of properties regularized. However, a number of people interviewed for this evaluation expressed concerns regarding the quality of cadastral work carried out by the GTSs.

**Technologies employed.** Another common area of design weakness was that of the technologies employed. In other words, the specific features of the proposed solutions did not prove the most suitable for resolving the problems to be addressed. In Belize, for example, the first operation proposed to build an information system exclusively for the collection of land taxes. In the course of project implementation, it became evident that the scope of this system was insufficient to adequately manage collection functions, leading to expansion of the design to include additional modules with other, related functions. The resulting modular system, in turn, still proved to be of limited usefulness, and it was replaced by a new system in the second and third phases. In the cases of Colombia and the first phase in Peru, the proposed regularization techniques were problematic. In Colombia, demand-driven mass titling was proposed, leaving beneficiaries to register their titles and pay the related costs. This is one of the possible reasons that demand was much lower than expected during the execution period for regularization activities. Moreover, although titles were issued, it remains unclear whether the beneficiaries have registered them. In the case of Peru, the original proposal envisaged selective titling and the separation of cadastral and titling activities. This technique was costly and yielded incomplete regularization with numerous gaps. For this reason, the decision was made to integrate titling and cadastral activities, and to adopt a sweep approach in selected areas.

In addition, legal technologies (the contracts of the companies hired to carry out regularization) also contained weaknesses. In Belize, although the company was substantially late in delivering its outputs, there was no contractual penalty for this. In Panama, the payment mechanism for the companies was tied to the work of third parties (the Public Registry), which caused delays in regularization activities.

**Monitoring.** There were also weaknesses in the design phase in terms of the creation of ex ante mechanisms to ensure the delivery and quality of regularization outputs. This significant failure, present in the majority of projects (see paragraph 4.45), has contributed to the inability to exactly determine the number (and location) of regularized properties.

**Evaluation.** Lastly, another recurrent design weakness is the lack of appropriate mechanisms for ensuring future project evaluation. None of the projects contained an adequately-designed mechanism that would allow rigorous evaluation of outcomes and impacts. In Panama and Peru, surveys were carried out during project execution in an attempt to correct this weakness, but the information collected does not allow for a sufficiently rigorous evaluation.

## B. COMPARISON BY AREA OF ACTIVITY

### 1. Legal framework

Within the legal framework, the most relevant laws and regulations for this evaluation are those that determine the conditions and general procedures for acquisition of the various types of tenure, as these can have an impact on regularization activities. In effect, in Panama and Peru, the legal framework required adaptation in order to allow for mass regularization. However, the only work carried out in this area was in Panama, under the second operation. In this case, reforms (designed with the support of Bank financing) were carried out in relation to the Agrarian Code and other legal provisions—specifically in order to permit mass regularization. This raises two questions: Why was no modification of the legal framework necessary in Belize and Colombia in order to carry out regularization, while in Panama and Peru it was? And why was it that the decision was only made to work on modification of the relevant legislation in the second operation financed in Panama?

The experience of the case studies suggests that the answer to the first question lies in the type of institutions that the Bank was working with. In Belize and Colombia, regularization activities were carried out through permanent state entities with clearly established legal powers. In Panama and Peru, on the other hand, regularization was carried out through programs created specifically for this purpose (PRONAT and PETT, respectively) not long before work began, meaning that their powers and procedures had still not been fully established.

The cases of Belize and Colombia are also unique, meaning that the institutional explanation should be interpreted with care. Regularization activities in Colombia were not carried out on a mass level, meaning that government procedures for the formalization of rural properties were not challenged by high operation volumes. In Belize, all land administration functions are concentrated in the Ministry for Natural Resources, and the law grants the ministry broad powers in relation to the determination of land tenure. For this reason, the difficulties that arose when work volumes increased (owing to mass regularization) were resolved within the ministry through technological or administrative adaptations (the adjudication methodology, for example, was modified under the first operation).

In conclusion, it is desirable to work with permanent state institutions (see Chapter 5 Section B) in the area of regularization, as these—to the extent that their powers and procedures are already established—can avoid obstacles related to the legal framework of the country. This is not guaranteed, however, as the mass nature of such work can lead to bottlenecks requiring the modification of existing legislation. It is therefore important to ensure that the legal framework permits planned regularization activities. To this end, a diagnostic assessment of local legislation should always be carried out, and any necessary reforms implemented before regularization begins.

The answer to the second question—as to why the decision was only made in the second Panama operation to work on modifying the relevant legislation—lies in lessons learned. The Bank appears to have learned that it was necessary to ensure that the legal framework was ready during implementation of the financed projects in the case studies. However, it was only necessary to work in this area in the case of Panama.

It is important to note that the first operations in the four case studies were the first four of this kind that the Bank had prepared (see Table 3.1). A lack of experience could have been the reason that none of them included work related to the legal framework. Moreover, in some cases (Belize and Panama), the first operation approached regularization as a pilot program through which potential problems (including legal ones) could be identified. The fact that this kind of work was only done in Panama (in the second operation) is due to the fact that it only remained necessary in this case. In Belize and Colombia there were no problems related to the legal framework. In Peru, the problems faced were resolved under the first operation, after the government issued multiple legal provisions (35 between 1996 and 1998).

Analysis of the Bank's project portfolio (Chapter II and Annex 2) reinforces the argument of a learning process on the part of the Bank. After 2000, the proportion of projects including activities related to the legal framework was greater than before. Moreover, two operations have recently been approved for Haiti based on the following sequence: first, a programmatic operation (HA-L1074) supporting legal reforms and institutions, followed shortly thereafter by an investment operation dedicated exclusively to land issues (HA-L1056).

## **2. LAS institutional organization**

This area of activity is inherently complex. It implies modification of part of the institutional structure of the state, requiring the political will, collaboration, and coordination of all institutions involved. In general, some changes create costs and losers (for example, an institution that is dissolved or absorbed by another); it is therefore logical to expect that some institutions will resist them. At the same time, a solid institutional structure is important for the LAS to function efficiently and reliably.

Consistent with its importance, the Bank has worked in this area in almost all of the cases studied. The only one in which no such work was done was Belize, due to the fact that in that country, all of the entities responsible for land administration are concentrated in one department of the Ministry of Natural Resources. To enhance their efficiency, therefore, requires work within those entities, more than a reorganization.<sup>31</sup> However, even in the case of Belize, the Bank worked from the time of the first operation on implementation of the 1977 Registered Land Act (which seeks to merge the two registry systems into a single one). This led the authorities in 1999 to integrate administration of the older register into the same department of the Ministry of Natural Resources, thus completing concentration of the LAS in that entity.

In the other three cases, the Bank proposed to carry out a series of reforms to reorganize the LAS. These reforms have invariably been aimed at creating an integrated LAS, in which a single, multipurpose cadastre operates in close coordination with a single registry entity. To this end, work was done in Colombia for implementation of Decree 1711 of 1984, which mandates the obligatory exchange of information between the cadastre and the register. In Panama, the various institutions responsible for titling and the cadastre were merged into a single institution. (The exchange of cadastral and registry information was also promoted through the Sistema de Interrelación de la Información del Registro y el Catastro [System for the Exchange of Registry and Cadastral Information] (SIICAR), financed by the World Bank.) In Peru, where institutional dispersion is greater, the Bank sought to take initial steps to integrate both the different institutions responsible for maintaining the cadastre and those responsible for the property register.

The outcome of all of these actions was mixed. Given the complexity of the task, it should perhaps be rated somewhat positively. In Colombia, the Bank managed to boost the exchange of information between the cadastre and the registry to the extent that systems were implemented for this purpose in five municipios.<sup>32</sup> In Panama, the SIICAR (responsibility of the World Bank) was never implemented owing, among other things, to a lack of commitment by the Panama Public Registry to facilitate information sharing between its databases and the cadastre, as well as the marked difference in levels of technological and administrative development between both entities. However, the Bank's work resulted in the creation of a national land authority (ANATI), which incorporated the four entities responsible for the cadastre and land titling (including the same Bank-financed program that had proposed and supported the creation of ANATI). In Peru, achievements were less positive. The studies proposed under the first operation—aimed at proposing legal reforms to merge both the cadastral institutions and the public registry bodies—were not carried out. In addition, the Bank contributed to the multiplicity of registry institutions by establishing Special Sections for Rural Properties.<sup>33</sup> Despite this, in 2002 and 2004, laws were approved promoting both integration of the different registers and creation of the Sistema Nacional Integrado de Catastro [National Integrated Cadastral System]. Although these laws cannot be attributed to the Bank, the possibility that its earlier work and technical dialogue may have influenced these developments cannot be ruled out.

The experience in the area of LAS institutional organization under the four cases analyzed points to two lessons. First, that the Bank is right to engage in this area of activity. Although it is a complex area, it is highly relevant for development of the countries, and there is evidence that the Bank's efforts are bearing fruit. Second, a key factor for obtaining institutional collaboration may be to ensure that all institutions involved are at a similar stage of development (as was the case in Colombia, and in contrast to the situation in Panama).

### 3. Land-use planning

The Bank worked in this area under many of the projects. In most cases, two types of activity were involved: demarcation of sensitive areas (indigenous territories and ecological reserves, for example), and the formulation of land development plans.

The development of these activities and the level of target achievement are different in each of the four cases, but a number of general patterns can be observed. First of all, although the projects succeeded in preparing land development plans, implementation of these lies beyond their area of influence and has not generally occurred (Panama is an exception, with the implementation of the Comprehensive Development Plan in Darién). Second, the Bank has been involved in the demarcation of natural, indigenous, or cultural reserves, but this information has not always been available for use during the regularization process.

### 4. LAS performance

This area of activity is closely linked to what is commonly known in the Bank as “institutional strengthening.” Its objective is to improve the performance of the institutions responsible for land administration insofar as the land tenure function is concerned.<sup>34</sup> Within this, there are several types of activities, including the following:

- Staff training
- Preparation of manuals and process standardization
- Equipment and infrastructure purchases
- Information systems (design and development, or procurement and adaptation)
- Data processing (for example, digitization of deeds and maps)

In the four cases analyzed, the Bank financed several such activities, and generally performed well in relation to its original targets (with the exception of information systems).

In all of the cases analyzed, the Bank proposed and financed the creation of computerized information systems to assist with one or more of the following tasks:<sup>35</sup>

- Land valuation and property tax collection
- Administration and processing of cartographic information (including rectification of aerial photographs)
- Administration of the physical cadastre (including information used in land planning)
- Administration of the register
- Exchange of information between the cadastre and the registry (where these are not interconnected)
- Monitoring of progress in regularization activities

The computerized information systems that carry out these tasks are complex, as they need to be able to manage high volumes of differing types of information (alphanumeric and graphic) in a secure manner, and throughout processes that can be both lengthy and simultaneous. Given these demands, it is unsurprising that the Bank-financed projects faced challenges in this area. The case of Belize, however, suggests that such problems could be avoided if an off-the-shelf system designed by a specialized company is purchased, instead of hiring consultants and attempting to build one in-house.

In Belize, the first operation attempted to develop a computerized information system, with unsatisfactory results. The second operation therefore proposed the creation of a new system that would be much more complete and complex. Responsibility for the design, development, and implementation of the land information system was awarded to a specialized company following an international bidding process. The company used a land administration system that it had previously designed, adapting it to the specific needs of Belize. The task of adaptation does not seem to have been particularly simple either, as it took several years with the support of the company's expert staff; however, it yielded positive results. Belize now has an efficient and secure<sup>36</sup> computerized land administration system that encompasses all of the land administration functions in six offices throughout the country. System operation and maintenance remain a challenge for Belize. However, a positive aspect of the contract signed with the company is the inclusion of training, maintenance, and technical support services, from which the country has benefited.

In Panama and Peru, in contrast, the information systems proposed under the Bank operations have been developed as part of the project by consultants hired for this specific purpose. In both cases, development of the systems in question (SIICAR,<sup>37</sup> SIMA, SSET, SICAR) was either never completed or confronted multiple problems (leading likewise to their nonimplementation), even though their functional scope was significantly less than in Belize.

In summary, the experiences of Belize, Panama, and Peru show a marked difference between the development of these kinds of systems within a project, using consultants, and purchasing them from a specialized firm. The second option appears to offer improved outcomes. Nonetheless, in cases where the information system is simpler, development of the system within the project can be an effective and economical option. In Colombia, the project financed development of the Interrelación Catastro-Registro [Cadastre-Registry Interconnectivity] system (ICARE) and succeeded in interconnecting registry and cadastral databases in five municipios.<sup>38</sup> In any case, the experience demonstrated that the process of putting a functioning, computerized land administration system in place can take several years, regardless of whether it is developed as part of a project or purchased from a specialized company.

Lastly, in evaluating the Bank's operations it is important to remember that off-the-shelf computerized systems for land administration became available only recently. (Landfolio, for example, was purchased for Belize in 2006 and at that stage was still not fully developed.)

Another two types of activities in the area of LAS performance that should be mentioned briefly in this report are equipment purchases and the safeguarding of information. In relation to equipment purchases, these processes proved slow in the cases analyzed, in large part due to a lack of knowledge of the Bank's fiduciary procedures. In some cases, the delays affected progress on other activities, with consequences for both the attainment of targets and the quality of outputs (in Peru, for example, delays in the purchasing of a computer program meant that for several years the rectification of aerial photographs had to be carried out manually instead of digitally). The Bank needs to make special efforts to ensure that this type of administrative activity does not affect the development of key project activities. One possible way of doing this is by providing training in the Bank's fiduciary systems to executing units.

Regarding the safeguarding of information, this consists of protecting all information contained in maps, plans, deeds, and other documents. This work is important not only from a historical point of view, but also for resolving any disputes that might arise during the regularization process (or years thereafter). The Bank has invested resources in these activities, mainly through the digitization of information, which offers the additional advantage of making such data accessible through computerized land administration systems. However, in the four cases analyzed, information still exists that is at risk, and the evaluation team was witness to a number of cases in which key information is in considerable jeopardy.<sup>39</sup>

## 5. Regularization

In this evaluation, regularization is defined as the process of bringing land tenure within a given territory into compliance with the law. This includes the activities of cadastral surveys, adjudication, titling, and registration.

Activities were carried out in this area in the four case studies, with the result that a large part of the territories of each country was regularized (with the exception of Colombia, where regularization was limited in scope). The Bank used different methodologies to determine which properties would be regularized (selective and *barrido*, or full-sweep, approaches) and to carry out cadastral surveys of the properties (specifically, the cartographic method). The different experiences yield valuable lessons.

First, regularization progresses much more quickly and is much more complete when the sweep approach is used. In Peru, the first operation intended to regularize only those properties for which titles had not been issued (or had remained incomplete) during the agrarian reform. Thus, it was initially proposed that the field teams should advance

property by property, identifying those eligible for regularization. This constituted a major obstacle to international bidding, as there was little interest among private firms in doing this work. The decision was then made to select a number of valleys<sup>40</sup> and conduct a sweep of all properties within them, regularizing all that required it. With this technique, work proceeded at a much faster pace and almost all of the targets in the area of regularization were surpassed.

The sweep approach has yielded positive results in other cases, including Belize and Panama. In Colombia, however, the approach was based on the demand of potential beneficiaries, who were to be notified of the regularization through a publicity campaign. Owing to this, and a lack of counterpart funding, regularization activities never reached mass dimensions, and only 8,446 titles were issued, compared to a target of over 108,000.

Another methodological aspect that should be highlighted relates to the different demarcation techniques that were employed. The projects attempted to use the most appropriate technology for each specific situation, with a view to reducing times and costs and enhancing precision. In Belize and Peru, the Bank financed technical cooperation operations to test the use of GPS tools in cadastral surveys, something that was innovative at the time. This technique was used successfully in rural areas of Belize, yielding important benefits in terms of precision. In Peru, where terrain conditions were very varied and a number of the properties very small, different techniques were used in the demarcation process, from theodolites and total stations, to GPS and digital photogrammetric rectification. Likewise, in Panama, a number of techniques were used, although photogrammetry and GPS predominated.

The use of different demarcation techniques added flexibility to these tasks and allowed the cadastre to be compiled or updated in the fastest and most economical way possible given terrain conditions. However, on a number of occasions the approach adopted was the result of limitations in teams or in technical knowledge. In Peru, for example, photogrammetric rectification was carried out manually for a large part of the two operations, as procurement of the computer program to enable digital rectification was subject to lengthy delays. In Belize, most of the rural cadastre was compiled using GPS equipment, which yielded a high level of relative precision.<sup>41</sup> However, the company responsible suffered delays as a result of a lack of local staff with knowledge of this technique, and for this reason theodolites and total stations were used in a number of the areas contracted out to local surveyors. The result is that the cadastres compiled vary in their levels of precision.<sup>42</sup> Nonetheless, precision of the cadastre does not appear to be a particularly important factor as long as it is not so low that it prevents identification of properties or creates disputes between neighboring property owners.<sup>43</sup>

One cause for concern in the case studies relates to the completeness of the physical and legal cadastre. In this area, a relatively complete cadastre was achieved in Belize, although it is possible that there are properties without titles due to the owner's absence

at the time the regularization teams visited.<sup>44</sup> In Peru, regularization efforts were made only in selected valleys, leaving large areas unregularized. In Panama, projects financed by the IDB and the World Bank carried out regularization in the country's nine provinces (and demarcated five indigenous territories), yet many small areas were left unregularized, either because the companies responsible did not cover them or because in doing so they met with varying obstacles. The result is an incomplete physical and legal cadastre, sprinkled with unregularized areas (known by PRONAT staff as the "dalmatian effect"). Lastly, in Colombia, regularization efforts were limited in scope and had only a marginal impact on the situation of informality in land tenure in the country.<sup>45</sup>

Table 4.2 presents a summary of achievements in the area of regularization under each of the four case studies. These outputs (number of properties surveyed, titled, and registered) are easier to compare across projects and countries than those linked to institutional changes. For this reason, Table 4.3 presents a comparison of the costs and timescales required to deliver these outputs. Nonetheless, even in these cases it is important to bear in mind that the comparison is not entirely fair, as terrain conditions and the size of properties varied across case studies. These factors have a direct impact on production costs and timescales.

**TABLE 4.2. COMPARATIVE SUMMARY OF REGULARIZATION OUTPUTS**

Output	Country	Target	Attained	Comment
Properties regularized	Belize	49,300	48,543	Includes a target of 21,300 of urban properties and 20,728 attained.
	Colombia	108,946	268,497	Includes properties cadastred and updated, urban and rural.
	Panama	407,568	209,581	
	Peru	1,350,000	1,988,300	
Properties with titles issued/ adjudicated	Belize	49,300	48,543	Includes a target of 21,300 of urban properties and 20,728 attained.
	Colombia	108,946	8,446	
	Panama	442,116	155,868	Includes a target of 267,500 of urban properties and 84,920 attained.
	Peru	778,132	1,988,300	
Properties registered	Belize	16,000	18,913	Includes a target of 500 of urban properties and 349 attained.
	Colombia	108,946	n.d.	
	Panama	567,732	185,097	Includes a target of 267,500 of urban properties and 84,920 attained.
	Peru	1,298,132	1,804,777	

Belize: Includes three projects: BL0007, BL0017 and BL-L1008.

Colombia: Includes targets and outputs before and after restructuring.

Panama: Includes five projects: PN0116, PN0032, PN0148, PN-L1018 and PN0139.

Peru: Includes two projects: PE0037 and PE0107. The indicators include properties that originally had different legal statuses.

TABLE 4.3. RELATIVE EFFICIENCY OF REGULARIZATION

	Cadastred	Titled	Registered
<b>US\$/property [...]</b>			
<b>BL0007</b>	\$88.8	\$88.8	\$88.8
<b>BL0017</b>	\$55.9	\$55.9	\$164.9
<b>BL-L1008</b>	n.a.	n.a.	n.a.
<b>CO0157</b>	\$27.5	\$72.3	n.a.
<b>PE0037</b>	\$21.7	\$21.7	\$25.7
<b>PE0107</b>	\$38.0	\$38.0	\$38.0
<b>PN0148</b>	\$222.0	\$289.9	\$289.9
<b>PN-L1018</b>	\$220.2	\$117.5	\$117.5
<b>Days/property [...]</b>			
<b>BL0007</b>	0.520	0.520	0.520
<b>BL0017</b>	0.074	0.074	0.218
<b>BL-L1008</b>	n.a.	n.a.	n.a.
<b>CO0157</b>	0.315	0.441	n.a.
<b>PE0037</b>	0.002	0.002	0.002
<b>PE0107</b>	0.003	0.003	0.003
<b>PN0148</b>	0.067	0.100	0.100
<b>PN-L1018</b>	0.063	0.033	0.033

Source: OVE, based on information taken from a variety of project administrative documents

Another common weakness in the four experiences is the lack of a monitoring system. As designed, none of the projects in the four case studies contemplated a system for monitoring regularization efforts before these began. In Belize, folios were processed manually using the reports of the firms hired as a monitoring mechanism. In Colombia, following restructuring of the program, the executing agency was exempted from developing a monitoring system as it was felt that this did not create value added for the project. In Panama, the Bank implemented several monitoring systems in regional offices (known, overall, as SIICARITO). Lastly, in Peru, several temporary monitoring systems were developed during the second operation.

The absence of adequate systems that are ready from the beginning to support monitoring of regularization efforts (and administration of the information generated) creates difficulties for the Bank and executing agencies in assessing the progress of these efforts, areas that are behind schedule or not covered, and the quality of outputs. This is reflected in the fact that OVE could not obtain precise information regarding the number of properties regularized in Peru, Panama, and Colombia.<sup>46</sup>

In terms of quality control, most of the projects analyzed also failed to include in robust mechanisms in their designs. Instead, various solutions were adopted as problems were encountered. In Belize, the quality of regularization work was supervised

informally by executing agency staff. It was only once systematic weaknesses were detected in some outputs (aerial photographs of Belize City) that an expert consultant was hired to check them. In Panama, the executing agency assigned a small unit to control the quality of title folios before they were sent to the registry. In the project for Panama's metropolitan region, however, it was decided that quality control for urban folios would be placed in the hands of a private firm. In Peru, responsibility for regularization activities fell to teams organized into a pyramid structure for purposes of supervision. However, the multiplicity of teams (that at one time numbered more than 1,000) hindered supervision by the central project administration. According to several people interviewed by OVE, there are indications that performance of the teams and their products were not always satisfactory.

Another common weakness in the projects analyzed is the lack of methodical tenure studies carried out prior to regularization. These studies allow property numbers and characteristics to be estimated for the areas to be regularized, so that time scales, costs, and realistic targets can be established. In Belize, the number of properties to be regularized was underestimated; given that the contract with the company responsible for regularization stipulated a fixed payment for each property regularized, this ran the risk of raising the costs of the second operation. In light of this, and taking advantage of delays on the part of the firm, the executing agency decided to contract smaller properties out to local surveyors at lower cost. In Panama, a lack of tenure studies led to inadequately designed contracts with the firms responsible for the cadastral survey. The total number of properties and the number of irregular properties were underestimated, leading some firms to finish the stipulated work without having covered the entire area. In Peru, the first operation based its estimates on preliminary information from the agricultural census, which resulted in an underestimate of the number of properties to be regularized.

A comparison of the case studies also reveals that there are often problems in the contracts with the firms responsible for regularization activities (beyond those stemming from the lack of tenure studies). These problems usually have significant consequences in terms of costs and output completion, making it important to seek new contract designs that incorporate prior experiences. In the case of Belize, the contract did not contain a clause providing for a financial penalty in the event of late delivery of outputs by the firm. This meant that the executing agency had little leverage over the firm when delays occurred. In Panama, three contract-related problems were experienced. First, the contract stipulated that companies would receive payment based on the number of titles issued to beneficiaries. This led to field work being suspended due to a lack of funding while the Panamanian authorities processed title folios created in the field. Second, a number of weaknesses in the definition of what constituted a property led companies to try and charge for the demarcation of areas that were not properties from the project's standpoint (such as pathways and water bodies).

Third, to accelerate work, the project hired several companies to work simultaneously in different parts of Panamanian territory. This complicated monitoring and quality control, and ultimately led to delays.

Just as the comparison of case studies has highlighted a number of shortcomings, it has also revealed some positive aspects. These four cases show that the Bank is applying a participatory adjudication model that helps to legitimize the regularization process. In Belize, Panama, and Peru, property adjudication was carried out based on consultations with the owners of neighboring properties first, and subsequently publishing cadastral maps in visible locations, so as to allow opportunity for disagreements or disputes to be voiced prior to the issuance and registration of titles. In addition, outreach campaigns were carried out to inform local populations of the regularization efforts and to explain their advantages and procedures. Many of the projects analyzed also included dispute resolution mechanisms. Lastly, in those cases where the property was in the possession of a household consisting of a couple, then unless there was sufficient evidence that only one of them was the legitimate property owner, the title was issued in the name of both spouses. This approach was supportive of gender equality and mainly benefited women.

In summary, the case studies provide evidence of a relevant body of work in the area of regularization. It is relevant both on account of the levels of informality that prevailed in the countries when the projects were approved, and in view of the number of properties regularized (except in the case of Colombia). The Bank's work had several positive aspects, such as the use of modern technology and different demarcation techniques depending on terrain conditions; use of the sweep method for selecting properties (although this was not proposed under all projects); and the use of a participatory adjudication method. Yet there were also weaknesses that could have been avoided: the lack of tenure studies; the design of contracts without penalties in the event of delays by the companies responsible for cadastral surveys, and with poorly-defined concepts and perverse incentives; and the lack of robust monitoring mechanisms.

## **6. Fiscal framework**

This was the area in which the least work was undertaken in the four cases analyzed, and there is insufficient information on which to base comparative conclusions. In Belize, the Bank financed the development of proposals for changes to valuation methodologies and land tax rates, but these were not implemented. In Panama, a property valuation model was developed and a system is being developed for administration of the physical, legal, and fiscal information relating to properties in the Panama City metropolitan area.



The evaluation has found significant improvements in LAS performance (Belize and Colombia), as well as significant and promising changes in institutional structures of land administration systems, some of which were attributable to Bank support (Panama) and others not (Belize and Peru).  
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# 5 Conclusions and Recommendations

## A. OVERALL ASSESSMENT OF THE CASE STUDIES

The Bank has spent several years investing large sums in land tenure regularization and the strengthening of land administration systems in Latin American and Caribbean countries. These activities are very relevant for the region, given the high levels of informal land tenure that persist, as well as low levels of investment and access to credit on the part of a large number of small-scale agricultural producers. Economic theory indicates that land tenure regularization and more efficient and comprehensive land administration can yield a series of significant economic benefits. However, the materialization of these benefits depends on multiple factors, many of which lie beyond the projects' sphere of influence. This does not diminish their relevance, as they retain the potential for eliminating significant (although not the only) hurdles to economic growth.

The projects analyzed in this evaluation did not include adequate evaluation strategies in their design. It is thus impossible to know for certain<sup>47</sup> what their outcomes have been in terms of economic and social development. In Panama and Peru, the Bank carried out surveys of beneficiary households and hired external consultants to evaluate the projects. However, the limitations of the data used in these assessments mean that their results can only be seen as indicative. Overall, the available evidence suggests that Bank projects may have raised the value of the regularized properties (Peru), investment in them (Panama and Peru), and the hours worked by beneficiaries (Peru).<sup>48</sup>

In addition, the evaluation has found significant improvements in LAS performance (Belize and Colombia), as well as significant and promising changes in LAS institutional structures, some of which were attributable to Bank support (Panama) and others not (Belize and Peru). The projects also yielded significant progress in levels of formal land tenure (Belize, Panama, and Peru) and updated cadastral coverage (Belize, Colombia, Panama, and Peru). However, the evaluation also found two weaknesses in these achievements. First, there are indications that the quality of some of the outputs may be less than originally hoped for (Panama, Peru, and some parts of Belize). Second, and perhaps more importantly, there are reasons to doubt the sustainability of these achievements. In Belize, human resource capacities are weak, in terms of both operating the new information system and supplying high quality data for it. In Panama, the institutional capacity of the new national land authority is still very low, and the land administration system retains those features that originally led to informality in land tenure. The latter has also occurred in Peru, where the projects made substantial progress in terms of regularization, but failed to change the incentives that drive informality or strengthen the institutions that make up the LAS. It is important to point out that the latter is not necessarily the Bank's responsibility—rather, it depends on the objectives that the country sets for itself.

What, then, were the aspects of the projects that failed, and what elements worked well? As regards the failures, the projects did not undertake sufficient diagnostic work (e.g. relating to the legal framework, or comprehensive tenure studies); implementation strategies proved problematic (e.g. all activities were undertaken simultaneously, regularization strategies had to be changed to a sweep approach); there were difficulties with the technology used (the majority of the information systems were not satisfactorily completed, contracts with the companies responsible for regularization were deficient); and provisions for the monitoring and evaluation of regularization activities were very weak. Although attempts were made to resolve these weaknesses during project execution, they had major consequences in terms of delays, the completion and quality of outputs, and, therefore, the attainment of outcomes.

In terms of the aspects that worked well, apart from their outputs and possible development outcomes, the projects were generally careful to select low-cost field methodologies capable of delivering high quality outputs. Demarcation, for instance, was carried out based on the innovative use of GPS technology or on the adoption of other low-cost, mass methodologies appropriate for the requirements of each case. The adjudication methodology was participatory and based on consultations and community publicity, supported by prior outreach campaigns.

The projects also demonstrated good response and adaptation capacities in the face of changing circumstances, modifying selection criteria for the properties to be regularized, creating new organizational structures for field work, and even abandoning

or reducing work in areas where advancement relied on previous progress in other areas.

In a comparative evaluation such as this, there is an inevitable need to provide an overall assessment the projects. This should be done, and interpreted, with care, based on an understanding that the objective information available is insufficient to draw incontrovertible conclusions.

The four case studies are different and exhibit different strengths and weaknesses. Among the cases analyzed, those of Panama and Peru were relatively more focused on regularization than on LAS strengthening. Peru's Land Titling and Registration Program (PTRT) is, undoubtedly, the program that succeeded in regularizing the highest number of properties, and in the most efficient way (at lower cost and in a shorter time period). However, regularization was not spatially continuous (having been carried out in valleys located in disparate areas throughout the country), and there is no information that would allow the quality or exact quantity of work to be determined. Moreover, the program did not succeed in substantially improving LAS performance or any of the other factors that cause informality. Thus, regularization achievements lack sustainability.

In Panama, likewise, a high number of properties have been regularized throughout the country (in collaboration with the World Bank). Geographical progress in regularization has been more continuous than in Peru, but several areas have also been left unregularized. Quality control was more centralized in Panama, yet the Bank still does not have the information necessary in this case to determine the quality or exact quantity of regularization work completed. In terms of LAS improvements, the program took an important step with the creation of ANATI. However, the institution remains weak and its sustainability is in question.

The case of Colombia is the weakest in terms of regularization—less than 9,000 titles were issued, and it has not been possible to confirm whether these were registered or not. Despite this, the project in Colombia is of interest as it made significant progress in strengthening the LAS, despite difficulties experienced in the early stages of execution. The project restructuring emphasized institutional aspects, and thus led to substantial improvements in cadastral technical capacities and the launch of a process of information sharing with the registry. These achievements have proven sustainable, as the country has continued to develop these activities independently.

Lastly, the case of Belize offers solid balance and progress in terms of both regularization and LAS strengthening. The Land Management Program succeeded in regularizing most of the northern part of the country in a spatially continuous manner (i.e. without leaving unregularized areas), as well as a number of the main urban areas. It also managed to implement an information system that integrates



The region has high levels of land tenure informality and insecurity, in both rural and urban areas which particularly affect more vulnerable groups (such as low-income individuals, women, and ethnic minorities).

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all areas of the LAS in an efficient and secure way (the only one of the four cases analyzed to achieve this). The existence of this system, added to the fact that the entire LAS is concentrated within a single government agency, indicates that Belize has high potential for developing an efficient, accessible, comprehensive, and reliable LAS. The achievement and sustainability of such a system depend on the technical capacity of the staff in charge of the LAS and the resources that are dedicated to its maintenance.

## **B. IMPORTANT FEATURES AND LESSONS FROM THE CASE STUDIES**

This evaluation does not aim to draw any general conclusions regarding the Bank's performance in land regularization and administration projects. Only nine projects in four countries have been analyzed here, and are not, therefore, representative of the Bank's full work in the area. What lessons can be learned, then, from this comparative evaluation? The following paragraphs discuss various important features of the land regularization and administration projects that became apparent during the evaluation. More than specific recommendations regarding these aspects, they constitute suggestions that should be kept in mind in future projects of this kind.

**Diagnostic assessment, monitoring, and evaluation.** These are three important aspects that exhibited significant weaknesses in the projects analyzed. This means that the Bank has worked with less information than would be desirable. Diagnostic

assessments are important for establishing the magnitude of a problem and designing solutions. In the area of regularization, specifically, tenure studies are crucial for determining the number of properties that are likely to be encountered in the field, as well as their legal status. Such information, in turn, is necessary for the satisfactory design of contracts with the companies responsible for regularization work, and thus for achieving better outputs at lower cost and in a shorter time. The Bank should dedicate more time and resources to conducting comprehensive tenure studies prior to regularization activities. One possibility would be to include these studies in a pilot program that would lead into a larger program (see below).

The Bank should also invest more time and resources in ensuring that projects (particularly regularization activities) can be closely monitored during execution. The Bank needs greater information regarding the completion of outputs, not only in quantitative terms, but also from a qualitative standpoint. This also applies to regularization work in particular. The Bank needs to be sure that all areas selected for regularization are being covered, that all folios have been processed by the time titles are issued to property owners, and that the quality of work meets agreed levels. In order to obtain such information, monitoring mechanisms need to be designed and implemented before regularization activities begin, not simultaneously.

Lastly, information is needed to evaluate project outcomes. The literature offers a number of reasons for expecting that land tenure regularization and LAS strengthening will have positive economic effects. Empirical evidence is limited, however, and one cannot therefore rely on previous experiences to conclude for certain that this kind of project will yield economic benefits. Above all, it cannot be assumed that the economic benefits of these projects will exceed their costs, and that investments in them represent a better use of scarce resources than investments in other activities.<sup>49</sup> Even without taking alternative uses for resources into account, evaluation is also necessary in order to choose between different potential solutions.<sup>50</sup>

Evaluation is also needed to ensure that land administration and regularization projects are not having detrimental effects. There are significant risks associated with the regularization and titling of land, such as seizure and concentration of lands, and unwanted changes in land use. Given this possibility, evaluations of these projects must determine the projects' effects on various social and environmental outcomes, such as the distribution of land tenure, poverty, and deforestation.

**Solution implemented.** In the four cases analyzed, the Bank has pursued an integrated LAS model consisting, among other things, of a multipurpose cadastre and a land register (see Box 1). This corresponds to a modern view of land administration and enhances the relevance of the Bank's work. However, the Bank could enhance its relevance by determining more precisely the countries' needs and the best available solutions.

Although, for example, the Bank appears to have struck a good balance between cost and precision in demarcation processes, it might be a good idea to use more precise techniques as technology advances and becomes more accessible (as long as additional costs are not too high and care is taken to avoid creating land disputes).<sup>51</sup> In terms of the type of register, a land register is generally simpler and more reliable than a register of deeds. However, given a solid framework of incentives and specifications, a register of deeds can be as reliable and comprehensive as a land register, but more economical (particularly if the existing one is based on deeds).<sup>52</sup>

**Specific design features of land regularization and administration projects.** The following paragraphs discuss possible solutions to some of the problems experienced by the projects analyzed in this evaluation.

- a. Sequencing of activities.** This evaluation defined six areas of activity under the projects: (i) legal framework governing land property rights; (ii) LAS institutional organization; (iii) land-use planning; (iv) LAS performance; (v) regularization; and (vi) fiscal framework. The projects analyzed tackled several of these areas simultaneously, creating inefficiencies and possibly even jeopardizing project achievements. From a purely logical standpoint,<sup>53</sup> it is better to adopt a sequenced approach to activities in these areas (see Chapter 2 Section B).

Establishing a logical sequence does not mean that all work in one area needs to be completed before another can begin; rather, it implies that any activities that are required in order to carry out another activity should be implemented first. Some activities are not required as an input into any other and can thus be carried out alongside the rest, but this is not always the case. In designing a sequenced project, therefore, it is only necessary to sequence those activities that are crucial for the success of subsequent ones.

The Bank appears to be attempting to adopt a sequential approach in some countries. In the Dominican Republic and Paraguay, for example, work has only been carried out in relation to the legal framework and LAS institutional organization; no regularization activities have yet been carried out. (The project approved in 2011 for Paraguay already planned to undertake regularization.) More recently, approval of legal reforms has been promoted in Haiti through a policy-based loan (HA-L1074), prior to approving a land regularization project.

- b. Duration.** All of the projects analyzed in this evaluation experienced delays and exceeded their originally-planned execution periods. This appears to have been more the consequence of a design failure than one of execution. Land regularization and administration projects are complex and lengthy, particularly if they involve changes in LAS institutional structures or regularization of a large number of properties. In light of this, planned execution periods for these

projects should be questioned, as well as the advisability of executing the full range of activities under a single loan operation (that is then expanded under subsequent phases).

**Structuring of programs.** If the aforementioned points regarding sequencing and duration are taken together, it seems logical to consider the possibility of designing land regularization and administration projects as programs—in other words, as a collection of sequenced, coordinated projects, each one (possibly) making use of different instruments, and with different levels of funding, durations, and specific objectives (a strategy similar to the one that is being attempted in Haiti). The logical advisability of designing programs of this kind has to be weighed against the execution challenges that they may present, as well as (and even more importantly) the risk that the program will lose political support during its execution and fail to be completed. Rather than inhibiting innovation and promoting a return to a habitual business model, however, such considerations should encourage creative thinking in the Bank, with the creation of new cooperation instruments that would allow this type of project to be executed while reducing associated risks. One possibility is to conduct a pilot regularization project at the beginning of the program. This could help to both fine-tune diagnostic assessments for the territory concerned and demonstrate potential benefits of the program (using an impact evaluation), thus boosting interest in the project.

- c. Support for permanent institutions.** In two of the four cases analyzed in this evaluation, the Bank focused support on temporary institutions. In Panama, it supported PRONAT, and in Peru, it supported PETT. In both cases, these institutions were slated for dissolution, taking with them a large part of the investment in institutional capacity made under the projects.

In the interests of sustainability, it is important that the Bank concentrate its efforts on supporting permanent institutions. In this sense, organization of the institutional structure for the LAS may be a priority task in some countries. Implementation of the reforms that this requires is not a decision for the Bank, justifying the support that it has had to provide to temporary institutions. However, even in these cases, it is important to try and ensure that the institutional strengthening and learning generated during the project are directed towards (or at least shared by) permanent institutions that can absorb project functions towards the end of the execution period.

- d. Information systems.** An important component of the LAS is the system for administering land-related information, including graphic cadastral information, registry and land-use information, and fiscal information. These systems are necessarily complex, as they consolidate large volumes of dynamic information of many kinds, sources, and uses. The four case studies analyzed all faced problems in developing these systems at one point or another. In some cases, the problems

were mainly the result of weak institutional collaboration (Colombia). In others, however, they were largely technical (Belize, Panama, and Peru). Of the four, the most successful case in this area is Belize, where an off-the-shelf technological solution was ultimately acquired from a specialized firm. Previous attempts to develop the system in-house had resulted in slow and unsatisfactory progress, as experienced under the other case studies.

A few years ago it was impossible to purchase a predesigned product of this nature, but this is now a promising option for other countries.

- e. Contracts.** A concern that arose almost invariably in the projects analyzed related to the design or enforcement of contracts with the firms responsible for regularization activities. Several problems were reported: (i) firms that used ambiguities in the contracts to minimize work and maximize billing; (ii) firms that decided which parts of the territory they could cover most quickly while charging the same amount; and (iii) firms that failed to comply with the contract, either in terms of timeframes or the quantity and quality of outputs. In all of these cases, the difficulty lies in the fact that the projects have little leverage with the firms once contractual problems arise, as the cost to the project of revoking the contract and initiating a new bidding process at that stage is very high.

Designing contracts of this type is a complex task that is specific to each context, but there are a number of things that the Bank could consider implementing in future. First, the investment of time and resources in carrying out diagnostic field assessments (tenure studies) before designing the contracts. Second, the creation of financial penalties for firms that fail to comply with their contracts, while carefully defining what constitutes such a breach. Third, a review of international experiences (including those of other development agencies) with a view to identifying firms that have previously breached contracts, and even trying to detect artificially low bids during the bidding process.

- f. Human resources management.** A recurrent weakness in the projects analyzed lies in the management of human resources—from a poor assessment of quantity (in Belize, for example) and capacity, to the hiring of unqualified staff and high staff turnover. These problems usually lead to delays and, potentially, low-quality project outputs. For this reason, it is important to make efforts to minimize them.
- g. Retrieval of information at risk.** A last phenomenon found in the four case studies is the existence of cadastral and registry information that is at risk of loss. This includes property-related documents (maps, plans, deeds, titles, lease agreements, etc.) that are kept in unsafe conditions and are at risk of being lost or irretrievably damaged. Some of the projects (Belize and Panama) have included activities to digitize and thus preserve the information. However, in all cases there is still such information at risk, part of which relates to unregularized properties. It is important to protect this information, even where it pertains to properties

that have already been regularized and where its use is limited to the resolution of possible future disputes or historical research. Given that such protection is costly, one option that could be explored would be agreements with universities that are willing to undertake digitization in return for being allowed to use the information for academic purposes.



- 1 A more detailed review of the literature, with relevant references, can be found in Annex 2.
- 2 See Place, et al. (1994), Bruce (2000), Bresciani (2004), and Broegaard (2005).
- 3 Regularization is understood in as the process of “bringing a de facto or irregular situation into compliance with the law” (Real Academia Española, 2013). In terms of land tenure, regularization can vary in scope, including some or all activities related to cadastral surveys, adjudication, titling, and registration. Given that there is no agreed definition of the scope of regularization, a broad definition is adopted in this evaluation, that includes all these activities.
- 4 See Atwood (1990) and Deininger and Feder (2009).
- 5 See Deininger and Feder (2009).
- 6 On rural areas, see Carter and Olinto (1996, 2003), Deininger and Chamorro (2002), Deininger, Ali, and Alemu (2009), Do and Iyer (2008), and Goldstein and Udry (2008). See also Field (2005) and Galiani and Schargrotsky (2010) on urban areas.
- 7 Carter and Olinto (1996, 2003), Dower and Potamites (2005), Field (2005), and Field and Torero (2006) find a number of positive effects, and in some cases only in certain groups or circumstances. Deininger and Bresciani (2001), Do and Iyer (2008), and Galiani and Schargrotsky (2010) found no evidence of any impact.
- 8 See Besley (1995), Feder and Onchan (1987), Deininger and Bresciani (2001), Bresciani (2004), and Deininger, Ali, and Alemu (2009).
- 9 See Deininger and Chamorro (2002), Field (2007), and Galiani and Schargrotsky (2010).
- 10 See Deininger and Chamorro (2002) and Field and Torero (2005).
- 11 Feder, et al. (1988) and Goldstein and Udry (2008).
- 12 This presupposes that tax rates on land transactions are not so high that they exceed the benefits of carrying them out through formal channels.
- 13 See Barnes et al. (2000), OAS (2006), Land Equity (2006), and Burns (2007).
- 14 See Barnes et al. (2000) and Burns (2007).
- 15 See Barnes (2002) and OAS (2006).
- 16 See Barnes et al. (2000), OAS (2006), and Burns (2007).
- 17 See Annex 2.
- 18 See IDB (2002).
- 19 See Kaufmann and Steudler, 1998, p. 6.
- 20 Strengthening of the LAS can be understood as enhancing its efficiency, accessibility, reliability, and comprehensiveness.
- 21 In other words, without taking into account other considerations such as financial, time, or political economy constraints.
- 22 In addition, the operations for Ecuador contain solid plans and mechanisms for evaluation and monitoring. It was therefore decided that OVE’s work would have greater value added in relation to projects with weaker mechanisms and plans.
- 23 Belize still has a high proportion of unoccupied lands with agricultural potential, although access is sometimes problematic. According to a recent FAO study, approximately 38% of national territory is suitable for agriculture, and only 15% of those lands are under cultivation each year.
- 24 Projects PN0032, PN0139, PN0148, PN0116, PN-L1018.

- 25 This procedure had been developed a few years earlier by the Instituto Libertad and Democracia [Institute for Liberty and Democracy] (ILD) for urban areas of the department of Lima, leading to the creation in 1988 of the Registro Predial de Pueblos Jóvenes y Urbanizaciones Populares [Property Register for Recently-Settled (informal) and Underprivileged Neighborhoods].
- 26 Regularization activities in urban areas had begun at the end of the 1980s, managed by the ILD, and in 1993 the World Bank financed a pilot program.
- 27 The two phases were approved in 1995 and 2001. Although the program was paused in 2007 after completion of the second phase, it is expected to continue with a third phase (currently in preparation).
- 28 Regularization targets were ambitious from the outset, but became even more so during the second phase, when the objective of regularization in Camisea (where a gas extraction plant was being built) was added.
- 29 This vision coincides with the land management paradigm (see Williamson et al., 2010).
- 30 As mentioned above, the comparison is made at the level of case studies, rather than individual projects. In other words, the Bank's overall work in the area of land in each country is compared with the other countries.
- 31 In this respect, it is assumed that, all other things being equal, the more integrated the parts of an LAS are, the more efficient and reliable the system will be.
- 32 Subsequent achievements have been greater, as the country has continued to strengthen the exchange of information between the cadastre and the registry in many more municipios.
- 33 The motives for creating these are good, however, as they should allow regularization to proceed in a faster, more cost-effective manner, based on a methodology authorized under Decree 667 of 1991.
- 34 Everything that affects the other LAS functions (apart from information systems) is grouped, in this evaluation, into the areas of fiscal framework and land planning.
- 35 To simplify analysis, and as an exception, all activity in the area of information systems is discussed in this section, including systems developed to support regularization, the fiscal framework, and land planning tasks.
- 36 The system, *Landfolio*, includes a series of control mechanisms that allow the status of a process to be determined, along with its length of time in the system and the person who last modified it.
- 37 Development of SIICAR was financed through a World Bank loan; however, that experience is also useful for this evaluation.
- 38 Interconnection activities continued subsequent to the project's completion, and by the end of 2011, 885 municipios had been interconnected.
- 39 In Panama, for example, the maps produced during the agrarian reform exist on single paper copies that are so worn that various pieces have broken off and been lost.
- 40 OVE was unable to find documents explaining the criteria used to select the valleys. According to former program official who was interviewed, there were no clearly established criteria. Rather, the selection was based on both the economic potential of each valley, as well as ease of access, the flight plans of the National Aerial Photographic Service, and climatological conditions.
- 41 According to staff interviewed by OVE, the cadastral survey in Belize has a low absolute level of precision owing to a variety of problems with the geodetic network.
- 42 This should not be of concern as long as it does not create disputes between property owners (see paragraph 4.51 and Cadastre 2014).

- 43 Various experts agree that the costs of building a high-precision cadastre can outweigh the benefits, or even have perverse effects (see Larsson, 1991). Cadastre 2014 makes a similar point to the effect that “cadastral systems in developed countries try to be too perfect. This perfectionism leads to more complicated procedures and slow and costly services” (Kauffman and Steudler, 1998, p. 6).
- 44 For example, there are properties owned by foreigners that are only occupied in the winter.
- 45 Regarding updating of the cadastre, however, important work was done—145 municipios were covered, plus a further 7 in which initial cadastral surveys were undertaken.
- 46 In the case of Colombia, the Project Completion Report did not even include information regarding 3,355 titles issued prior to 2000.
- 47 In some cases, it is possible that the geographic discontinuities observed during the mass regularization efforts could be used for statistical determination of the projects’ impact. This possibility requires a substantial amount of work beyond that of this evaluation.
- 48 There are also weak indications that land tax collections may have increased in Belize and Colombia.
- 49 Moreover, from an econometric standpoint, regularization initiatives can easily be evaluated.
- 50 It should be noted that at least two of the most recently approved operations (EC-L1071 and PR-L1016) include rigorous evaluation mechanisms in their design.
- 51 See Larsson (1991).
- 52 See Deininger and Feder (2009). According to Hanstad (1998), transition costs are one of the reasons that many registries in U.S. states remain deed-based.
- 53 In other words, without taking other considerations into account, such as financial, time, or political economy constraints.

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A) IDBDOCS documents:

- <http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=217962>
- <http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=353237>
- <http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=386601>
- <http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=11083191>
- <http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=26073734>
- <http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=36945162>
- <http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=37139557>

<http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=37187781>

<http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=37187896>

B) Administrative documents:

For the projects evaluated, all available documents of the following types were consulted:

- Loan documents
- Loan contracts (and amendment for project CO-0157)
- Project Performance Monitoring Reports (PPMRs)
- Progress Monitoring Reports (PMRs)
- Project Completion Reports (PCRs)
- Semiannual and final progress reports produced by the executing units
- Midterm and final evaluations, produced by external consultants