

Land Security and Land Administration: Lessons Learned from Projects Management

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A presentation of five land administration programs since the 1990s highlights the success and failure factors encountered. Each program is accompanied by references available on the web. The projects aim to link two components: a systematic inventory of land occupancy, i.e. a technical and social aspect, and the registration of related rights, i.e. a legal aspect. Official reports do not clearly mention the factors that have contributed to the results, which are classified as satisfactory or unsatisfactory. Quality assurance systems are often weak or non-existent, leading to delays or blockages. Sometimes these deficiencies result from project management or local governance, without the donor's involvement. The absence of appropriate governance can also be felt in properly selecting companies awarded tenders, good coordination of local components such as the Cadaster and Land Register or sometimes cost monitoring.

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INTRODUCTION

Since the 90s, the following document presents some elements and results of five land administration projects in rural and urban areas, without being exhaustive.

Whatever the project's name, there are always two main components on which multiple applications are based (experience shows that developing these applications simultaneously with a systematic land inventory (multi-purpose cadasters) does not produce the desired results. However, the structure put in place to develop or regularize the land tenure system must allow for the integration of related applications.

These main components are: i) The Cadaster, or systematic, codified inventory of rural and urban land use, to enable land regularization, and ii) The registration of private properties, with the issue of legal documents and state-owned properties, as well as an up-to-date Land Register linked to the Cadaster.

These components may involve different activities, such as those mentioned in the World Bank's report on the first two phases of the project in Nicaragua, which, it should be noted, took place over 18 years without covering 100% of the country's land tenure security needs.

Official reports do not give up all the difficulties encountered in completing a project, and do not go into the causes. These reports, like those of the World Bank for example, state whether the project is satisfactory or not, without looking into the origins; what could or should have been done to improve results. It is not certain, therefore, that retro-feeding into a database or artificial intelligence is complete and profitable.

The following document does not aim to provide a full report on each of the five projects, but only to attempt to draw out some significant elements and lessons learned “on the job”. These include the following considerations:

- It should be noted that these programs to improve land tenure and, in some cases, even create a genuine land tenure system, involve substantial changes in national governance, with major social impacts. In some major development projects (e.g., the Millennium Challenge Corporation), where the land component represents 20% in value and the infrastructure component 80%, the ratios are always the reverse regarding difficulties.
- Success requires the financial institution to pay particular attention to the achievement of negotiated objectives, the impact of actions taken, and the sustainability of results obtained.
- Success requires supervision and quality control by specially trained internal teams or by a qualified and above all impartial external agency.
- Success also presupposes that the companies or technical assistants selected by tender are genuinely qualified, and that the selection processes have been transparent.
- Some projects start with a structure or organization ill-suited to managing, hosting, and sustaining the results. These deficiencies hamper the progress of the programs, which then must adjust to administrations that are not involved or are sometimes reluctant. Certain essential reorganizations should be subject to conditionalities.
- It is also clear that the desire to solve existing land problems by means of rapid, one-off titling or certification actions, without first drawing up a systematic, codified inventory, i.e. a land register, inevitably leads to delays, disorder and errors resulting in disappointment for users.

ALGERIA

The Cadastral Project, financed by the World Bank, began in 1992 after lengthy preparation. It was scheduled to run for 5 years, and from the outset encountered major difficulties linked to the political and social instability of the “black years” of terrorism from 1992 to 2002.

The project followed on from the period of land nationalization (self-managed domain) which had abolished rural private property in the early 1970s.

The project aimed to draw up a fiscal cadaster and regularize land records. Algeria had many topographical engineers and technicians trained at the Arzew school and a well-equipped military National Institute of Cartography. Out of a total budget of \$120 million, international funding accounted for some \$28 million. This relative autonomy, combined with the difficult political context of the time, had its negative points, such as a lack of coordination and supervision, with quality control sometimes non-existent or lacking (poorly geo-referenced orthophotographs, for example).

These weaknesses have contributed to delays in the creation of a complete and operational land tenure system.

In 2006, the above-mentioned World Bank final report indicated that the project had been physically implemented at 2.9 million hectares in rural areas and 52,000 hectares in urban areas.

In 2015, as part of a partnership between Algeria and the European Union, the National Direction of Domain identified three strategic areas for development: modernizing state administration, contributing to the improvement of public finances, and improving the quality of service provided to users.

In 2016, international missions took part in this program, which included a review of procedures and targeted training designed to improve the governance of land actions in charge of the land registry and land conservation; it was already clear that these two entities had difficulty communicating.

A major effort was being made to digitize the data held by the Land Registry. Quality control was not yet an issue. During these missions, it was also possible to observe that the regional cadastral offices were in particularly good condition and well-equipped and that at least some of them were well-managed.

At the same time, funding was available to set up a multi-function cadaster, but to our knowledge the project did not come to completion. In 2021, the territory was still not 100% covered. The government noted that coordination between the Cadaster and the Land Registry had remained disastrous, despite the

program mentioned above, and was detrimental to the success of the integral land project. The Nacional Cadastral Agency was therefore dissolved and integrated with the Land Registry into a single department under the supervision of the Direction of National Domain (Direction Générale du Domaine National).

To date, no further information is available on the progress of the tasks assigned to the Cadaster and the Land Registry, nor on the degree of coordination and automated liaison between these entities. Cadastral extracts are available online, and ownership is formalized by the “Acte de Propriété” and the “Livret Foncier”. Users have access to a “Guichet Unique” (one-stop shop) to carry out all the necessary formalities.

BOLIVIA

The National Land Administration Project (PNAT) in Bolivia was approved by the World Bank in 1995 to put an INRA (National Institute for Agrarian Reform) law in place. It began in 1996 and was due to end in 2001.

The origins of this program can be traced back to the agrarian reform of 1953, which failed to deliver the expected results, i.e. an equitable distribution of rural land to farmers who could work it (see in reference to the Bressac Master).

The creation of INRA and the drafting of the law of the same name were intended to compensate for the shortcomings of two inoperative institutions: Centro Nacional de Reforma Agraria (CNRA) and Instituto Nacional de Colonización (INC). The Bolivian land registry was itself divided, with the rural part under the responsibility of the Military Geographic Institute and the urban part under the specific direction of the municipalities.

The main thrust of the PNAT was to conduct a land reorganization of rural lands in selected areas, to facilitate cadastral registration, hence the acronym CAT-SAN (Catastro-Saneamiento), before transmitting the data to the Property Registry (Derechos Reales). The law also provided for simple cadastral actions at beneficiaries' request (SAN SIM) and for Community Lands of Origin (TCO). In 1998, the latter received specific funding from the Danish government.

The project financed by the World Bank (US\$28.9 million) was divided into 4 major zones and covered some 3 million hectares (the Chuquisaca zone was financed by the Netherlands at the time and had to be handled separately by a company that did not achieve the expected results).

The part financed by the World Bank was put out to an international tender, and the company selected under INRA supervision operated with a local subcontractor. The first stage consisted of mapping using aerial photographs and satellite images. On this basis, the teams surveyed the properties using GPS. They compiled a database of the information collected from the occupants, to systematically regularize the land tenure situation.

At the same time, INRA was consolidating its administrative capacity, setting up rural law courts, elaborating a conceptual data model and, on this basis, initiating the development of an integrated land information system.

In the World Bank's final report, we note that many points were satisfactory by the Bank's standards, but that overall, the evaluation was unsatisfactory due to the lack of monitoring of component and sub-component costs. (The remark relating to indigenous territories in the report does not seem appropriate, as this component was not part of the project, even though it is included in the INRA Law).

It should be added that, at the outset, the project had to make up for the absence of a quality control system. It was largely established regarding cartographic aspects (aero triangulation taken over by the company, for example) but to our knowledge it was not developed for topographic survey operations and the taking of occupant information and subsequent processing.

GPT Chat: “Currently, the land tenure model does not yet appear stable. Putting into practice existing principles on land securitization and management, the protection of collective rights and the complementarity between collective and individual rights remains a complex and constantly evolving challenge. Social, economic and environmental dynamics continually influence INRA's operations and the implementation of its policies”.

EL SALVADOR

The Land Administration project in El Salvador had to respond to the “Chapultepec” peace treaty signed on January 16, 1992, which put an end to a long civil war. The economic and social chapter was the most difficult in the overall negotiation. It had to meet the needs of the country and small farmers by limiting the surface area of agrarian property and facilitating the transfer of land.

In 1997, the World Bank stepped in to finance a US\$70 million operation (50 million loan and 20 million local share), including a pilot project costing around 5 million (1997-1999).

The document quoted above is very complete. It should be noted that the project was rated satisfactory. This document focuses on a few specific points.

The pilot project on a complete department (Sonsonate) was not properly executed by the selected company (bond executed) and the administration of El Salvador had to complete the field operations with the advantage of having gained a series of know-how for the continuation of the project.

The integrated land registry IT system that was to be developed by the same company also had to be taken over by the administration's IT departments, resulting in the Integrated Registry and Cadastral System (SIRyC). This approach provided a degree of flexibility that would later enable various applications and developments to be integrated.

The departments of the Geographical Institute which was responsible for the Cadaster, and the Property Register, were integrated into the National Register Center (CNR), which also housed the Register of Commerce and the Register of Intellectual Property. During the project, the Cadaster, which had been placed under the supervision of the Property Registry, became a department before being merged with the Geographical Institute.

With the support of the World Bank, the project initiated the creation of a Central American training network (RECCAT) with international participation. A constant training effort was maintained throughout the project with experts recruited by the project and short-term consultants.

To carry out the Verification of Rights and Delimitation of Lots (Land) component, which consisted of a systematic inventory of the territory based on photogrammetric and Ortho photographic restitution, the CNR created a specific entity or Project Administration Unit (UAP) responsible for managing the execution of contracts awarded to four companies selected through international calls for tenders with the support of the United Nations Program, for their supervision and quality control prior to the transfer of validated data to the relevant CNR departments. The latter then ensured the official transfer of the information into its databases, with the integration of data between the Cadaster and the Property Register. A special effort was made to develop an effective and recognized quality control system and a series of manuals for each phase of execution.

CNR then decided to adapt the ISO 2859 sampling method with realistic parameters (inspection and acceptance levels) agreed with the contracting company.

The implementation of the standard was carried out in stages. It became clear that the attributes of a parcel of land were multiple, and that developments were necessary to ensure that work was not held up while the company integrated the essential improvements and corrected the defects detected.

Faced with this challenge, the CNR, through its project administration unit, drew up a methodology and quality assurance manual. A committee strictly controlled all modifications to this manual.

The developments included criteria for the size and homogeneity of batches to be sampled, using Excel functions to generate random numbers within a perimeter, as well as error standards and tolerances according to the topographical nature of the elements to be checked within a lot. On the literal and legal aspects, it was necessary to categorize and weigh the numerous elements of the survey sheet according to the seriousness of the defects encountered.

The ISO 2859 standard determines whether a sampled batch is rejected or accepted. However, it does not identify the source of defects or the measures to ensure the project's quality and avoid delays or stoppages. The quality assurance manual contributed to significant improvements. Failure Mode, Effects and Criticality Analysis (FMECA) tools proved invaluable in identifying where and how the most frequent defects occurred.

The total contracted amount was \$28 million, with a final disbursement variation of less than 1%, for 434,250 regularized rural plots and 827,696 urban plots, including the capital San Salvador. The remainder of the loan was used for institutional strengthening in connection with the creation of the National Center of Registers.

The positive impacts of the project noted in the evaluation missions relate to institutional strengthening, service efficiency, economic benefits, protection of natural resources, national mapping with geodesy, contribution of information to municipalities and the police, and support for disaster mitigation efforts such as the 2001 earthquakes and tropical storm Mitch in 1998.

This project came to an end in 2005, with very consistent supervision from the World Bank. El Salvador had prepared a new phase with the latter and the support of Japanese cooperation funding, to rapidly complete coverage of the country. For internal political reasons, parliament was unable to ratify the loan.

Around three years later, El Salvador obtained a specific loan from the regional bank BCIE. A company with few qualifications in the field was selected after a not very transparent process. The contract between CNR and the company failed to meet its objectives. The BCIE did not function as supervisor, as the World Bank had during the first phase, and the CNR's technical managers had not yet capitalized on the lessons learned from the first phase to pilot this program without assistance. Gradually, the CNR resumed, with its own resources, the continuity of cadaster, register and mapping activities on the technical basis of the first phase, and is now responding to the needs of users and communities.

PANAMA

On August 3, 2007, the Inter-American Development Bank (IDB) granted Panama a \$27 million loan to support the modernization of land administration in the metropolitan region, where more than half of the Panamanian population lives but many inhabitants have no property titles. Loan 1427/OC-PN.

The PRONAT-CRM program focuses on the metropolitan region and follows on other IDB projects since 1996: PROMOSA and PRONAT-BID. The World Bank also financed a PRONAT-BM program. (PRONAT). Below is a link to the evaluation of the World Bank project, which reflects a positive assessment.

PRONAT-CRM, the subject of this article, was designed to support the Panamanian government's strategy to regularize all land in the metropolitan region, which covers 2,760 square kilometers and includes the country's two main cities, Panama City and Colón, with almost 1.6 million inhabitants representing more than half of the Panamanian population.

In the region, there were between 550,000 and 650,000 urban and rural properties, of which only around 216,000 were registered and barely 160,000 listed in the national land register. In general, people living on unregistered land are the poorest.

In addition, deficiencies in the Metropolitan Region's cadaster, which had not been updated since 1970, limited the State's ability to carry out more effective territorial planning and massive land surveying in the country's main economic region.

The project was divided into four zones, allocated to four international companies according to identical specifications. The technique used was photogrammetric restitution and orthophotography based on aerial photography. Another company conducted this work using the Geographical Institut's aircraft, with some difficulties due to maintenance. On this basis, the companies had to carry out a systematic inventory of the land lots, to deliver validated results to the PRONAT Administration for transfer to the Cadaster and the Land Register, according to a well-ordered theoretical scheme.

The report published by the IDB's Office of Evaluation and Supervision (OVE) describes some of the shortcomings and successes of the above-mentioned IDB-funded programs.

The heterogeneity of the selected companies, which did not all have the necessary capacity to conduct the project, and a high staff turnover rate, complicated quality control, which was largely outsourced to an independent company. This last provision improved controls, but the companies were penalized little or not at all in the event of rejections, sometimes using direct relations with the administration's management

without objection from the IDB's representative. (This is not specified in the OVE report). Five years after the start of the project, two out of four companies had produced nothing concrete!

In this context, it was of course difficult to conduct a rigorous impact study of the program. However, it is worth noting that the systematic inventory or cadastral "sweep" improved the land regulation process compared with previous projects.

Another major obstacle to the successful implementation of the project, as it had been designed, was the lack of institutional coordination between the administrations responsible for validating the companies' results, which systematically led to pitfalls that were all too often technically unjustified. Certainly, the program should have anticipated this obstacle and created the necessary conditions for institutional participation in the success of the national land improvement project. The titles established in the early years, for political purposes, resulted in the administrative regularization of guarantees provided by beneficiaries with no direct connection to the project.

It should also be noted that the development of the SIICAR computer system, which was to integrate the Cadaster and the Register, never came to completion, despite considerable investment being financed by the World Bank. The implementation of SIICARITO was too inefficient a substitute to meet the need for a true Cadaster-Register integration.

Faced with all these difficulties, the government decided in 2010 to create a National Agency for Land Administration or ANATI, which brought together the skills of the institutions involved in Panama's land regularization scheme, with the following technical departments:

- National Directorate of Titling and Regularization
- National Directorate of Cadastral Information and Evaluation
- National Directorate of Indigenous Lands and Municipal Property
- National Geographic Institute Tommy Guardia
- National Directorate of Cadastral Measurement

It should be noted that the Land Register is not one of these directorates, and that the SIICAR computerized land integration system seems to have been abandoned.

The 2014 IDB report stresses that, at that time, ANATI still needed to be technically and institutionally strengthened.

MAURITANIA

In 2016, a multi-partner mission involving the World Bank, the European Union and the United Nations Coordination System aimed to reflect on a strategic vision of the role of land tenure in the country's development, and to arrive at a consensual roadmap to guide the Mauritanian government in the preparation and implementation of an inclusive and concerted land tenure reform. In addition to this mission, a special study was conducted to review the circuits and procedures for registering land and land ownership. One of the study's conclusions recommended a pilot zone in an urban area, using available funding.

In 2019, several World Bank missions led to a detailed review of the land sector, with priority given to setting up pilot zones in urban and rural areas, and additional funding of \$4.15 million.

Implementation of this program was entrusted to a company (Technical Assistant) following an international call for tenders. The Mauritanian contact was the National Direction of Domain (DGDPE) of the Ministry of Finance, which groups together the Cadaster, the Domain's Affairs, the Land Registry and the Law Department. Numerous national administrations are also involved, including the Urban Planning Department, the Urban Development Agency, the Ministry of Agriculture and the Ministry of the Interior. The project quickly encountered major obstacles:

- The COVID, which disrupted the start-up of operations.
- The failure of the technical assistant, who lost 18 months and replaced his head of mission for incompetence.
- The passivity of the COTREF (Technical commission in charge to carry out the Land Reform) created in 2016, without any reaction from the competent national authorities and the World

Bank. Both the World Bank report and the loan document emphasized the importance of this commission in implementing the pilot project.

Very few land titles guarantee ownership in Mauritania, and studies attributed this shortcoming to registration procedures. The program aimed to simplify these procedures and, by the end of the project, issue titles or certificates guaranteeing ownership. This approach failed to consider obstacles. In addition to those already mentioned, there were the following:

- In urban areas, i.e. 6 sites distributed between Nouakchott and Zoueirat, due to a lack of national dissemination of the project, it turned out that users were often absent, reluctant or without documents. Using circuitous procedures, some users unjustifiably held occupancy permits, sometimes with double allocation. In addition, the geometry of the plot perimeters did not correspond to that which the urban planning agencies had granted to the beneficiaries. Therefore, allocation required a specific updating process on the part of the administrations concerned.
- The technical assistant made several recommendations, but in the absence of an institutional decision, it was only possible at the end of the project, during a final workshop, to issue new occupancy permits identified on non-updated mapping without taking account of available updates.
- In rural areas, the selected sites with few plots were scattered over 4 communes, which made it impossible to identify neighborhood conflicts. Land tenure situations varied from site to site, but apart from a few exceptions, the documents provided by users were mediocre, and land development was sometimes inconclusive. As in urban areas, the technical assistant made proposals to give users access to documents attesting to individual or community ownership but received no official response.

It appeared that the local land commissions were the only ones capable of initiating land regulation procedures, with the disadvantage of only being able to act under the supervision of the Ministry of the Interior (2010 law), thus creating an intermediary point of passage before that of the DGDPE procedures, which depends on the Ministry of Finance. This constraint escaped the Land Sector Review, and COTREF remained silent. Although these land commissions were able to meet at the very end of the program, no progress was made in consolidating rights, apart from an awareness of the need to set up land offices with the participation of the DGDPE.

The DGDPE has always remained far removed from the problems of the rural sector, leaving local management of rural land to representatives of the Ministries of Agriculture and the Interior. It became clear that the rural sector needed an exhaustive inventory of both physical and legal situations, to feed local consultations and national decisions.

The results obtained were not subject to any real quality control. Supervision of the project by the World Bank was limited to a documentary review of the deliverables. While the project, the DGDPE's IT system (Tehlil) was significantly improved, enabling internal procedures to be monitored, and could form the basis of a "Land Integrated System".

Despite the inconclusive results in terms of the number of new land titles or certificates issued, the following positive points are worth noting:

- The inventory of the various situations encountered and the identification of non-compliant procedures with proposals for improvement.
- Concrete proposals for improvement for each situation encountered.
- A proposal to set up a land development scheme on rural sites.
- A training plan involving local and international organizations.
- A modernization plan including the creation of a National Cadaster with the development of an integrated information system based on the existing system, a Land Agency, and a framework law to implement the necessary legal, organizational, and technical decisions.
- A capitalization of the project with the methodologies used, the difficulties encountered, the results and practical recommendations for implementing the modernization plan with a view to continuing efforts to achieve nationwide land reform.

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