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9. ABSTRACT

The status of AID supported cadastral programs in Central America is reviewed including the background of such programs, a summary of implementation and goals accomplished, and the major problems of past programs. The need for more precision in definition of purpose, a narrower focus for the study, improved project design, and integration into a comprehensive country program strategy are stressed. The relation of the cadastral program to property tax improvement, land reform, and natural resources inventories is discussed. A "phased" approach is suggested under which a scaled down version of a complete program would be required before going on to a second and expanded phase. A detailed accounting of the purpose, implementation, and accomplishments of project goals in Costa Rica, Guatemala, Nicaragua, and Panama is also presented. The program came closest to meeting project goals in Nicaragua and Guatemala.

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Intercountry Evaluation of Cadastral Programs

Costa Rica
Guatemala
Nicaragua
Panama

June 1974

Agency for International Development
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AGENCY FOR INTERNATIONAL DEVELOPMENT

BUREAU FOR LATIN AMERICA

PROGRAM EVALUATION STUDIES

INTERCOUNTRY EVALUATION OF CADASTRAL PROGRAMS

Costa Rica
Guatemala
Nicaragua
Panama

by Bernice Goldstein

June 1974

A.I.D. Evaluation Studies represent the views of their authors and are not intended as statements of official policy.

Foreword

The subject of this report is an evaluation undertaken from November [illegible] through December 14, 1973 in Costa Rica, Panama, Nicaragua and Guatemala of AID-supported cadastral programs. The report is in two sections: Part I--Overview; and Part II-Individual Country Programs.

First, a general observation. It seems to me that, while cadastral programs can contribute to fiscal improvement and land reform, they are not first requirements for the accomplishment of these objectives. Therefore, within the context of AID's current areas of concentration and limited resource availabilities, we should be satisfied, when making judgments about future proposals, that the cadastral project is more effective than alternative approaches in advancing our interests. If undertaken, the cadastral project should be an integral part of an overall program strategy in which the cadastral activity is related to, and reinforced by, other elements of the country program.

Specific observations with respect to characteristics of past programs, problems encountered, and possible future approaches follow:

1. Past programs have been characterized by the implicit expectation that a broad range of benefits would almost automatically result from carrying out a cadastral survey. If stated objectives were ambitious, and at times imprecise, project design frequently underestimated the complexity of the operations involved and often failed to provide for the linkages necessary to assure achievement of desired ends. The broad scope of some loans, particularly those that included natural resources inventories, severely strained host government support capabilities. In some cases, impact suffered because governments did not find it feasible to undertake requisite legal or administrative action.

All of which suggests the need for more precision in definition of purpose, a narrower "focus" for the activity, improved project design, integration into a comprehensive country program strategy, and the existence of necessary laws and regulations.

2. Concerning <u>property tax improvement</u>, our experience shows that while a cadastral program can improve property tax administration through the installation of an equitable and efficient property tax system, it cannot of itself bring about high levels of property tax revenues.

Past projects have encountered problems because

--they did not include all components--mapping, identification, valuation, collection--or cover a complete administrative unit;

--they underestimated the complexity of reconciling cadastral property tax records with existing records;

--budgetary support was insufficient;

--the host government did not find it feasible to take requisite legal or administrative action.

This suggests an approach which

--includes all essential components; extends over an entire administrative unit and inventories everything in the unit; and provides for maintenance of the system;

--is the "minimum" cadastre to serve the country's needs, in terms of cost and host government technical and administrative capability;

--is based on a determination, upon approval of the loan, that requisite laws and regulations either already exist or will be undertaken as a condition precedent to the loan.

3. Concerning land reform, experience shows that while the type of cadastral program AID has supported in the past can provide the basis for a modern land registry system and can provide the data useful for development in the rural sector, it cannot of itself bring about accelerated titling, improved distribution and utilization of lands, and other agricultural reform measures.

4. Concerning natural resources inventories, experience shows that while valuable data have been generated, their utilization appears limited relative to the cost of producing the data, suggesting the need to assess with care any future proposals. At the very least, such programs should, if undertaken at all, assure a close "match" between the generation of data and specific end-use of such data.

5. A "phased" approach. The evaluation revealed a sentiment among those associated with past cadastral programs in favor of a "phased" or "tranched" approach, under which the successful accomplishment of purpose in an initial scaled-down version of a complete program would be required before going on to a second and expanded phase.

Bernice Goldstein
February 1974

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AID-Supported Cadastral Programs

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AID Cadastral Programs in Latin America

I. Overview

A. Background of Cadastral Programs

The term "cadastral survey", in the context of development assistance programs in Latin America, has largely lost its original meaning--that of a tax-mapping, property valuation program--and has been used to describe almost any kind of physical land survey, undertaken for any kind of public or private purpose. Furthermore, the word has been confused with the Spanish term "catastro", which refers to a survey made for land title purposes. The choice of descriptive term has thus led to a great deal of confusion and misunderstanding.

The programs undertaken in Central America in the mid-to-late 1960's reflect this confusion with respect to the nature of a cadastral program and what results could be expected from it. The programs had their origin in a SIECA[1/]-sponsored activity which developed a broad plan for cadastral surveys and natural resources inventories; this plan was presented and approved by the Ministers of Economy of Central America and Panama in April, 1963 and in May, 1963, a revised set of loan criteria for a "Program of Investigation and Utilization of Natural Resources and Improvement of Real Property Tax Systems" was issued. Essentially, the criteria called for a three-pronged approach: (1) installation of modern real property tax systems to increase government revenues; (2) an inventory of natural resources; and (3) mapping to support the first two objectives. Subsequently, with the assistance of AID, a variety of "cadastral survey" programs were undertaken in Central America. However, although SIECA had

1/ Permanent Secretariat of Central American Economic Integration (SIECA)

promoted the use of so-called integral cadastral surveys.[1/] AID limited its offer to the financing of "fiscal" cadastres, in view of the latter's more immediate relation to property tax administration and the relatively lower cost and greater speed of such a cadastre. (In Panama and Nicaragua, the AID loan also included a natural resources inventory to which the greater part of loan funds was devoted.)

B. Summary of Implementation and Goal Accomplishment

Costa Rica - The AID cadastral loan to Costa Rica in 1964 was the first to get underway and, being the pioneer program in the region, ran into a number of unforeseen difficulties. The purpose of the loan (L-011) was to assist the Government of Costa Rica in "improving the administration of property taxes . . . and to provide information needed for land reform, land use planning, and public works" through a project of (a) tax mapping and tax appraisal and (b) acceleration

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1/ In his 1968 (Costa Rica) study, Legal Problems Presented by Use of Cadastral Property Records in the Present Tax System, Lorin S. Weisenfeld describes the two classes of cadastral surveys: "The broadest is a public record which identifies every property within a given region on a precise and specially prepared map, and attributes to that property a legal description of its boundaries, an enumeration of its physical and economic qualities, and an assessment of its value for tax purposes. This type of cadaster is called a complete cadaster or integral cadaster. It is premised on geometric mapping of the highest precision and is sufficiently accurate to serve as a basis for determining legal titles. A fiscal cadaster serves the more limited function of identifying and evaluating properties for tax purposes only. It is designed merely to provide the base upon which property assessments can be uniformly and justly made. Although a fiscal cadastral survey is undertaken in the same manner as an integral cadastral survey, the more restricted uses to which the resultant maps will be put permit a less stringent surveying process. For this reason, it is considerably less expensive and more rapid than the integral cadastral study. It is often selected in preference to the integral cadaster by governmental entities which must choose between the eventual luxury of a definitive cadaster and the immediate necessity of improving property tax administration. The choice between the two types of cadastral surveys is not mutually exclusive, since a fiscal cadaster serves as the foundation upon which an integral cadaster can subsequently be built."

of the completion of topographic mapping. Problems of reconciling the cadastre-generated records with the existing property tax list and of maintaining the cadastre during conversion of the system seriously jeopardized operations and, in effect, significantly reduced anticipated revenue generation. Assessment of loan impact on land reform, land use planning, and public works planning, is more difficult. The project can be said to have had impact to the extent that data on cadastre property cards were utilized for planning purposes and to the extent that the L-011 loan helped to strengthen the Cadastral Office (in the Geographic Institute) which, in turn, is supporting current programs of IFAM (Municipal Development Institute) in municipal tax administration and ITCO (Land and Colonization Institute) in its land titling activity.

Panama - The stated purpose of the 1964 AID loan to Panama (L-007) was "to establish a basis for orderly land settlement, improved land use, land title registration, an evaluation of natural resources, establishment of an equitable and efficient rural land tax system, and other agricultural and land reform measures . . ."

Reportedly, project activities resulted in over 125,000 acres of agricultural lands previously under unknown or ill-defined tenure status being returned to the public domain for more productive use. On the other hand, land title registration effects of the project have been nominal. At the time of its completion in 1971, the cadastre had revalued most rural properties and the project consultant had made recommendations regarding land tax reform. However, no legal or administrative action has yet been taken to implement a reform of the land tax system.

The data resulting from the natural resources inventory component of the loan have been utilized by the National Planning Office and by the Ministry of Agriculture and the Agrarian Reform Commission. However, the information and data in the computerized cadastral register reportedly are not being fully utilized.

Nicaragua - The greater part of the 1966 AID Cadastral Survey Loan (L-012) to Nicaragua, as in the case of Panama, was devoted to a natural resources survey, with only about one-third the total funds used for activities directly connected with improving property tax administration.

Nevertheless, the rising trend in property revenues, from 1970 through 1972, is attributable in large measure to the increased number of property taxpayers and increased valuation resulting from the cadastral

project. The impact of the L-012 loan on agrarian reform activities is more difficult to determine, since most of the current activities of the responsible government agency--the Agrarian Institute of Nicaragua (IAN)--are being undertaken outside of the geographic area of the L-012 project. Again, however, as in the case of Costa Rica, to the extent that any titling and colonization activities are being carried out in the project area or are drawing on a cadastral office capability which has been strengthened by the AID project , the AID loan can be considered to have made a contribution. There is evidence that the data generated by the natural resources inventory component of the loan are being used by Nicaraguan government agencies and that the data also served AID in the Agriculture Sector analysis and the AID-financed "Feasibility Studies and Surveys."

Guatemala - The most recent program among those reviewed is the Guatemala loan (L-014), undertaken in 1967 and followed up with a second loan in 1973 (L-023). The purpose of the loans is property tax improvement, through assistance in carrying out cadastral surveying, tax appraisal, tax notification and collection.

Although it is early to measure the effect of the program on property tax revenues (since the major impact is expected to result when cadastral records are substituted in their entirety for the outdated property tax list now in use), there is already evidence of improved property tax performance. Additionally, the project is furnishing cadastral records and maps to local municipal governments for use in local tax activities and to the Property Registry for use in establishment of an improved property title identification system.

C. Conclusions

A more complete and better informed assessment of program impact lies in the future--the Guatemala fiscal cadastre project is not yet completed; the Nicaraguan program has suffered the effects of the 1972 earthquake (although its cadastral activity seems resilient); and in all countries, it should be noted, the AID-supported cadastral programs represented only accelerated portions of longer range programs which the countries are still carrying out.

In recognition of the above, and within the limitations of time and available information under which this evaluation was carried out, some observations about past problems and possible future approaches can, nevertheless, be hazarded.

1. Major Problems of Past Programs - A reading of the stated loan purposes in the AID-supported cadastral programs in Costa Rica, Panama, Nicaragua, and Guatemala reveals the implicit

expectation that a broad range of benefits would almost automatically result from carrying out "cadastral surveys".

If some of the statements of purpose were ambitious, and at times imprecise, project design frequently underestimated the complexity of the operations involved and often failed to provide for the linkages necessary to assure achievement of the desired ends; even where successfully implemented, project impact suffered because governments did not find it feasible to undertake the recommended legal or administrative action. The broad scope of some of the loans, particularly those that included natural resources inventories, severely strained host government support capabilities, in financial and manpower terms; and utilization of data for planning purposes, both that generated by the cadastral property records, as well as the data produced by the natural resources inventories, has been limited because adequate provision was not made to assure their dissemination.

C. Possible Approaches

a. More Precise Definition of Objectives and Structuring of Project

Decide what is to be accomplished in the context of the overall program strategy and whether a cadastral project is more effective than alternative approaches in achieving our aim; limit the scope of the loan to that specific end (e.g., property tax improvement), avoiding overloading the system or dissipating efforts in an attempt to accomplish a broad range of objectives; integrate the project into the country program, relating the cadastral activity to other elements of that program.

1) If property tax improvement is purpose of loan,

-- determine what information is needed from the cadastre, how it will be used and maintained, and that the government will facilitate the effort.

-- carry the cadastral process through all stages--mapping, identification, valuation, collection--and extend it over an entire administrative unit, inventorying everything in the unit.

-- design the "minimum" cadastre to serve the country's needs in terms of cost and host government technical and administrative capability.

-- determine that the requisite laws and regulations to make the project "feasible", are either already in existence or will be undertaken as a condition precedent to the loan.

-- be realistic in expectations of returns; while a fiscal cadastre can contribute to the improvement of overall property tax administration through the establishment of an equitable and efficient system, it does not automatically result in high levels of property tax revenues (which are more a function of rate structure and the government will to enforce collections). In and of itself, the cadastre will make only a small direct contribution to revenue increase through identification and appraisal of properties that previously avoided the tax; through uniform and modern evaluations; and through the savings effected by streamlining the system.

2) If land reform (i.e. registry and titling improvement) is purpose of loan,

-- recognize that the issues and complexities of land titling are such that they should be addressed in a project specifically structured for that purpose, as a component of an integrated approach to the agricultural sector.

-- be mindful that while a fiscal cadastre can make a contribution as a foundation upon which an integral or complete cadastre can subsequently be built, and as a source of statistics on land use, its role is indirect at best, and ascribing a land reform goal to a fiscal cadastre project is not only unrealistic, but can jeopardize the accomplishment of property tax improvement objectives.

3) If a natural resources inventory is purpose of loan,

-- determine whether the loan can be justified in the context of current AID priorities and limited resources. While valuable data have been generated in past inventory programs, their utilization appears to be limited relative to the costs of producing the data, suggesting the need to assess with care any future proposals.

-- one approach would be to build on the basic data generated by a fiscal cadastre (where one exists), elaborating the information on a selective basis, in the nature of a feasibility study, in those cases where there are specific possibilities for future projects, to be undertaken by AID or in collaboration with other donors.

-- as a minimum first step in the collection of data for planning purposes, every effort should be made, where there is a fiscal cadastral project, to assure utilization of the range of statistical information that can be culled from cadastre property cards for the surveyed area: the card is the source of important statistics on land use that can be employed by agencies of the government involved in general development planning, urban planning, and agrarian settlement or reform. Likewise, it is an adjunct to public works programming, providing basic maps and property values for compensation purposes.

b. A "Phased" Approach

The evaluation revealed a sentiment among those associated with past cadastral programs in favor of a "phased" or "tranched" approach, under which the successful accomplishment of purpose in an initial scaled-down version of a complete program would be required before going on to a second and expanded phase.

Unlike some so-called "pilot" or "demonstration" projects which have been undertaken in the past, however, the initial phase would be a reduced version of a complete program, planned and carried out in its entirety, including all processes, but confined to a limited administrative unit; (the problem of equity resulting from implementation of a property tax program on a unit-by-unit basis does not seem to be insurmountable). The optimum scale of operations would, of course, have to take into account the overhead, and the fact that almost as much time, money, planning and control are involved for the first phase as for expanded operations.

Such a phased operation provides an opportunity on a limited, more manageable scale, for training, working out kinks, and getting the system well established. More importantly, it gives both parties an option with respect to extension of the program. A "first phase" operation that has accomplished its purpose can, by demonstrating its utility and potential benefits if extended, test the seriousness of host government support; on the other hand, if the project has encountered difficulties and is unable to accomplish its objectives, it can be terminated.

II. Individual Country Programs

Costa Rica:	Cadastral Survey
Loan No:	L-011
Amount:	$1,600,000
Date of Loan:	October 19, 1964 (Agreement signed)
Terminal Disbursement Date:	August 31, 1971 (Revised)
Disbursed:	$1,451,681

A. Purpose

This loan was made to assist the Government of Costa Rica (GOCR) in "improving the administration of property taxes in Costa Rica, and to provide information needed for land reform, land use planning, and public works through assistance in financing a project consisting of (a) tax mapping and tax appraisal of land the value of which constitutes 90% or more of the taxable value of land in Costa Rica, and technical assistance related to the foregoing; and (b) acceleration of the completion of topographic mapping of Costa Rica."

The original objectives--to map, value, and tax an estimated 344,000 properties--were found to be unrealistic by GOCR consultants and the number was reduced to 177,000. These properties were located on the central plateau of Costa Rica and in the region near the city of Puntarenas, and represented about 65% of the total land value of Costa Rica. The area to be covered by the cadastral survey amounted to some 3,200 square kilometers of Costa Rica's 52,000 square kilometers. It was assumed that a subsequent cadastral study would cover tax mapping in the remaining portion of the country.

The topographic mapping project was aimed at speeding the completion of a joint program, undertaken in 1954 by Costa Rica's Geographic Institute and the U.S. Inter-American Geodetic Survey. The basic topographic maps were to serve not only tax purposes, but also were to be used for planning land use and development projects. Additionally, it was anticipated that the network of official monuments which the Institute was establishing as a part of its normal activities would make title surveys less expensive than they had previously been, and would, in time, help to solve the problem of insecure land titles.

B. Implementation

Technical assistance, under a loan-financed contract, was provided by the consulting firm, J. L. Jacobs and Company, which committed itself to services including the development of appraisal standards, the

preparation of an appraisal manual, and the training of staff. With the Central American Bank for Economic Integration (CABEI) serving as regional technical adviser to the GOCR, responsibility for administration of the project was assigned to the GOCR's National Planning Office. At the termination of the consultant's contract in June 1968, project responsibility shifted from the National Planning Office to the Finance Ministry.

The GOCR considered all field work in the project to be completed as of June 30, 1968. At that time, 160,000 properties had been mapped in the field; 144,000 office evaluations had been made of land and buildings; and 149,000 appraisals had been made in the field.

However, the degree to which the field records could become the bases for assessments of the 149,000 properties for property tax purposes depended on whether they could be reconciled with the existing property tax records. (In Costa Rica the in personam property tax system and the progressive levy made records reconciliation a highly involved and necessary operation.) For reasons described below, this stage in the process proved to be a critical bottleneck and, according to latest estimates, only a little more than 60,000 new valuation assessments had been transmitted to the taxpayers because of the difficulties encountered in reconciling the two sets of records.

Upon termination of field and office work on a property, complete property cards were coded and key punched, as an intermediary step in adapting the cadastral records to tape in order to make them compatible with the computerized billing system used by the Property Tax Department. Because the Costa Rican Property Tax law requires that property tax bills be figured progressively on the sum of the assessments of an individual's taxable interests in the country, the accounts in the Tax Office are kept in the name of the property owner rather than in the number of his parcel. Thus, no parcel of land can be taxed unless it can be associated with a named party in interest. Moreover, elementary principles of fairness require that no parcel of land be taxed to one individual until it has been determined that there are not other parties in interest (i.e., co-owners or beneficial users) who have a legal obligation to share the tax burden.

The cadastral records could not be used directly from the tape because they were not correlated with the existing records of the Property Tax Office. Because the cadastral survey is property-oriented and not name-oriented, the problem was two-fold. First, every property identified in the cadastral survey had to be linked to a name in the Property Tax Office records. Secondly, every other party in interest connected with the property had to be accounted for and billed a proportionate share of the tax.

If the parcels identified by a cadastral survey had coincided perfectly with those on the Property Tax Office rolls, and if the names on the Property Office rolls were only those who, in fact, currently had a tax liability, it would not have been difficult to match a cadastral identity number with a finca number, and then establish the names of all who had tax liability in the property. Unfortunately, the state of the Property Tax Office records made a complete mechanical reconciliation of the two systems impossible. Property descriptions on file with the Property Office were approximate and haphazard, making it difficult or impossible in many cases to match them with the precise descriptions of the cadastre. Thus, while the cadastre identified all properties and their value, but not necessarily the owner or taxpayer, the records of the Property Tax Office identified the taxpayer, but not necessarily taxpayers for all properties.

With the assistance of an IRS[1/] advisor, a computer program was formulated to see how close to the goal of 85% matching against the cadastral records the machine process could come. However, the pilot machine matching study (the Belen Experiment) produced only a 30% reconciliation, and the GOCR abandoned the machine matching plan in favor of manual reconciliation.

The logical solution to the complex problem of reconciling current information with past records would be to double check the new information, publicize it in the area being surveyed and registered, adopt the new records as they exist, at least for tax purposes, and file the old records. The Government of Costa Rica, however, opted for the record reconciliation route, and thus, after four years of cadastral work, approximately half the assessments made during the cadastral project have been reconciled and are in force. (A new Cadastral law, presently before Congress, would require a cadastral certificate before recording in the public land registry and registering in the Central Tax Office. The passage of this law should contribute significantly to ordering the present confusion regarding land ownership and should also improve the administration of the property tax.)

Mention should be made of some activities that were an adjunct to the cadastral project. For example, during the course of 1968, grant funded technical assistance was provided by a legal advisor to the project who was to analyze the legal problems of using the fiscal cadastral records within the Costa Rican in personam tax law. The legal advisor was to (1) review the progress in legislative improvement, including the final draft of legislation to correct problems encountered; (2) review and make recommendations on the reconciliation then underway between the cadastral and the tax records with special emphasis on potential legal problems; (3) recommend a revised organization of the Property Tax Office to two alternatives--(a) implementation of new legislation, and (b) continuation of reconciliation work without the new legislation.

1/ U. S. Internal Revenue Service

During 1968, limited funds under the loan were made available to support a juridical or "integral" cadastre. This undertaking by the GOCR, also assisted by a German Technical Mission, was directed toward the modernization of the Public Registry. Work on the integral cadastre was to make full use of the fiscal cadastral investigations and maps.

Legal and economic research in rural property problems was undertaken in 1969, in the context of the University of Costa Rica Agrarian Law Project, jointly financed by the University of Costa Rica, the Costa Rican Government, the International Legal Center and AID. The purpose of the Law Project was to examine the role which Costa Rican law and legal institutions play in the development process, particularly agricultural development. The Project compared the Civil Code and other legislation, and examined the way in which the written law has been interpreted by the courts. In addition, field studies and personal interviews were used to identify customary or unwritten law, so that later it could be compared with formal written law. Where feasible, the application of both written and customary law was evaluated in economic terms. In addition to preparing research reports of the various problems studied, the Law Project used the data obtained from field research for the preparation of case-textbooks on notarial, registry, property and agrarian law that will be used in teaching these subjects at the University of Costa Rica Law School.

A final activity which can be cited was the assistance in collecting property taxes (including delinquent accounts) provided through an arrangement worked out by a member of the Law Project, who worked closely with the Municipal Development and Training Institute (IFAM)[1] under this arrangement, ten employees of IFAM were assigned to the Property Tax Office, from October 1971 through 1972. As reflected in the table in Section C, this assistance, plus five quarterly billings in 1971, contributed to a rather substantial increase in collections that year.

The problem of maintenance caused another complication for the project. The loan agreement did not provide for maintenance of the system while it was being developed. As a consequence, the cadastral records were becoming obsolete over the three year period, due to a high rate of property "rights" changes (because of the exemption system, every "right" or "interest" in the property must be recorded).

In addition to the difficulty of reconciling the cadastral records with the existing tax records, and the problem of maintaining the cadastre during conversion of the system, the utility of the new cadastral records was further limited because legislation to change the basis of the property tax from <u>in personam</u> to <u>in rem</u> which had been anticipated when the project was undertaken never materialized.

1/ Established by AID loan L-023, Municipal Development

C. Accomplishment of Project Goals

Because of the difficulties described above, the project has had limited impact on property taxes.

The data[1/] show the following property tax collections:

1961	C.14,200,000	
1966	24,627,000	(reflects first reconciliation)
1967	33,797,000	(25% surcharge)
1968	3[illegible],164,000)	
1969	32,820,000)	reconciliation "bottleneck"
1970	36,000,000)	
1971	46,000,000	(reflecting five quarterly billings plus work of Administrative Collection Dept.)
1972	N/A	(preliminary estimates indicate a decline reflecting in part advanced payments in late 1971 which would normally have been made in 1972)

As of August 1971, the accumulative addition since the beginning of the program in increased value to the tax rolls was estimated to total $173 million. Because the rate of tax is low, the additional tax yield was about $750,000 per year. Delinquent billings were estimated to be over 10,000 in number and rising.

With responsibility for implementation of the fiscal cadastre now in the Tax Office, little if any use of the data is being made by other government agencies. However, mapping and cadastral work continue--the National Geographic Institute (IGN) is working with both the Municipal Development and Training Institute (IFAM) and the Land and Colonization Institute (ITCO)--in new activities essentially outside the geographic area of the L-011 project: the IGN is working with IFAM in assisting municipalities in the implementation of new fiscal cadastres: and the IGN is working with ITCO in photogrammetric and cadastral work in support of the Land Tenure Project of the Agricultural Sector Loan (L-022).

A final note in this connection concerns proposals for reform of the agrarian taxation structure in general, presented in a study undertaken in 1972, under the aegis of the earlier mentioned AID-supported Law Project. Decisions on reform of land taxation still lie in the future.

1/ Robert C. Wells. Rural Land Taxation in Costa Rica, A Legal and Economic Analysis (Costa Rica, 1972), p. 7. (IMF data show C.37.3 million for 1971 and an estimated C.37.5 million for 1972.)

2/ Ibid. p. 15-20.

Panama:	Cadastral Survey and Natural Resources Evaluation and Tax Administration
Loan No.:	L-007 and L-007/A
Amount:	$2,730,000 (amended total)
Date of Loan:	August 6, 1964 (Agreement signed)
Amendment No. 1:	September 26, 1968
Terminal Disbursement Date:	May 31, 1971 (Revised)
Disbursed:	$2,627,517

NOTE: The evaluation in Panama was carried out under certain limitations, being based exclusively on reading of AID Mission files and discussions with Mission staff and without access to Panamanian officials.

A. Purpose

The stated purpose of the loan was "to establish a basis for orderly land settlement, improved land use, land title registration, an evaluation of natural resources, establishment of an equitable and efficient rural land tax system, and other agricultural and land reform measures ..."

This purpose was to be accomplished through the following activities:

(a) the survey and study of present land use and natural resources capability, including collection and study of data with respect to soil capability and fertility, groundwater, drainage, erosion, geomorphology, geology, and economic and locational factors bearing on land utilization and valuation;

(b) a rural cadastral survey including definition and mapping of property boundaries and land ownership, development of land valuation formulae, and the assessment of rural land values;

(c) the cataloging, collation and analysis of data collected in the foregoing surveys and of existing data, and establishment of a land capability classification system;

(d) training of technical personnel to carry out the Project and to maintain and continue the surveys on completion of the Project;

(e) assistance to the Ministry of Finance in improving the administration and organization of rural property taxation;

(f) procurement of equipment and supplies for the foregoing purposes, and

(g) such other Activities to which the Borrower and A.I.D. may agree in writing.

B. Implementation

Project operations began December 1, 1964 with technical assistance provided under a loan-financed contract with a consortium of three U.S. firms. The survey was concentrated in the metropolitan region of Panama (except for the Panama City and Colon urban areas), the Central Region and the Chiriqui Region--about 35,000 square kilometers (13,500 square miles) or 46% of the national territory. Together, these areas contain about 90% of the rural population and the greatest agricultural activity. (It was anticipated that upon completion of the rural cadastral program, a similar tax mapping and tax appraisal program, covering at least the major cities, would be undertaken.)

The original work plan of property identification and valuation was based on a volume of 90,000 rural properties as indicated by the 1960 census data. In April-May 1967, when 100% of the properties in several districts had been identified, it was found that actual numbers varied greatly from the recorded census data. On the basis of the data gathered, it was estimated that the rural properties in the project area totaled 120,000, or approximately one-third more than originally [illegible]. Based on the discovery of approximately 30,000 additional properties to be surveyed and evaluated, plus a need to refine certain aspects of the national resources survey, the AID loan was amended on September 26, 19[illegible] to provide for an increase of $330,000 to the original and an extension of two years.

Also, in early 1969, a property tax administration component was added to the consultants' contract, to establish a methodology for integrating the new rural property maps, property records and valuations, generated by the rural cadastre, into the existing property tax system.

The project involved, in various times and places, some [illegible] Panamanians and 40 personnel from the U.S. Overall responsibility for the project within the Panamanian Government was assigned to the Agrarian Reform Commission (Comision de Reforma Agraria); additionally the Planning Office and agencies of the Ministries of Agriculture and Finance cooperated in the Cadastral project.

The Consultants "CATAPAN" consisted of a joint venture of three U.S. consulting firms. The sponsor and manager of the CATAPAN consortium had been responsible for producing the General Work Plan in 1963, which was the principal document by which the Government of Panama (GOP) requested and received USAID financing for the project, and also was in charge of producing the 1964 Detailed Work Plan.

The study produced at the completion of the project supplemented more than 5,000 separate maps, covering a project area of more than 3,600,000 hectares from the standpoints of some fifteen distinct technical

components. The consultants' final report indicated that, as a result of the loan activity, "the project area is covered by a mass of basic terrain, natural resources, and ownership data that is probably unparalleled in any other country except in some restricted areas of the United States, England and Germany."

Information about maintenance of the cadastre is very fragmentary. An internal AID memorandum of August 1969 reports that during the course of the project no provision was made for keeping the property inventory up to date, but that efforts were under way to keep the inventory of titled properties current and that this should not be a problem in the future. However, the untitled properties, which comprised some 75% of the total number of rural properties, presented an as yet unsolved maintenance problem. It was anticipated, however, that the new law permitting the issuance of valid titles on the basis of controlled photo-map description (map number-parcel number) would contribute to the acceleration of titling and thereby help reduce and ultimately eliminate the problem of untitled properties. It was also observed that the Fiscal Cadastre Office was sufficiently well organized and the staff sufficiently well trained that it could not only finish the work remaining to be done to complete the cadastre without further outside technical assistance, but should also be able to develop and carry out a successful cadastral maintenance program on its own. With respect to urban cadastral surveys, a major cadastral survey assessing real property values for Panama City and Colon was completed in 1970.

C. Accomplishment of Project Goals

1. Agrarian Reform - The rural cadastre was designed to produce a register of rural property ownership, establish the valuation on each property and provide the additional identification data and property maps required to accelerate the land titling process as well as to facilitate the implementation of an equitable and efficient rural property tax program.

a. Land Titling - The loan completion review and report of January 1972 estimates that, based on project activities, over 125,000 acres of agricultural lands previously under unknown or ill-defined tenure status had been returned to the public domain for more productive use. Land title registration has been nominal, however. Although the rate at which titles to land were being issued by the Agrarian Reform Commission rose threefold in the years from 1969 to 1972 compared to the annual rate of the preceding six years, only about 2,000 new titles have been issued in each of the last two full years.

It has been estimated that at this rate, it would take 35 years to catch up with the apparent 1970 backlog. The GOP's current rural development strategy, however, seems to place emphasis on group settlements (with plans for ultimate tenure arrangements as yet unclear), rather than facilitating individual titlings for the small farmer.

b. Rural Land Tax System - Pursuant to Subsection 3.1(h) of the Loan Agreement, the GOP in 1964 submitted a plan and schedule of proposed taxation and property registration improvements to be effected. Although revisions in property tax legislation were achieved in the fall of 1964, the proposed major reorganization of the rural land tax collection and enforcement division was not effected and only minor administrative changes took place. Further legislative and administrative changes needed to improve significantly the property tax and property registration programs were subsequently put off in view of pending national elections in 1968. At the time of its completion in 1971, the cadastre had revalued most rural properties. At that time, also, the project consultant made recommendations regarding land tax reform. However, no legal or administrative action has yet been taken to implement a reform of the land tax system. Because of the GOP's decision to continue applying an automatic valuation of B/30 per hectare to all rural land, the valuation of rural properties has had virtually no impact on the rural property tax.

2. Natural Resources Inventory Data - The natural resources survey was designed to indicate the agricultural, water, and mineral potential as well as the complementary data required for the valuation process. The initial components included soils, land use, surface geology and a groundwater survey with the subsequent addition of construction materials and fertilizer/non-metallic components.

The natural resources studies generated by the loan project reportedly have been utilized by the National Planning Office and, in connection with land settlement and titling activities, by the Ministry of Agriculture and the Agrarian Reform Commission. They are known to have been drawn on in the recently completed Agriculture Sector Study, conducted under the aegis of the Sector Study Commission of the National Planning Office.

There is less encouraging information, however, about the current use of the data in the computerized cadastral register. Reportedly,

owing to lack of liaison with the agriculture and planning authorities, no use is being made of this data, and the cadastral administration does not feel that it has access to Ministry of Finance computer time for other than tax purposes.

In sum, then, with respect to accomplishment of project goals, the loan has not brought about the implementation of an equitable and efficient rural property tax program and the reorganization of the system of property title registration; and there are only indefinite and generalized indications that the natural resources inventory data are being utilized.

Nicaragua:	Tax Improvement and Natural Resources Inventory
Loan No.:	L-012
Amount:	$5,400,000
Date of Loan:	February 28, 1966 (Agreement signed)
Amendment No. 1:	August 27, 1970
Terminal Disbursement Date:	March 31, 1972
Disbursed:	$5,397,000

A. Purpose

The purpose of the loan was to assist the Government of Nicaragua (GON) in "carrying out a project which was the three-year accelerated portion of a ten year program to evaluate natural resources and establish a basis for orderly land settlement, improve land use, land title registration and the identification of other development projects and programs in the fields of agriculture, industry and land reform, and to improve the tax system related to property taxes . . ."

This purpose was to be accomplished through:

(a) an integrated natural resources survey including studies of geology and geomorphology, soils, present land use, forestry and ecology, range capability, meteorology and climatology, ground water, surface water and other factors bearing on land utilization and valuation;

(b) the development of a land capability classification system;

(c) acceleration of basic mapping and special purpose large scale mapping;

(d) creation of effective property tax administration and collection capability;

(e) delineation of urban and rural properties; development of property ownership maps and property identification numbering system including map indices; development of modern mass appraisal capabilities along with the appraisal of urban and rural properties and the plotting of land valuations on a set of land valuation maps;

(f) processing, analysis and dissemination of the foregoing data;

(g) construction of two buildings to house the Geologic and Cartographic departments;

(h) training of technical and managerial personnel to carry out the Project and to maintain and continue the surveys for the completion of the Program;

(i) procurement of equipment and supplies to carry out the Project; and

(j) such other Activities to which the Borrower and A.I.D. may agree in writing.

B. Implementation

The Capital Assistance Paper established the basic goals of completion of all activities over 35,000 square kilometers of the Pacific Area, estimated to contain 200,000 properties. The original Detailed Work Plan set as goals the 35,000 square kilometer area for natural resource studies and 40,000 square kilometers for property mapping and valuation of an estimated 270,000 properties, 50% urban, 50% rural during a three year operations period. The final Detailed Work Plan, as amended, set as goals the 35,000 square kilometer area for natural resources studies and the property mapping and valuation of all urban properties within the 35,000 square kilometer area estimated at 100,000 properties and the property mapping and valuation of 62,500 rural properties in an area of 25,000 square kilometers during a period of three years and nine months.

Responsibility for organizing, directing, coordinating and supervising the execution of all activities of the overall Cadastral Program (i.e. the GON's ten year Program) was with the Executive Director's Office, established as a separate agency under the Ministry of Economy.

The Executive Director was assisted by a joint venture consisting of Development and Resources Corporation and Clapp and Mayne, Inc., as Executive Advisors to the Project; the Executive Advisors were responsible for preparation of the Detailed Work Plan and Valuation Manuals during the pre-implementation stage and for expert advice and evaluation during the implementation and operations phases of the Project. The Operations Consultant Group, consisting of a joint venture made up of Parsons Corporation, International Aero Service and Marshall and Stevens Inc., provided expert consulting for carrying out the work of each of the activities of the Project.

Ten GON agencies were involved in carrying out the activities, involving an estimated 737 GON personnel at the peak of the Project. Additionally, there were inputs to the overall Program from a German Technical Mission, the Inter-American Geodetic Survey, the Central American Bank for Economic Integration (CABEI) and the UN. Coordination of activities and maintenance of a balanced approach to an integrated program was, therefore, extremely difficult.

At the completion of the Project, the GON had substantially completed the requirements of the Project as set forth in the Loan Agreement and the Detailed Work Plan and, at the same time, created a cadre of trained technicians to carry out the work in the rest of the country.

At Project completion, the data indicated that 175,000 properties had been delivered from the mapping activity to the property valuation activity and that 154,000 properties had been valuated. At the same time, only 63,000 property ownerships had been verified and only 52,000 properties had been forwarded to the Tax Collection Office. Moreover, of the 52,000 properties forwarded, only 36,000 had been processed on to the tax rolls. Procedural changes to remedy the inefficient processes being used to verify property ownership had been recommended.

By the conclusion of the Project, the natural resources inventory component of the loan had produced valuable data, collected over the developed area of 35,000 square kilometers of the Pacific Coast; integrated analysis of these data had been initiated, and the data were being disseminated. Also, a channel had been established by law whereby the analyzed data and recommendations for implementation of identified development projects and programs are to be considered by the GON's planning officials.

The Cadastral Office is continuing its work of surveying the entire Program area. However, the pace of implementation has been slowed by insufficient government budgetary appropriations and the loss of trained staff to the higher salaried private sector.

C. Accomplishment of Project Goals

Any assessment of the impact of the AID loan on land reform, tax reform and utilization of natural resources data must take into account the emergency nature of the GON's planning program of 1973, resulting from the earthquake and drought suffered in 1972. The full extent to which Project goals are accomplished will have to await effective completion of the overall Cadastral Program by the GON, the utilization by official and private groups of the data produced by the Cadastral Survey, and

further evidence of Government performance in titling and taxation. Nevertheless, there are some indications of the Project's accomplishments.

1. Agrarian Reform - Determining the impact of L-012 on agrarian reform activities is difficult, since much of the current program of the Agrarian Institute of Nicaragua (IAN)--the agency established in 1964 with responsibility for land titles, settlement, rural training, land expropriation and development of new areas--is being undertaken outside of the loan project area. However, to the extent that the land registry and land titling system has benefited from L-012 and that the current titling and colonization activities are drawing on a Cadastral office capability which has been strengthened by the AID project, L-012 can be considered to have made a contribution. It is also known that the agricultural sector analysis, currently under way, has drawn heavily on the natural resources inventory produced by the AID loan (see below).

2. Tax Improvement - The increased number of property taxpayers and increased valuations resulting from the Cadastral Project are credited (along with more vigorous tax collection procedures, as well as the imposition of a new sales tax) with contributing to the improved overall Central Government revenue picture in 1970. Gains in property tax collections were also registered in 1971 and 1972; at the same time, according to the estimate in the loan completion report, the tax potential of the properties mapped as of mid-1972 amounted to $16 million, or about three times the amount actually collected that year. It was anticipated at that time that procedural changes to be implemented in 1972 would increase the efficiency of the operations and result in increased revenues in the future. As a consequence of the earthquake disaster, real estate taxes will experience a major reduction in 1973--preliminary estimates through September indicate more than a 15% decline over 1972 levels.

The Project's contributions to tax improvement may still lie in the future. Most immediately, it is believed that the Project's valuation activity in Managua may play an important role in any indemnification program undertaken by the Government in the reconstruction of Managua. For the longer range, there are implications for the Cadastral Project in new proposals for fiscal reform, such as have been advanced by the Advisory Center of the Central American Institute of Business Administration (INCAE). Among the Center's recommendations is one calling for increased property taxes; the Center has also recommended certain administrative measures, including a change in the nature of the property tax to in rem instead of in personam. Additionally, the Center is giving increasing attention to issues concerned with the strengthening of local governments, including local taxing authority. This may give some impetus to the activity contemplated in the Covenant, Section 3.5 of the Loan Agreement which had to do with restructuring the municipal tax system.

3. Natural Resources Inventory - One Loan Covenant (Section 6.9) provides for use of data for development projects. As mentioned earlier, under the Project a channel was established by law whereby the analyzed data and recommendations for implementation of identified development projects and programs were to be considered by the GON's planning officials. At the Project's conclusion, the analysis and recommendations of one region had been completed and were ready for presentation. The disposition of the first report is not known; however, because of the restructuring of the GON's institutional framework for development planning (consequent to the earthquake disaster), new procedures will have to be established for considering future projects identified on the basis of Project data. In the meantime, there is evidence of continuing demand for the data. During the operational period banks, consulting firms, drilling companies, international agencies, local industries, national development agencies and others requested information on soils, land use, hydrogeology, geology, land values, surface water, climatology. More recently, as mentioned above, the data served the Agriculture Sector Analysis and also were drawn on in the AID-financed "Feasibility Studies and Surveys". Future use of the data is anticipated when an OAS Regional Development Program gets under way, sometime in 1974.

Guatemala:	Property Tax Development Loan I and II
I. Loan No.:	L-014
Amount:	$2,200,000
Date of Loan:	July 10, 1967 (Agreement signed)
Terminal Disbursement Date:	September 30, 1973 (revised)
Disbursed:	$2,186,000
II. Loan No.:	L-023
Amount:	$1,250,000
Date of Loan:	February 28, 1973 (Agreement signed)
Terminal Disbursement Date:	December 31, 1976

A. Purpose

The primary purpose of L-014 (Phase I) was to achieve an "increase in property tax revenue of the GOG[1] through modernization of the tax base (property identification and appraisal) and improvement of tax collections through increased public acceptance and more efficient enforcement. The next most important objective of the project was the development within the Internal Revenue Service of the capability to continue the program after completion of the project. Another objective was the establishment of a modern property identification system to replace the obsolete land registry system and to serve as the base for a formal legal cadastre."

The purpose of L-014 was to be achieved through (1) the mapping and appraisal for property tax collection of the project area which covered approximately 12,000 square kilometers on the south coast and twenty-seven urban centers and (2) improvement of property tax assessment and collections.

The purpose of L-023 (Phase II) was to solidify the institutional process established in the first loan and to extend the system over a broader geographic area.

B. Implementation

Project funds were apportioned between two GOG agencies: The National Geographic Institute (IGN) of the Ministry of Communications and Public Works, and the Internal Revenue Service, a department of the Ministry of

1/ Government of Guatemala (GOG)

Finance. The activities of these two agencies were coordinated and supervised by a Project Administrator and assisted by a consulting group (the J. L. Jacobs Co., Inc.).

Although it is considered that L-014 obtained good results within its limited scope, it was necessary to follow up the loan with a second phase loan, L-023, in order to solidify the institutional process of cadastral surveying, tax assessment, tax notification and tax collection and to extend the system into the Department of Guatemala and certain areas of South coast Departments not covered by Phase I.

The first phase had provided for cadastral records of taxable properties based on cartographic feasibility and not according to fiscal requirements. It covered a swath of the more prosperous southern section of the country without regard to political divisions and thus did not provide cadastral records for all properties in any one Department, the political subdivision for taxing units. This created a major problem because without the cadastral records for an entire Department, the records must be tax implemented on a property-by-property substitution basis in order to register them into the obsolete tax list called the "Matricula".

The tax office, using manual methods, encountered serious difficulties in registering the vast amount of new records that were furnished to it by the cadastral project. Because of this situation, it was not possible for any one of the Departments to institute an overall reform. Phase II will correct this deficiency by photo-mapping an additional 8,000 square kilometers, containing an estimated 230,000 properties. With the completion of both phases, the new record system will cover up to 90% of the property tax base of the country as compared to the 20% covered by the first phase.

The new loan will provide for the completion of the implementation and administrative stages for the cadastre records that were developed under the original project through notifications and inscriptions, and as political units are completed, through billing. As Departmental areas are completed, a total cadastre record system will be substituted in place of the outdated matricula presently in use.

Under Phase II, a property tax system will be designed to be computerized by arrangement with the Ministry of Finance, including the functions of calculating property assessments, filing records on tape, preparing the bills and recording collections and delinquency accounts. The loan will also provide for a special study to determine the need, if any, for legislative reform as the new cadastral record system is applied to the Departments. And, finally, under the loan, provision is made to furnish the cadastral record listings and property maps to various local municipal governments having the authority to levy local property taxes, as well as to furnish advice and assistance to local municipal governments in property tax administration.

C. Accomplishment of Project Goals

1. Property Tax Improvement - Until the cadastral records are completed for an entire Department (it is expected that the first of these--Escuintla-- will be completed by the end of March 1974), implementation continues on the cadastral records under the original Project Plan, that is. an individual basis using a special computer program designed for that purpose. Even under these circumstances, tax revenue performance has improved: according to the latest data available, property tax collections for the entire country (based on the new records) for the first ten months of 1973 amounted to about $6 million, compared with $5.4 million for the comparable ten-month period in 1972. These data reflect approximately 15,000 new accounts (inscribed in the billing system), representing increases in value of roughly $75.6 million. At the prevailing rate this base increase of $75.6 million is estimated to generate $750,000 a year in additional revenue. It is also estimated that current collections represent about one half of potential revenues.

Expectations are for rather significant progress in improving the tax system and revenue within two years, by giving immediate priority to working in the Municipality of Guatemala (which represents an estimated 80% of the revenue producing properties in the entire country).

2. Titling - Although improved titling was not the primary goal of the project, it was expected that the project would indirectly contribute to the establishment of a modern property identification system. In furtherance of this expectation, the project is providing cadastral maps and computerized listings to the Property Registry to act as an initial start in its improvement.

3. Use of Cadastral Data - In addition to providing a property map system to the Property Registry, the project is furnishing cadastral record listings and property maps to the various local municipal governments having the authority to levy property taxes for local improvements.

Additionally, Mission personnel as well as relevant GOG agencies have been informed of the availability of data on the cadastral property card that can contribute importantly to development planning in the rural sector.