



December 20, 1973

PARAGUAY - CADASTRAL SURVEY AND PROPERTY TAX

IMPROVEMENT LOAN

PART I - SUMMARY AND RECOMMENDATIONS

1. BORROWER: The Government of Paraguay.  
Executing Agency: The Real Property Tax Office, Ministry of Finance
2. LOAN:
  - a. Amount: Not to exceed \$2.3 million to cover the foreign exchange costs (\$0.9 million) and part of the local currency costs (\$1.4 million).
  - b. Terms:

Interest - two percent per annum during the grace period and three percent per annum thereafter.  
Maturity - forty years from first disbursement.  
Grace Period - ten years from first disbursement.  
Disbursement Period - about fifty-seven months.
3. TOTAL COSTS: The estimated total cost of the proposed project is \$3.5 million, including GOP funds (\$1.2 million). The GOP funds are for local currency costs (current exchange 126 guaranies = \$1.00) in addition to the funds normally budgeted for the Real Property Tax Office. The relative contributions for financing project activities are shown in Table I.

TABLE I  
RELATIVE CONTRIBUTION  
(In U.S. \$ and \$/E)  
(x 1,000)

	<u>\$ COSTS</u>	<u>%</u>	<u>\$/E COSTS</u>	<u>%</u>	<u>\$ + \$/E TOTAL</u>	<u>%</u>
AID	900	(100)	1,400	(54)	2,300	(66)
%	(39)		(61)		(100)	
GOP	--	--	1,200	(46)	1,200	(34)
%	(0)		(100)		(100)	
TOTAL	900	(100)	2,600	(100)	3,500	(100)
%	(26)		(74)		(100)	

4. DESCRIPTION OF THE PROJECT:

- a. The project will enable the Real Property Tax Office to inventory, identify and define all land holdings, both urban and rural, and the owner or possessor thereof, in the more developed eastern region of the country, excluding Asunción. This region encompasses 159,625 square kilometers or 39% of the country's total area; contains 81% of the country's population; and has an estimated 70% of the country's total land value. It is divided into thirteen departments, which in turn are subdivided into 166 districts. Since the tax base is established according to districts, the project operations will be carried out district by district within each department according to priorities recommended by the Technical Planning Secretariat.
- b. The project activities include the following:
- 1) Compiling all pertinent existing data and information related to land holdings and to their owners or possessors. This will include making an index of the property deed registrations, which record the existing rights in land.
  - 2) Identifying and delineating each land holding according to the criteria for ownership or possession; and making a field verification of the status of ownership or possession.
  - 3) Compiling cadastral plans, and a cadastral record for each land holding.
  - 4) Compiling valuation records of each land holding, which includes the updating of existing records.
  - 5) Establishing an IBM punch card file of each land holding, which will be coded to produce unified tax receipts for taxable properties.
  - 6) Decentralizing the present tax collection system.

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- c. The loan funds would finance the following:
- 1) Aerial photography;
  - 2) The indexing of the deed register;
  - 3) The procurement of vehicles, equipment and materials;
  - 4) Technical assistance, consisting of a long-term advisor for field operations and four short-term technical advisors;
  - 5) Project operation costs, consisting of vehicle operation and maintenance costs, field per diem and overtime pay \* for local project personnel.

5. PURPOSE:

The primary purpose of this project is to provide the Real Property Tax Office with the basic elements required to carry out a functional and more equitable property tax assessment and collection program.

The implementation plan contemplates the creation of a national land surveying system, which will combine the cadastral surveying activities of the Real Property Tax Office with the land surveying activities of the Ministry of Public Works and the Agrarian Reform Agency. This will provide the essential element for converting the present deed system of property registration to a functional deed system of land registration. Moreover, project outputs are designed to provide other GOP agencies with basic information on land distribution, tenure and use. This information will improve their capabilities for planning and executing a wide variety of development programs involving land resources. It will also facilitate transfer of properties through more positive title identification.

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\* NOTE: The base work week for GOP employees is thirty hours per week, i.e. five hours per day for six days. Project personnel will be working a 45 hour week, i.e. eight hours for five week days plus Saturday morning. The overtime pay referred to throughout this paper is for those hours worked beyond the basic thirty hour week. It will be paid at the normal thirty hour week salary rates, but it will not affect social security benefits, holiday pay, vacation pay.

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6. FINANCIAL PLAN:a. Funding Requirements and Sources of Financing

TABLE II  
TOTAL PROJECT FUNDS (1974-1978)  
(In U.S. \$ and \$/E x 1,000)

	<u>\$</u>	<u>\$/E</u>	<u>TOTAL</u>	<u>%</u>
1. AID				
a. Aerial Photography	160	-	160	4.6
b. Vehicles	170	-	170	4.9
c. Technical Assistance	150	-	150	4.3
d. Equipment	261	33	294	8.5
e. Materials	80	41	121	3.4
f. Operational Costs	-	1,286	1,286	36.8
g. Registry Index	-	40	40	1.1
h. Contingency	79	-	79	2.2
TOTAL AID	(900)	(1,400)	(2,300)	(65.8)
2. GOP				
a. Salaries	-	895	895	25.7
b. Dept. Tax Offices	-	134	134	3.8
c. Social Security	-	71	71	2.0
d. Vehicle Insurance	-	19	19	0.5
e. Facilities (new)	-	16	16	0.4
f. Contingency	-	65	65	1.8
TOTAL GOP	(-)	(1,200)	(1,200)	(34.2)
3. GRAND TOTAL	900	2,600	3,500	100.0

b. Distribution of Funds

**TABLE III**  
**DISTRIBUTION BY YEAR**  
(In U.S. \$ and \$/E x 1,000)

	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>TOTAL</u>
1. AID	876	419	416	353	236	2,300
%	(38)	(18)	(18)	(15)	(11)	(100)
2. GOP	135	258	272	286	249	1,200
%	(11)	(22)	(23)	(24)	(20)	(100)
3. TOTAL	1,011	677	688	639	485	3,500
%	(29)	(19)	(20)	(18)	(14)	(100)

7. ALTERNATE SOURCES OF FINANCING: Representatives of the Inter-American Development Bank and the International Bank for Reconstruction have not shown interest in financing the proposed project. The authorization of this CAP will be contingent upon prior receipt of their written confirmation of "no interest".
8. HOST COUNTRY CLEARANCE: The Paraguayan Technical Planning Secretariat approved the proposed loan in a letter received by the USAID. Personnel from that entity have been involved in the planning and development of this project since its inception.
9. STATUTORY CRITERIA: All statutory criteria have been met. Annex III contains the Statutory Check List.
10. VIEWS OF COUNTRY TEAM: Paraguay is unable to achieve her planned levels of investment or utilize the external resources that could be made available to her because she cannot generate adequate revenues. The Country Team therefore assigns a high priority to this project. (See the FY 1974-1975 CASP).

11. ISSUES: See Annex IV of this paper for clarification of issues raised at the time of the IRR approval.
12. LOAN ADMINISTRATION: Although the proposed loan would require no unusual disbursement or procurement procedure, USAID/P proposes to negotiate a grant funded PASA with DMA-IAGS for the services of a cadastral specialist as adviser for the project and to monitor the loan. The Mission believes that most problems generated in prior USAID supported cadaster projects have been due to local Missions' failure to maintain close liaison with project operations. This can be achieved most effectively through the presence of a highly qualified cadastral technician during the early stage of the project. Such talent is not presently available in the Mission staff. We estimate two year funding for the proposed technician (project monitor).
13. RECOMMENDATIONS:

On the basis of the conclusions of the Capital Assistance Committee that the project is technically, economically and financially sound, it is recommended that a loan to the Government of Paraguay for an amount not to exceed \$2,300,000 be authorized subject to the following conditions:

  - a. Interest and Terms of Repayment. The Borrower shall repay the loan to AID in United States Dollars within forty years from the first disbursement under the loan, including a grace period of not to exceed ten years. The Borrower shall repay to AID in United States Dollars on the disbursed balance of the loan annual interest of two percent during the grace period and three percent thereafter.
  - b. Source and Origin Requirements. Goods, services (except for ocean shipping) and marine insurance financed under the Loan shall have their source and origin in Paraguay and countries included in AID Geographic Code 941. Marine insurance may be financed under the Loan only if it is obtained on a competitive basis and any claims thereunder are payable in convertible currencies. Ocean shipping financed under the Loan shall be procured in any country included in AID Geographic Code 941.

- c. Disbursement Procedures for Local Currency Costs.  
United States Dollars utilized under the Loan to finance local currency costs shall be made available pursuant to procedures satisfactory to AID.

14. PROJECT COMMITTEE:

Loan Officers	* H.L. Miles, CDO/USAID/P J.C. Basualdo, CDO/USAID/P
Consultant	* J. Rosholt, IAGS/NRD
Public Adm. Advisor	* W.B. Flaherty, PAD/USAID/P
Economist	* R.W. Adler, PO/USAID/P
Engineer	P.S. O'Shaughnessy, ENG/USAID/P
Controller	D.B. Barrigan, CON/USAID/P
Legal Officer	N. Williams, RLA/Lima
Reviewed by:	R.A. Witherell, AD/PO/USAID/P
Approved by:	Oliver L. Sause, DIR/USAID/P
* Drafters	

USAID/Paraguay  
CDO - October, 1973

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December 20, 1973

PART II - PROJECT

SECTION I - NATURE OF THE PROJECT

A. Description of Activity

1. Definition of Objectives

a. Introduction

The primary objective of this project is to increase the amount of Paraguay's Real Property Tax Collection. This will be achieved by:

- 1) Increasing the number of taxable properties on the tax rolls;
- 2) Identifying properties already on the tax rolls, but delinquent in tax payments;
- 3) Applying special taxes to rural properties;
- 4) Further modernizing the tax billing system;
- 5) Further decentralizing the tax collection system;
- 6) Implementing a field collection function to supplement the present office collection function, principally in urban centers, including Asunción; and
- 7) Expanding and decentralizing the maintenance system of the cadastral records and the property tax records.

In addition, the project is designed to:

- 1) Provide the Property Registry Office with a current property owner index to the property deed inscriptions;
- 2) Provide basic data on land holdings to other GOP agencies; and
- 3) Provide the framework for setting up a national cadastral and land surveying office.

Moreover, during the period of project implementation, the GOP will be encouraged to improve the present property registration system. This can be done by:

- 1) Using the cadastral description of land holdings for the deed inscriptions; and

2) Decentralizing the registration function.

b. Area

The proposed cadastral project will be carried out in the more developed eastern part of the country, known as the "Oriente" Region. This region lies to the east of the Paraguay River, contains 81% of the country's population (including Asunción), and encompasses about 159,625 square kilometers or 39% of the country's total area. It is divided into thirteen departments and 166 districts. (See Annex II, Exhibit 1).

c. Number of Properties

The proposed project will inventory, identify and define an estimated 250,160 rural properties and 79,600 urban properties. In addition, the project will up-date and revise 176,240 urban properties in thirty-eight larger towns, which were surveyed by the Real Property Tax Office during the past ten years. Thus the total number of new properties to be incorporated into the cadaster is estimated at 329,760 and the completed cadaster will total an estimated 506,000 properties. (See Annex II, Exhibit 4).

The project does not include the City of Asunción. The urban cadaster of Asunción is completed and is being adequately maintained.

d. Plan of Operation

The cadaster will be undertaken district by district, according to a plan of field operations, during a four year period. (See Annex II, Exhibit 4). The work will be carried out according to zones of development priority recommended by the Technical Planning Secretariat. The region has been divided into six zones for this purpose. (See Annex II, Exhibit 1).

e. Property Ownership Verification

Experience in other Latin American countries has shown that the most difficult part of a cadastral operation is the field identification and verification of the owners and/or possessors of land holdings. Therefore, in order to facilitate this, the project will compile the following information for each department and district prior to initiating the field work: (See Annex II, Exhibit 3).

- 1) An index of current owners of properties that are recorded in the Property Registry of the Ministry of Justice. (See Annex II, Exhibit 21).

- 2) Information on land and land holdings under the administration of the Instituto de Bienestar Rural (IBR), the GOP agrarian reform agency, which has several land colonization projects throughout the area. IBR has surveyed its land holdings and has a record of the occupants and recipients of agrarian land holdings. (This information is also required for tax purposes since IBR lands are exempt from tax. See Annex II, Exhibit 19).
- 3) Information from SENEPA, the malaria control agency under the Ministry of Health. SENEPA has:
  - a) District maps, compiled using aerial photographs, showing the boundaries of the districts and the location of each town and settlement within each district. (See Annex II, Exhibit 5).
  - b) Compass and pace sketch maps of each small town (under 100 lots) and settlement within each of the 166 districts. Each house is identified and numbered on these maps. (See Annex II, Exhibit 5).
  - c) The name of the head of household living in each numbered house or building.
  - d) Information on the road conditions of each district. (This information from SENEPA will greatly assist in planning the field operations).
- 4) Survey plans of individual farms on file at the Land Survey Section of the Ministry of Public Works. It is estimated that about 200,000 farms have been surveyed in the project area during the past forty years, using transit and tape methods. A field check of these plans will enable the cadastral office to identify which farms have been surveyed, and to file these plans using the cadastral parcel number.

f. Rural Property Identification

An estimated 250,160 rural properties will be identified using aerial photography. Aerial mapping photography at 1:50,000 and 1:60,000 scales of the entire project area already exists. This photography will be enlarged to 1:20,000 scale and will be used to identify the larger rural farms (forty hectares and above) which cover an estimated two-thirds (107,000 square kilometers) of the project area. Additional aerial photography at 1:30,000 scale, covering 53,000 square kilometers, will be taken in areas where the average farm size is less than forty hectares or

where considerable changes have taken place. This photography will be enlarged to 1:10,000 scale for this purpose. (See Annex II, Exhibit 5).

#### g. Rural Cadastral Plans

The rural cadastral plans will be compiled at 1:20,000 and 1:10,000 scales using the field annotated photographs and the base topographic manuscripts (at 1:20,000 scale) being produced by the Instituto Geográfico Militar (IGM) under the Ministry of Defense. (The IGM produces these manuscripts for their basic topographic mapping program in collaboration with DMA-IAGS). Simple drafting techniques, using Zoom Transfer Scopes, can be used for this purpose because of the relatively flat terrain throughout ninety percent of the area. Moreover, the rural cadastral plans will be drafted according to fixed geographic coordinates and will have a plane coordinate grid system based on a conformal projection. (See Annex II, Exhibit 7).

The IGM photogrammetric compilation of the base manuscripts will be accelerated to meet the project schedule. The DMA-IAGS is already providing IGM with additional equipment and with a full-time photogrammetrist for this purpose. In turn, the project will provide IGM with additional people and materials. (See Annex II, Exhibit 6).

#### h. Urban Cadastral Plans

Due to limited in-country cartographic capabilities, the urban cadastral plans will be drafted in the form of block plats at 1:500 scale. The plats will be compiled from field tape and compass measurements of each block and of each lot. The blocks will be numbered on an index map, according to a 1:1,000 scale map format, and the lots will be numbered within each block. (See Annex II, Exhibit 8).

#### i. Valuation and Tax Records

The proposed project will up-date and/or compile valuation and tax records for each property, using the basic cadastral data. This will be done district by district as the cadastral operations advance throughout the project area.

The tax is based on land values established for each district (rural) and based on category of town and type of street (urban). In addition, the rural properties pay a road tax according to the highest category of road within 25 kilometers, and rural properties in excess of 5,000 hectares pay an additional tax. (See Annex II, Exhibit 19). Therefore, this activity consists of determining the base value of each property according to its area and of calculating the direct tax, road tax and the

additional tax, if applicable. Moreover, this activity will up-date and/or compile a tax record for each property, applying any changes in values and summarizing the amount of tax due by category year by year for a period of ten years, the maximum period for which back taxes may be collected. (See Annex II, Exhibit 3).

**j. Automated Billing System**

The office will punch IBM cards for each land holding, which will be filed by districts. These cards will be used to print tax bills and tax listings. Tax bills will include a summary of delinquent taxes. In addition, the cards will be coded to produce special listings on land distribution, land tenure and land use for other GOP agencies, as required.

**k. Decentralized Tax Collection**

Until 1972, the entire property tax collection mechanism was centered in the Real Property Tax Office in Asunción. Consequently, tax collection efforts were concentrated in Asunción and surrounding areas. In 1972, the tax office opened three regional offices in Encarnación, Villarrica and Concepción. Two more will be opened this fiscal year in Pedro Juan Caballero and Pilar. The proposed project will open a property tax collection office in the capital city of the other departments as the project operations advance throughout the region. (See Annex II, Exhibit 20).

**l. Maintenance**

In order to initiate cadastral maintenance at the department and district levels, the proposed project will also install a cadastral representative in the capital city of each department. (See Annex II, Exhibit 14). This will be done in conjunction with the establishment of the tax collection offices mentioned above.

**2. Limits of AID Financing**

**a. Foreign Exchange Costs - \$900,000**

1. Aerial photography - \$160,000 (Annex II, Exhibit 5).
2. Vehicles - \$170,000 (Annex II, Exhibit 12).
3. Technical Assistance - \$150,000 (Annex II, Exhibit 10).
4. Equipment - \$261,200 (Annex II, Exhibit 11).
5. Materials and Supplies - \$80,000 (Annex II, Exhibit 11).
6. Contingency - \$78,800\*

\*Each line item above has a contingency included in the cost. These contingencies total \$104,750 or 11.6% of \$900,000 (See Annex II, Exhibit 16).

b. Local Currency Costs - \$1,400,000

1. Personnel Costs - \$484,120\* (Annex II, Exhibit 14).
2. Field Per Diem Costs - \$608,670 (Annex II, Exhibit 16).
3. Vehicle Operation - \$171,840 (Annex II, Exhibit 16).
4. Vehicle Maintenance - \$21,360 (Annex II, Exhibit 16).  
(Total Operational Costs above \$1,285,900)
5. Equipment and Furniture - \$32,810 (Annex II, Exhibit 11).
6. Registry Index - \$39,685 (Annex II, Exhibit 21).
7. Materials and Supplies - \$41,515\*\*

\*Personnel Costs consist of overtime pay, at base salary rates, for GOP project personnel working over thirty hours per week, which is the base work week for GOP employees.

\*\*Included in materials and supplies is the cost for printing about 3,500,000 forms required for project activities.

3. Operating Criteria

The Real Property Tax Office of the Ministry of Finance was given the responsibility to carry out cadastral activities, both urban and rural, by Law Decree No. 51 of 24 December 1952.

There is no other GOP entity that has this responsibility, and the AID loan supported project will operate within the administrative and operational framework of this office. (See Annex II, Exhibit 17).

The inputs from the cadastral operation will, of course, affect the existing activities in the Real Property Tax Office. Therefore, it is proposed to change the physical location of these activities within the office in order to have more efficient coordination between project activities and on-going activities. Preliminary plans for restructuring the tax office were discussed during the intensive review.

Since the maintenance of the cadaster is basically a land survey and land registration function, the GOP will be encouraged to establish an independent agency responsible for cadastral and land survey activities upon completion of the project. This will enable the Real Property Tax Office to concentrate its efforts on property valuation and tax collection. The Director of the Real Property Tax Office concurs and the project will establish cadastral records, separate from the present cadastral valuation records, in order to facilitate this type of action. Moreover, such action will provide the GOP with the means for converting the present deed system into an effective land registration system. (See Annex II, Exhibit 21).

## **B. Background of Project**

### **1. Genesis of the Project and Opinions of Other Institutions**

In 1962, the Real Property Tax Office initiated a simple urban cadaster, consisting of block plats, in Asunción and thirty-nine other principal towns. In 1970, the Ministry of Finance requested technical assistance from the Organization of American States (OAS) to conduct a rural pilot cadaster and to develop a project proposal for a rural cadaster in the more developed eastern region of the country. In 1971-72, a small pilot project was undertaken in the Department of Itapúa by the Real Property Tax Office, under the direction of a technician from the Regional Development Office of the OAS. (See Annex II, Exhibit 2). The tax office then developed a rural cadastral project proposal in 1972, based on the results of the pilot project, which was presented to the USAID Mission in January 1973.

The Ministry of Finance made an informal inquiry about the possibility of obtaining an AID loan to finance the proposed rural cadaster. The Mission advised the GOP representative that he should try to obtain financial help from other sources, particularly IBRD and IDB. The GOP representative stated that he had already done so and that the IDB and IBRD showed no interest in funding the proposed project. The Mission, on an informal basis, cross-checked with visiting representatives of IDB and IBRD, who confirmed the statement of the GOP representative. However, the IDB and IBRD representatives were of the opinion that there was a need for a rural cadaster, particularly in the proposed project area, where the rural population represents sixty percent of the country's total population. The Mission decided that, if the proposed project were feasible, it would be significant to the economic development of Paraguay. It then requested the services of an experienced cadastral program specialist from the Inter-American Geodetic Survey to conduct a preliminary review of the proposal. The preliminary review was carried out in March 1973 with the participation of Mission representatives and officials of the Real Property Tax Office.

The results of the preliminary review revealed some important discrepancies in the proposed project. The number of rural properties was considerably underestimated. It had been based on 1962 census statistics. Also, the need for additional and more recent aerial photography had been overlooked, as had appropriate procedures to verify and maintain property ownership information. Moreover, a review of the tax collection performance in the urban areas already surveyed, revealed that only about ten percent of the 179,000 cadastered properties outside of Asunción were paying taxes, and that these urban cadasters were not being maintained adequately. The Mission assisted the Real Property Tax Office

in recalculating the cost of the rural cadaster and in updating and completing the urban cadaster in the project area as well. The estimated cost was \$2,720,000. Based on this, the GOP submitted its formal application for an AID loan to help finance the project. The Mission then developed the IRR and submitted it to AID/Washington for approval.

The Mission undertook the intensive review during July, August and September 1973, again with the assistance of the cadastral program specialist of the Inter-American Geodetic Survey. The preliminary estimates of personnel and equipment needs were refined and particular attention was given to improving the tax collection and maintenance aspects. As a result, 79 additional positions were added, 65 of which will be assigned to the Property Tax Collection and Cadastral Maintenance Offices to be located in the capital city of each department.

## 2. Adjustments to Original GOP Project Proposal and IRR

The basic differences between the original project proposal, the IRR Review and the intensive review are summarized below. It should be noted that the largest increase is for personnel costs, which constitute 60.6% of the total project costs of \$3.5 million. (See Annex II, Exhibit 14).

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**TABLE IV**  
**SUMMARY OF BASIC DIFFERENCES BETWEEN THE**  
**LOAN PROPOSAL, THE IRR AND THE CAP**

	<u>PROPOSAL</u>	<u>IRR</u>	<u>CAP</u>
1. Number of Estimated Rural Properties (1972 census reports 246,504 occupied houses in rural area of project)	132,592	250,160	250,160
2. Number of Estimated Urban Properties	NONE	255,840	255,840
3. Total Project Cost (x 1,000)	1,482	2,720	3,500
4. Average Cost Per Property	11.17	5.37	6.91 (includes maintenance)
5. Number of People Required IRR included 35 additional people for urban work. CAP added 65 people for department offices	124	175	254
6. Personnel Costs			
a. Salaries	526,932	698,868	1,028,775
b. Overtime	38,095	307,582*	484,120*
c. Total	565,027	1,006,450	1,512,895
(* includes overtime for 28 on-going personnel)			
7. Average Cost Per Person	4,560	5,880	5,960
8. Materials, Equipment, Vehicles	183,895	353,665	585,525
9. Aerial Photography	NONE	160,000	160,000
10. Technical Assistance	70,700	150,000	150,000
11. Per Diem and Field Operating Expense	373,720	790,670	801,870
12. Contingency	62,850	94,905	144,455

### 3. Country Team Review and Recommendations

Paraguay is unable to achieve her planned levels of investment or utilize the external resources that could be made available to her because she cannot generate adequate revenues. The Country Team therefore assigns a high priority to this project. (See the FY 1974-1975 CASP).

### 4. Host Country Clearance

The Paraguayan Technical Planning Secretariat approved the proposed loan in its letter to the USAID.

## C. Program Justification

### 1. Place of the Project in the Country Program

AID has been assisting Paraguay in Tax Administration improvement, through the services of an IRS PASA team, since FY 1965. While the Mission has not chosen Tax Administration as an area of concentration, it is clearly a Priority Development Problem as revenues are inadequate to investment needs. Our assistance in Tax Administration is therefore scheduled to run through FY 1975, until project completion.

Examples of the IRS assistance to the Real Property Tax Office include: modernization of files, changing taxpayer account records from hand-written ledgers to modern punch cards located in locked files, more efficient billing procedures, realignment of office space, recommendations for O&M and collection functions and initial decentralization of administration through the establishment of regional offices.

All of these administrative improvements will have beneficial implications for the proposed cadaster. Also, the tax team will remain in Paraguay, at least during the first years of the cadaster, to assure maximum integration of the cadaster into the present Real Property Tax System.

### 2. Project Contribution to Paraguay's Development

A major contribution of the project to Paraguayan development consists in increased revenues which accrue from improved assessment and collection of property taxes and in the government expenditures supported by these revenues. Additional benefits derive from the fact that the project will facilitate property transfer because of improved title identification resulting from a functional deed system of land registration. In addition, project outputs are designed to provide GOP agencies with basic information

on land distribution, tenure and use which will improve their capabilities for planning and executing development programs involving land resources.

While property tax revenues are a relatively low proportion of present Central Government revenues averaging 4.7 percent of the total current revenues in the years 1967-1971, this ratio has been maintained by means of improvements in the urban cadastral system, a more vigorous collection effort and increased tax rates and property assessments. However, it will be of little avail to increase taxes on rural property unless delinquent taxpayers are identified and taxes collected. The Mission and the GOP believe that rural property owners can and should bear a higher burden of taxes than at present.

In assessing the desirability of the project, it is appropriate to review past GOP efforts to increase tax revenues. During the 1960's the GOP embarked on a substantial effort to increase fiscal revenues. Tax revenues as a percentage of Gross Domestic Product increased from 7.9 percent in 1962/64 to 10.5 percent in 1969/71. This improvement represented continuation of the trend which started in 1954/55 when the ratio of tax revenues to GDP was only 6 percent. As is noted by a recent World Bank study on Paraguay, this effort placed Paraguay in the forefront of developing countries where the marginal tax rate has been the highest.

The tax measures employed by the GOP to increase revenues during the past decade have been relatively untidy. This fiscal effort relied mainly upon increased rates of, and creation of, indirect taxes, some of which have been relatively high-yield taxes, such as stamp and stamp-pape taxes, sales taxes, excise taxes, and taxes on alcoholic beverages. Available data suggest that indirect taxes have grown as a percentage of total tax revenues while direct taxes have diminished. In other words, direct taxes were not sufficiently dynamic to compensate for increases in indirect taxes.

On the basis of past performance and of recent improvements in tax administration, it is very likely that the GOP will place increasing reliance upon property taxes as a revenue source. Thus, the principal benefit comes not only from the economic features of an equitable system of property taxes and its unshiftable character, (that is the property owner cannot shift the tax), but also from the positive economic benefit of increased noninflationary governmental expenditures. Public expenditures on economic and social infrastructure have grown substantially in recent years, but many projects with relatively high economic benefit could be undertaken with increased fiscal revenues. In this context it can be noted that Paraguay's major public sector enterprises have been able to generate substantial savings to finance their investment program

with little budgetary support from the Central Government. Construction of roads, schools, and agriculture services depend, however, on budgetary support, and these services yield high economic benefits.

3. Impact on U.S. Economy

Because of its nature, the project has little direct contribution to the increase of private commercial relations between the U.S. and Paraguay. It is estimated that the dollar procurement, amounting to \$750,000 for aerial photography, vehicles, equipment and materials, will be from the U.S. The project will not affect the competitive position of U.S. industries in Paraguay nor will it adversely affect the U.S. economy, including areas of substantial labor surplus.

4. Building of Democratic Institutions

The institutional building aspects of this project are:

- a. Improved capacity of the Real Property Tax Office to place taxable properties on its rolls and the development of procedures to carry out a more efficient tax billing and collection system.
- b. The creation of a mechanism that will enable the GOP to centralize its land surveying and cadastral mapping activities.
- c. The conversion of the existing property deed registration system into a more efficient and functional land registration system.
- d. Improved capacity of the national mapping agency (Military Geographic Institute) to provide current aerial photographic products and maps for other GOP development projects and programs.
- e. The creation of a source of information (cadastral maps and records) that can be used for many purposes, such as updating the national census, agrarian reform and land use statistics.

5. Consistency with CIAP Reviews

Recent CIAP reviews on Paraguay have expressed concern about Paraguay's fiscal situation, particularly the low growth in Central Government current revenues during the past three years. This anxiety focuses on the availability of domestic counterpart to support investment projects financed by external agencies, the level of investment of Central Government, and the inflationary impact of domestically-financed fiscal deficits. The principal strategy employed by the last two CIAP Sub Committees (January 1972 and May 1973) has been to establish targets for

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Central Government current revenues and expenditures such that Central Government resources to finance investment programs would be adequate within the context of noninflationary borrowing from the Central Bank. In 1972 the GOP failed to meet the CIAP target for current revenues and the resulting deficit financed by the Central Bank exceeded the limits of monetary prudence.

The GOP expressed the intention at the January 1972 CIAP meeting to request external technical assistance to aid in the study of its tax system. However, little was done in this direction until the 1973 CIAP meeting at which the CIAP Secretariat, acting upon a request by the GOP, sent an exploratory fiscal mission to Paraguay in late August, 1973. This exploratory mission conversed with officials of the Ministry of Finance and aided in the preparation of a program of technical assistance (See Airgram TOAIB A-132, September 17, 1973). Although the final report of this mission is not yet available, in general it was the impression of the mission that (a) there are important elements of fiscal reforms present in the plans of the Ministry of Finance; (b) these elements relate mainly to administrative reforms rather than to changes in tax laws; and (c) the Ministry does not appear to desire external assistance for a major tax policy study.

The CIAP exploratory mission considered that the major elements of fiscal reforms in the plans of the Ministry of Finance were activities proposed in the areas of taxes on imports and rural properties. Members of the mission were in unanimous agreement that the creation of a cadaster roll for rural properties in eastern Paraguay is an obvious precondition for fiscalization of taxes on rural real estate. This activity should be included in any logical program for improvement of Paraguay's tax system. Thus, even excluding consideration of tax rates, which obviously is an important determinant of revenues from taxes on rural properties, the project is necessary for improved administration of rural property taxes. Moreover, the incidence of the burden of taxes on income from agricultural activities is relatively low in the total tax burden. Improved administration of rural property taxes is necessary and such taxes may be administratively more efficient than certain taxes presently utilized to tap agricultural income such as cattle transfer taxes and export taxes. The CIAP working group of 1972 which prepared a study on Paraguay's tax system (Estudio Fiscal del Paraguay) recommended the execution of a rural cadastral survey as a short to medium-term measure. The precise system of property valuation assessment and the tax base; that is, a net worth tax or land tax based on potential productivity, are important longer-term considerations. It is recognized by representatives of CIAP and affiliated external agencies that these questions should be considered in a more general tax policy study.

6. Certification of the USAID Director

The USAID Director certified on October 18, 1973 as to the satisfactory performance by the Government of Paraguay with respect to previous AID Loans and its capability of implementing the proposed loan. Annex I contains a copy of this certification.

**SECTION II - PROJECT ANALYSIS****A. Borrower****1. Principal and Participating Entities**

- a. The Borrower will be the Government of Paraguay acting through the Ministry of Finance.
- b. The entity responsible for the execution of the proposed project will be the Cadastral Department of the Real Property Tax Office of the Ministry of Finance. The responsibility for carrying out the cadastral activities lies with this Department, which will receive related support in updating and compiling the valuation tax records and tax bills from the other departments of the Real Property Tax Office (See Annex II, Exhibit 17).
- c. Other entities providing inputs into the proposed project include:
  - 1) The Military Geographic Institute (IGM), which will provide photo-laboratory facilities and base manuscripts for drafting the rural cadastral plans; (See Annex II, Exhibits 5 and 6).
  - 2) The Real Property Registry of the Supreme Court, which will provide a property owner index of property deeds recorded in the registry; (See Annex II, Exhibit 21).
  - 3) The Land Survey Section of the Ministry of Public Works, which will provide the means for making copies of existing property survey plans;
  - 4) The Agrarian Reform Agency (IBR), which will provide the means for making copies of survey plans and other related records of lands under its control; and
  - 5) The Malaria Control Agency (SENEPA) of the Ministry of Public Health, which will provide the means for making copies of maps, plans and other related records.

**2. Organization and Management**

The organization diagram of the Real Property Tax Office and the Cadastral Department are shown in Annex II, Exhibit 17. The summary biographic data of key supervisory personnel of the Real Property Tax Office are shown in Annex II, Exhibit 18.

The Cadastral Department, which will be responsible for all project activities, is organized into four divisions, each of which is divided into three sections. Each division and section is headed by a supervisor. Moreover, each field section includes eight activities, each with its supervisor. This structuring of project management into four levels of responsibility assures adequate supervision of each project activity.

The office activities of the project will be housed in the Real Property Tax Office as a separate function. The office facilities will be modified to accommodate project personnel. (See Annex II, Exhibit 17).

### 3. Technical Feasibility

The majority of the project activities identified in Annex II, Exhibit 3, involve mostly clerical operations, which require very little technical "know how". These activities can be carried out according to procedures developed in the detailed work plan.

The technical activities of the project include the following:

- a. Field identification of property boundaries on aerial photography which will be carried out using techniques already developed in other countries and employed for the rural pilot project.
- b. The processing and enlarging of aerial photography, which will be carried out mostly by IGM personnel who have some experience. They will be trained to use the photo-laboratory equipment and to employ standard operating techniques.
- c. The compilation of base topographic and planimetric manuscripts, which will be carried out by IGM photogrammetrists being trained by DMA-IAGS.
- d. The drafting of cadastral plans, which will be carried out by project personnel. They will be trained to use the transfer scopes and to draft the cadastral plans with grid lines, using standard techniques.
- e. The automatic data processing, which will be carried out by present personnel of the tax office who have the basic knowledge and experience required to meet most project needs.

The project does involve a large number of interrelated activities, which will require a fairly high degree of basic supervision, coordination and planning. This coordination and planning responsibility is

with the Project Director, four Division Chiefs and twelve Section Chiefs. (See Annex II, Exhibit 17).

One critical activity will be identification of those areas requiring new aerial photography prior to negotiating the contract. However, steps are being taken to identify these areas by using the existing aerial photography and photo mosaics. Moreover, this activity will be reviewed by the project advisor for field operations prior to taking the photography.

In conclusion, the Mission considers that the planning and analysis of the project is sufficient to ensure its technical feasibility and that reasonable estimates of project costs have been made in compliance with the requirements of FAA Section 611.

#### 4. Maintenance

##### a. Cadastral and Tax Records

Contrary to prevailing conditions in many Latin American countries, no additional legislation will be required in order to ensure a sound legal basis for the maintenance of property and property ownership data. The reasons are:

- 1) Property registration in Paraguay is compulsory in order to establish, obtain or transfer rights of land ownership.
- 2) A property tax receipt, issued by the Real Property Tax Office, is required before any transaction, including mortgages, can be recorded in the Property Registry.
- 3) A property survey, carried out by a licensed surveyor and advertised in the press, is required before any transaction concerning a subdivision or mutation of a property is recorded in the Property Registry.
- 4) In cases of subdivisions or mutations, the approved survey plan must be presented to the tax office in order to obtain a property tax receipt for registration of the property deed.

The procedures being used to maintain the cadaster in Asunción are considered to be satisfactory. These same procedures will be expanded to the Departmental Cadastral Maintenance Offices.

b. Vehicles

Adequate costs have been included in the project to ensure the maintenance of the vehicles. Moreover, the field supervisors will be responsible for ensuring that daily first echelon maintenance is carried out, which should eliminate the majority of vehicle maintenance problems.

5. Basis of Cost Estimates

a. Vehicles, Equipment and Materials

Prices for dollar procurement were taken from available 1973 catalogs that listed items the same or similar to those to be purchased. Since all catalog prices are subject to change, normally upward, the price of each item was increased by ten percent. Shipping costs were taken into consideration. Prices for local procurement were based on inquiries and are average retail prices. (See Annex II, Exhibit 11).

b. Aerial Photography

The cost estimate for aerial photography is based on 1973 contract prices for similar photography in progress for the cadastral project in Honduras. (See Annex II, Exhibit 5).

c. Technical Assistance

The cost estimates for salaries are based on equivalent positions in DMA-IAGS, plus 29% for personal benefits. The per diem and international travel are based on actual cost. The housing allowance, and the charges for shipment of household goods and the automobile for the long term advisor are based on average Mission costs. (See Annex II, Exhibit 10).

d. Local Salaries and Per Diem

Cost estimates are based on established GOP rates for each position identified. (See Annex II, Exhibit 14).

e. Contingency

A contingency was included to provide sufficient margin to cover unforeseen expenses. (See Annex II, Exhibit 16).

B. Economic Evaluation

1. Paraguay's Tax Situation

There are four principal tax gathering offices in Paraguay; the Internal Tax Office (Impuestos Internos), the Income Tax Office (Impuesto

a la Renta), Customs (Aduanas) and Real Property Taxes (Impuesto Inmobiliario). Each office is headed by a Director who reports directly to the Minister of Finance. There is no Director General of Taxes.

The Internal Tax Office, with approximately 575 employees, is the largest single office. In 1972 it collected 54% of total revenues. It taxes a wide range of activities and entities. These include principally stamp taxes on commercial transactions, excise taxes on fuel oils and beverages, cattle transfer and slaughter taxes, and business and vehicle license taxes.

The second largest collection entity, the Income Tax Office, with 65 employees, also administers the National Sales Tax. In 1972 it collected 20.1% of total revenues. In addition to the income and sales tax it also administers a minor tax on capital. The income tax does not apply to income from personal services, but taxes, generally, business profits, rental income, interest and director's fees (the latter an exception to the personal income exemption). Income taxes account for about two-thirds of total collections by this office. There presently exists a suspended income tax law which would also tax income from personal services. We believe the suspended law could be revived if the authors could agree to exempt all personal service payments from the Central Government.

The Customs Office with about 475 employees, in 1972, collected 18.5% of total tax revenues. It administers all taxes on imports and exports. At present it is the only tax office not receiving advisory assistance from USAID.

The Real Property Tax Office with 167 employees collects taxes on real estate throughout the country. In 1972 it accounted for 7.4% of tax collections. The tax is levied against both improved and unimproved real property on an assessment basis fixed by law. Properties, however, must be identified for the tax to be levied and it is expected that the successful culmination of the proposed rural cadaster will result in a large increase in the number of rural properties added to the tax rolls. While total tax collections were growing by 43.3% in the last five years (1967-72), Real Property tax collections increased 69.2%. Much of the increase, especially in the delinquent accounts area, can be attributed to the more vigorous and effective administration of the present director, who took office in 1968. The Real Property Tax Office is expanding the existing Cadastral Department to undertake the Cadaster Survey.

Though there are still important voids in tax administration in Paraguay, it is probably at its most effective level in the history of the country. Changes of Directors in two of the four tax offices last year

brought considerable administrative improvements to both offices. Proposed vigorous audit and collection programs should add additional important revenues to the GOP treasury.

An important fault in the administrative structure is the lack of a centralized field collection function in the Real Property Tax Office. We recommend that the establishment of such a function, to complement the existing centralized office collection function, be made a condition precedent to disbursement of loan funds.

We also recommend that the GOP be strongly urged to conduct a livestock inventory along with the cadaster. This could be of immense importance to the Indirect Tax Office in the control of transfer and slaughter of animals, and in addition, could generate valuable information for other government entities.

## 2. The Role of the Property Tax in Paraguay

As noted, the Property Tax plays a small, but increasingly important, role in funding GOP revenue needs.

Some property tax revenue proceeds are returned to local municipalities to assist them in supporting budget requirements for both operating and capital expenditures.

Also, there is a proposal before the congress that up to twelve percent of property tax collections from rural areas be transferred to the Paraguayan Municipal Development Institute (IDM) to fund its operating expenses and provide capital for relending to rural municipalities for viable development projects. The IDM is a USAID-supported bank-type institution created to make low interest development loans to municipalities, and to provide training in municipal and tax administration to officials in all Paraguayan municipalities except the capital city. At present rural areas account for about fifty percent of all real property collections.

## 3. Analysis of Economic Benefits

Cost-benefit analysis could be applied to this project, but the correct analysis would have to go far beyond data on revenues by and costs of this project and into a comprehensive examination of the costs and benefits derived from taxation and government spending. Unfortunately, neither the theory nor techniques of such an analysis are sufficiently developed to make such a presentation here. Nevertheless, at a minimum, for the project to be considered economically feasible it must produce

benefits in excess of costs such that everyone in Paraguay could share in these benefits by a costless redistribution of the gains.

The benefits from this project are, however, not identical with tax revenues generated by the project; they are closer to the net increments to the Gross National Product of Paraguay resulting from increased expenditures of the GOP financed by the revenues generated by the project. If there is no net increment to GNP as a result of the additional spending less the costs of project, both discounted by some reasonable social discount rate, the project should not be undertaken. Thus, there is a larger question, which is the optimal level of governmental spending and the optimal composition of governmental expenditures. The level of governmental spending as a proportion of GNP and the composition of governmental expenditures appears to change (to increase) with the stage of development of a country, the absolute amount of its GNP, and the level of GNP per capita. Available evidence suggests that expenditures of the GOP as a proportion of GNP approximates that of other developing countries with similar per capita levels of GNP. Although an increase in the ratio of government expenditures to GNP cannot be taken as an unequivocal guide to the existence of a net increment to GNP resulting from an increase in governmental spending, generally the ratio of government spending to GNP increases as GNP per capita increases. Obviously, there are many pitfalls--in some countries one can find overblown rosters of public sector employees, high expenditures on bricks and mortar, a large share of government spending which is merely transfer payments, and simply wasteful expenditures. Where these defects predominate, the transfer of an additional small amount of private income to a government for its spending program would not produce any gain in GNP and projects for new taxes and improved tax administration would have to be based on elimination of bad taxes and reduction of government expenditures. In the case of Paraguay, none of defects noted above appear of such a degree as to argue convincingly in favor of a reduction of government spending.

Although no external agency is completely satisfied with the allocation of governmental expenditures in Paraguay, all external agencies have favored expansion of government expenditures in general and to specific activities. Inasmuch as the project aims to increase the transfer of private income, particularly of rural property owners, to the GOP it seems appropriate to note the use to which these additional tax revenues will probably be put. It has been argued that property taxes are a small percentage of total tax revenues and therefore that improved administration of property taxes is not going to produce a sizable increase in tax revenues. (This question will be examined further). On the other hand, it is also a fact that expenditures of the Ministry

of Agriculture averaged only 3.4 percent of total Central Government expenditures in the period 1967-1971. The Mission and other external agencies have pressed the GOP to increase its budgetary allocation to the Ministry of Agriculture in order to facilitate more rapid development of Paraguayan agriculture. The GOP's budgetary allocation to the Ministry of Agriculture, exclusive of external funding, was  $\text{Gs.}341$  million in 1973 and this allocation has recently been increased by  $\text{Gs.}56$  million. By 1980, the project will yield additional annual tax revenues of  $\text{Gs.}201$  million (exclusive of collection of back taxes) with existing tax rates and assessed values. While earmarking of tax revenues does not accord with sound budgetary policy, it is noteworthy that government expenditures which produce relatively high yields to private sector taxpayers can be financed precisely by the group of taxpayers who will pay more taxes as a result of the project.

The heavy investment for the Cadastral Program is required in the years 1974-1978 and exceeds expected increments from additional property tax revenues resulting from the program during those years. For the ten-year period 1974-1983, however, the revenue-cost ratio is 2.88; that is, each  $\text{Gs.}1.00$  expended on the program yields  $\text{Gs.}2.88$  in revenues. No allowance has been made in these calculations for increased revenues generated by increases in tax rates on property valuations; nor has any allowance been made for increases in costs of the program on maintenance costs beyond 1978. Reasonable assumptions of increased costs of the program would probably show an offset of increased costs by increased revenues resulting from the tax rate and valuation increases. Thus the data presented below are stated in 1973 guarani prices.

Discounting future costs and revenues by a social time preference reduces the revenue-cost ratio somewhat. For example, discounting costs and revenues for the period 1974-1983 to 1974 by six percent yields a ratio of 2.20, by eight percent yields a ratio of 2.02, and by ten percent yields a ratio of 1.86. Obviously a cut-off date ending with 1983 is completely arbitrary. If the cadastral roll is maintained, revenues would exceed costs for many years into the future. Exclusive of payments of back taxes the revenue flow from the project stabilizes at  $\text{Gs.}200.9$  million in 1980. <sup>annual</sup>

Revenue - Cost Analysis

	<u>Increment to Property Tax Receipts</u> (Thousands of \$s.)	<u>Cost of Cadastral Program</u> (Thousands of \$s.)
1974		127,377.9
1975	9,013	85,369.3
1976	40,208	86,627.4
1977	84,533	80,593.6
1978	103,850	61,031.8
1979	157,786	
1980	224,998	
1981	221,555	
1982	215,849	
1983	<u>213,272</u>	
	1,271,064	<u>441,000</u>

Property Tax Revenues, 1974-83 = 2.88  
Cadastral Program Costs, 1974-83

Source: Property Tax Revenues, See Exhibit 20, p.17  
 Cost of Cadastral Program, See Exhibit 16, p.2

For future years the main questions are the cost of maintenance and cost of tax collection. Thus, in fact there is no cut-off date or scrap value for the cadastral program as long as tax rates and valuations are adjusted to keep up with increases in costs caused by increases in wages and supplies (due to increases in prices).

C. Financial Soundness

1. Funding Requirements and Sources

The funding requirements are identified in various Exhibits of Annex II. The sources of financing of these funding requirements are shown in Annex II, Exhibits 15 and 16. They are summarized in Tables IV and V below.

**TABLE V**  
**TOTAL PROJECT FUNDS**  
(In U.S. \$ and \$/E)

	<u>\$</u>	<u>% \$</u>	<u>\$/E</u>	<u>% \$/E</u>	<u>TOTAL</u>	<u>%</u>
<b>1. AID</b>						
a. Aerial Photography	160,000	17.8	-	-	160,000	4.6
b. Vehicles	170,000	18.9	-	-	170,000	4.9
c. Technical Assistance	150,000	16.7	-	-	150,000	4.3
d. Equipment	261,200	29.1	32,810	1.3	294,010	8.5
e. Materials	80,000	8.8	41,515	1.6	121,515	3.4
f. Operational Costs	-	-	1,285,990	49.5	1,285,990	36.8
g. Registry Index	-	-	39,685	1.5	39,685	1.1
h. Contingency	78,800	8.7	-	-	78,800	2.2
<b>TOTAL AID</b>	<b>900,000</b>	<b>(100.0)</b>	<b>(1,400,000)</b>	<b>(53.9)</b>	<b>(2,300,000)</b>	<b>(65.8)</b>
<b>2. GOP</b>						
a. Personnel Salaries	-	-	894,854	34.4	894,854	25.7
b. Departmental Offices	-	-	133,921	5.2	133,921	3.8
c. Social Security	-	-	71,030	2.7	71,030	2.0
d. Vehicle Insurance	-	-	18,667	0.7	18,667	0.5
e. Facilities	-	-	15,873	0.6	15,873	0.4
f. Contingency	-	-	65,655	2.5	65,655	1.8
<b>TOTAL GOP</b>	<b>-</b>	<b>-</b>	<b>(1,200,000)</b>	<b>(46.1)</b>	<b>(1,200,000)</b>	<b>(34.2)</b>
<b>3. PROJECT TOTAL</b>	<b>900,000</b>	<b>100.0</b>	<b>2,600,000</b>	<b>100.0</b>	<b>3,500,000</b>	<b>100.0</b>

**TABLE VI**  
**DISTRIBUTION BY YEAR**  
(In U.S. \$ and \$/E x 1,000)

<u>SOURCE</u>		<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>TOTAL</u>
1. AID	\$	692	82	77	27	22	900
	%	(77)	(9)	(9)	(3)	(2)	(100)
	\$/E	184	337	339	326	214	1,400
	%	(14)	(24)	(24)	(23)	(15)	(100)
TOTAL AID		876	419	416	353	236	2,300
		%	(38)	(18)	(18)	(15)	(100)
2. GOP	\$/E	135	258	272	286	249	1,200
	%	(11)	(22)	(23)	(24)	(20)	(100)
3. TOTAL	\$ + \$/E	1,011	677	688	639	485	3,500
	%	(29)	(19)	(20)	(18)	(14)	(100)
4. TOTAL	\$/E	319	595	611	612	463	2,600
	%	(12)	(23)	(24)	(24)	(17)	(100)

## 2. Alternate Sources of Financing

The Inter-American Development Bank (IDB) and the World Bank (IBRD) have informally expressed "no interest" in financing the proposed project. The authorization of this CAP will be contingent upon receipt of a written confirmation of their "no interest".

## 3. Local Cost Financing

AID loan funds will be used to finance the equivalent of \$1,400,000 (53.8%) of the local-cost financing of the project. Basically, loan funds will be used to finance all local currency costs except base salaries of national project personnel, social security benefits, vehicle insurance and modification of facilities required for project use. The loan financing of local costs includes the following:

- a. Overtime pay, at base salary rates, for national project personnel working over thirty hours per week, which is the basic work week and is being financed by GOP funds.

- b. Per diem for national project personnel carrying out the field operations.
- c. Vehicle operation expenses, including gas and oil.
- d. Vehicle maintenance expenses.
- e. Office furniture.
- f. Materials and supplies, which includes the printing of forms.
- g. Contract with the Property Registry employees for making the index of the registered property deeds.

#### 4. Prospects of Loan Repayment

For the years 1970-1972 the Central Bank of Paraguay data indicate ratios of debt service to commodity exports of 25%, 26% and 21%. In comparison with many developing countries Paraguay's debt service ratio appears favorable. Apart from severe foreign exchange crises, which are obviously related to total balance of payments performance, the Borrower should have no problem obtaining the foreign exchange required to repay the loan.

To our knowledge the Borrower's debts are being paid on a timely basis and such problems that have occurred from time to time resulted from the cash flow position of the institution repaying the loan. Since the Ministry of Finance will have direct responsibility for repaying this loan, it is expected that loan repayments will be made in a timely manner.

#### 5. Financial Conclusions

Based on the foregoing analysis, the Mission concludes:

- a. The loan supported program is financially sound.
- b. There are no appropriate alternative sources of financing.
- c. The GOP's contribution will be delivered in the amounts and at the times consistent with the needs of the program.
- d. The prospect for loan repayment is satisfactory.

SECTION III - LOAN ADMINISTRATIONA. Project Execution1. Implementation Plan

The initiation of project activities, shown in Annex II, Exhibit 3, assumes prompt GOP action in reviewing, negotiating and signing the Loan Agreement within two months following loan authorization. The basic implementation letter will be submitted at the time of signing the loan.

Upon loan signature, the Project Director, the Chief of the Administration Section and other key supervisory personnel, will initiate action to carry out the preparation phase (Phase I) of the project, including (i) the procurement of materials and employment of personnel required to carry out the pre-cadastral activities for the First Priority Zone (Phase II) and (ii) contracting the services of the Field Operations Advisor from RDO-OAS. Concurrently the USAID Mission will obtain the TDY services of the cadastral program specialist from DMA-IAGS, who will assist the Real Property Tax Office in completing the detailed work plan that was initiated during the intensive review. Upon completion of the detailed work plan, Phase II activities, including the procurement of vehicles, equipment materials, and aerial photography, will be initiated. (See Annex II, Exhibit 3).

2. Primary Responsibility for Action

The Director of the Real Property Tax Office will have the overall responsibility for executing this project. He will appoint a Project Director, who will be responsible for the administration of all project activities and funds. The Project Director will also supervise the Cadastral Department, which will be (See Annex II, Exhibit 17) established for administering all project finances and needs, including the procurement of: (i) local personnel to carry out project activities; (ii) technical assistance from RDO-OAS and DMA-IAGS (which have local offices in Asunción); (iii) vehicles, equipment, materials and supplies; and (iv) aerial photography (DMA-IAGS will provide examples of standard contracts for aerial mapping photography).

The primary responsibility for the production of the base photogrammetric manuscripts to be used for drafting the rural cadastral plans will be assigned to the Director of the Military Geographic Institute (IGM). (See Annex II, Exhibit 6).

### 3. USAID Monitoring Responsibilities

During the early phase of the project, it will be necessary that both the Public Administration and Capital Development Offices of USAID/P maintain close liaison with the GOP project management. However, due to the complexity of planning and executing the project, the less than satisfactory results obtained from similar projects in Latin America, and the necessity for maintaining almost day-to-day surveillance, the Mission recommends that an advisor, highly skilled in all phases of a cadastral survey, be contracted, preferably by USAID, to advise and monitor the project for the first two years of operation. He would complement the assistance of the technical advisor for field operations, and other short-term technical advisors who would be financed by either loan funds or by other international agencies. The present personnel of the USAID/P staff cannot render the day-to-day supervision required to ensure an optimum output from the project. Our feeling is that the Cadastral Program Specialist from DMA-IAGS, who developed the information for the IRR and this CAP, would be an excellent choice for this demanding assignment.

### 4. Technical Assistance

The technical assistance inputs to the project are identified by the project flow diagram in Annex II, Exhibit 3. A description of the technical assistance, and cost estimates, are shown in Annex II, Exhibit 10.

The technical assistance for the project includes the following:

1. Field Operations Advisor - 30 months
2. Photo Lab Specialist - 3 months
3. Property Delineation Specialist - 3 months
4. Cartographer - 3 months
5. Data Systems Specialist - 3 months

This technical assistance will probably be obtained from RDO-OAS and DMA-IAGS who have bilingual personnel highly qualified in these specialized technical fields.

In addition to the loan funded technical assistance, DMA-IAGS will provide in-country technical assistance to IGM for the production of the base topographic manuscripts (for the rural cadastral plans) as part of the basic mapping program. (See Annex II, Exhibit 6). Also, the present AID-IRS Tax Advisor Team will assist in setting up the property tax records and in correlating the tax collection activities.

As previously mentioned, the Mission proposes to obtain the services of a project advisor/monitor during the first two years of the project. He will render day-to-day assistance to the Project Director and complement the services of the long term advisor for field operations and of the other short term technical advisors.

## B. Implementation Procedures

### 1. Target Dates

- a. AID/W authorization by December 14, 1973
- b. Loan signed by February 15, 1974
- c. Project Director assigned March 1, 1974
- d. Key Staff mobilized March 11, 1974
- e. Procurement Administrator assigned March 18, 1974
- f. Conditions Precedent to Initial Disbursement met April 19, 1974
- g. Field Operations Advisor mobilized May 1, 1974
- h. Project Monitor arrives (not loan financed) May 1, 1974
- i. Project Preparation Activities initiated May 20, 1974
- j. Contract signed for short term Technical Assistance June 1, 1974
- k. Contract for Aerial Photography signed June 15, 1974
- l. Short term Technical Assistance initiated July 15, 1974
- m. Aerial Photography completed September 15, 1974
- n. Field Operations initiated October 1, 1974
- o. Mapping Operations initiated December 1, 1974
- p. Preparation of Tax Records initiated January 2, 1975
- q. Cadaster Data Processing initiated February 1, 1975
- r. Cadaster Billing System initiated March 1, 1975
- s. First Cadaster originated Department Level Tax Collection Office established March 15, 1975
- t. Short term Technical Assistance completed February 15, 1976
- u. Project Monitor terminated June 30, 1976
- v. Field Operations Advisor terminated October 31, 1976
- w. Phase Down of Project Operations commences September 30, 1978
- x. Terminal Disbursement December 31, 1978

### 2. Disbursement and Procurement Procedures

Disbursement of funds for technical assistance will be made directly by AID/W upon presentation of the customary documentation for PASA's. Disbursement of loan funds for dollar costs of services and for the direct purchase of imported equipment, materials and supplies will be handled through Letter of Commitment procedures. Disbursement of loan funds for local currency costs will be made by the Mission through the direct reimbursement procedures. The Director of the Real Property Tax Office has agreed to employ a qualified procurement administrator. To

enable his office to efficiently process the many English language procurement documents related to this project, either the procurement administrator must be fluent in both English and Spanish, or a permanent employee fluent in both languages must be a member of his staff. This, plus some assistance from USAID/Paraguay, should ensure the timely solution of any procurement related problem that might arise.

**C. Conditions and Covenants**

In addition to the standard conditions and covenants, the project committee recommends that the loan agreement contain the following conditions and covenants to the extent they are not fulfilled prior to the signing of the loan agreement.

1. Prior to issuance of first commitment document for any loan funds, the Real Property Tax Office shall present to AID evidence, in form and substance satisfactory to AID, that a person acceptable to AID has been assigned as Project Director.
2. Prior to issuance of first commitment document for equipment, commodities and aerial photography, the Real Property Tax Office shall present to AID evidence, in form and substance satisfactory to AID, that a person acceptable to AID, has been assigned as Procurement Administrator. The procurement group must also have a bilingual capacity.
3. Prior to issuance of first commitment document for equipment and/or commodities, the Real Property Tax Office shall present to AID a contract, in form and substance satisfactory to AID, with the Regional Development Office of OAS (RDO-OAS) and/or with the Defense Mapping Agency Inter-American Geodetic Survey or another acceptable, qualified entity, for the technical assistance of a long-term field operations advisor.
4. Borrower shall covenant to present, in form and substance satisfactory to AID, an approved budget plan for implementing the cadastral project activities identified in the loan document for the five-year project period, with local currency amounts equal to, or in excess of, the amounts indicated in the loan document. Disbursements of loan funds during each year of the 5-year project period shall be contingent upon (a) inclusion in the National Budget for that year of local currency amounts to be made available to the Borrower for implementing the Cadastral project activities equal to or in excess of the amounts indicated in the loan document; (b) release to the Borrower of all funds budgeted for the prior years.

5. The Real Property Tax Office shall covenant to present, in form and substance satisfactory to AID, evidence that sufficient funds will be budgeted each year for the maintenance of the cadastral inventory and for the continued support of the Departmental Property Tax Collection Offices, as indicated in the loan document, following the termination of the Project.
6. Prior to the first disbursement or issuance of the first commitment document, the Real Property Tax Office shall present evidence to AID, in form and substance satisfactory to AID, that it has established a viable field collection function operating in conjunction with the present office collection function.
7. The Borrower shall covenant to take all necessary actions to maximize the use of the information generated under the cadastral survey which has relevance for planning and investment decisions in the agricultural and education sectors. Annually Borrower and AID shall jointly review the use being made of the information which has become available.
8. Borrower shall covenant to continue to take, throughout the life of the project, appropriate action in furtherance of the modernization and rationalization of the overall tax system of Paraguay.
9. The Borrower shall covenant to make, over the life of the loan, appropriate modifications in the property tax valuation base and/or rate structure in order to introduce greater equity into the property tax system. ||

SECTION IV - ISSUESA. IRR Issues

The Mission's comments on issues specifically pointed out in STATE 099080 IRR approval are noted below:

1. "The rationale for the loan should be presented in the context of alternative assistance projects which would help increase GOP revenue collection. The CAP should outline these alternatives and explain why loan funds directed toward the proposed project rather than the alternative will result in a higher investment yield."

Regarding alternative assistance projects to which this loan and GOP counterpart could be applied to help increase revenue collections, there has been no expression of interest by the GOP.

USAID is presently supporting an IRS/PASA team which renders advisory assistance to the Internal Income, and Real Property Tax Offices. While USAID/P feels that strengthening the advisory team and thereby presumably improving tax administration techniques would be advisable, to date the GOP has requested no additional USAID input in this area. Likewise, there has been no request for assistance to the Customs Activity, which until recent months was suffering a three year decline in revenues.

On the other hand, the GOP has expressed a strong interest in this project, as evidenced by the GOP/OAS supported two-year pilot cadaster, that preceded, and provided the basic justification for the GOP's request for this loan. The incorporation into tax rolls of the numerous properties in the rural zone, along with improved billing procedures and decentralized collection offices, will produce substantial new revenues from the Cadaster area. The successful completion of this project will fill a substantial void in ~~existent~~ property tax taxpayer files.

2. "A close scrutiny of the dollar component of the project is recommended. For example, it is expected that the vehicle requirements will be discussed in terms of (a) whether motor bikes might equally serve the purpose, particularly in the urban areas, and (b) the number of actual areas of simultaneous activity. A further procurement proposal which should be examined thoroughly concerns aerial photography. CAP should fully justify the decision to utilize commercial firms in lieu of reliance, in whole or in part, on the capabilities available under the basic mapping program of the Ministry of Defense."

The dollar procurement of equipment and materials required for each separate activity have been identified. These are shown in Annex II, Exhibit 11.

Vehicle requirements which include motorbikes are shown in Annex II, Exhibit 12.

The project activities are shown in Annex II, Exhibit 3, and the basis for the project schedule is shown in Annex II, Exhibit 4. (All activities depend on the production of the field operation).

Paraguay does not have an in-country capability for taking aerial photography. The cost of establishing this capability is treated in Annex II, Exhibit 5.

3. "Conversely, a thorough analysis also should be made of the proposed local currency financing, particularly in justification of the financing of per diem."

Local currency requirements are identified in Annex II, Exhibits 11, 13, 14, 15, 16 and 21. The justification for the loan financing of 53% of local costs is based on the following facts:

a. The GOP contribution to the project is \$1.2 million, or 34% of the total project cost. These are additional GOP funds and do not include on-going budgeted salaries or other services in kind.

b. Local currency costs constitute 74% of the total project costs.

c. Personnel costs, that is, base salary, overtime pay and field per diem constitute 60% of total project costs. (See Annex II, Exhibit 14).

4. "The intensive review should consider the feasibility of the GOP adopting some national reference system for land boundary identification. At a minimum, certain meridian of longitude might be established in urban areas to which the cadasters could be referenced and later tied into a national land reference system. Steps in this direction might be built into the loan through GOP covenants. SER/ENGR will shortly forward several technical considerations for possible discussions in the CAP."

The identification and definition of property boundaries can be based on two concepts - a general boundary concept and a fixed boundary concept. The project is undertaking a graphical cadaster based on general boundaries. However, since Paraguay has already accomplished a considerable amount of land surveying (on a metes and bounds system) provisions have been made to include a plane coordinate grid system, based on a conformal projection, in the drafting of the rural cadastral plans. Thus, the cadastral plans will be compatible with future land surveys that are tied into a national control network. (See Annex II, Exhibits 6 and 7). Also, provisions have been made to make the urban cadastral work compatible with

future urban survey and mapping systems. (See Annex II, Exhibits 8 and 9). In addition, initial steps are being taken to combine all land surveying and cadastral activities and to improve the existing system of deed registration. (See Annex II, Exhibit 21).

B. Mission Issues

1. The one major issue raised during the intensive review was whether AID should make the loan without a condition precedent that would require the Real Property Tax Office to establish a field collection function to complement the present office collection procedures.

The efficient implementation of a functional property tax system in Paraguay requires that all taxable properties be identified and placed on the tax rolls; that property ownership be determined for issuing tax bills; that a proper maintenance function keep the tax records up-to-date; that properties be evaluated using technically correct methods as the basis for equitable tax assessment; and that functional collection mechanisms be implemented in order to obtain the tax revenues created by the foregoing actions. The project anticipates a fulfillment of all of these essential elements except the valuation function, which is expected to be a corollary activity stemming from the project.

In view of the past history of enforcement of delinquent tax payments, however, the Mission feels that a more effective means is required to bring about a more functional collection mechanism. The opening of Tax Collection Offices in each department in order to decentralize the office collections of taxes is an important step that has already been initiated. But, in order to give more impetus to tax enforcement, a field collection function is necessary, particularly in the cases of chronic tax delinquency. Therefore, the Mission proposes as a condition precedent to the initial disbursement the establishment of a field collection function in the Real Property Tax Office. A field collection function contemplates the assigning of "collectors", who would visit taxpayers in their homes and places of business to solicit payment of delinquent taxes. The incountry IRS-AID Tax Advisory Team will provide the guidelines for ensuring that it is accomplished.

December 20, 1973

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AID-DLC/P-2016  
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**CERTIFICATION PURSUANT TO SECTION 611(e) OF THE FOREIGN  
ASSISTANCE ACT OF 1961, AS AMENDED**

I, Oliver L. Sause, the principal officer of the Agency for International Development in Paraguay, having taken into account, among other things, the maintenance and utilization of projects in Paraguay previously financed or assisted by the United States, do hereby certify that in my judgement Paraguay has both the financial capability and the human resource capability to utilize effectively the proposed Cadastral Survey and Property Tax Improvement Loan.

This judgment is based primarily on the facts developed in the Capital Assistance Paper for the proposed loan of \$2.3 million which discusses in detail the capabilities of the Government of Paraguay and finds it in possession of adequate financial and human resource capability to effectively utilize and maintain the project.



Oliver L. Sause, Director

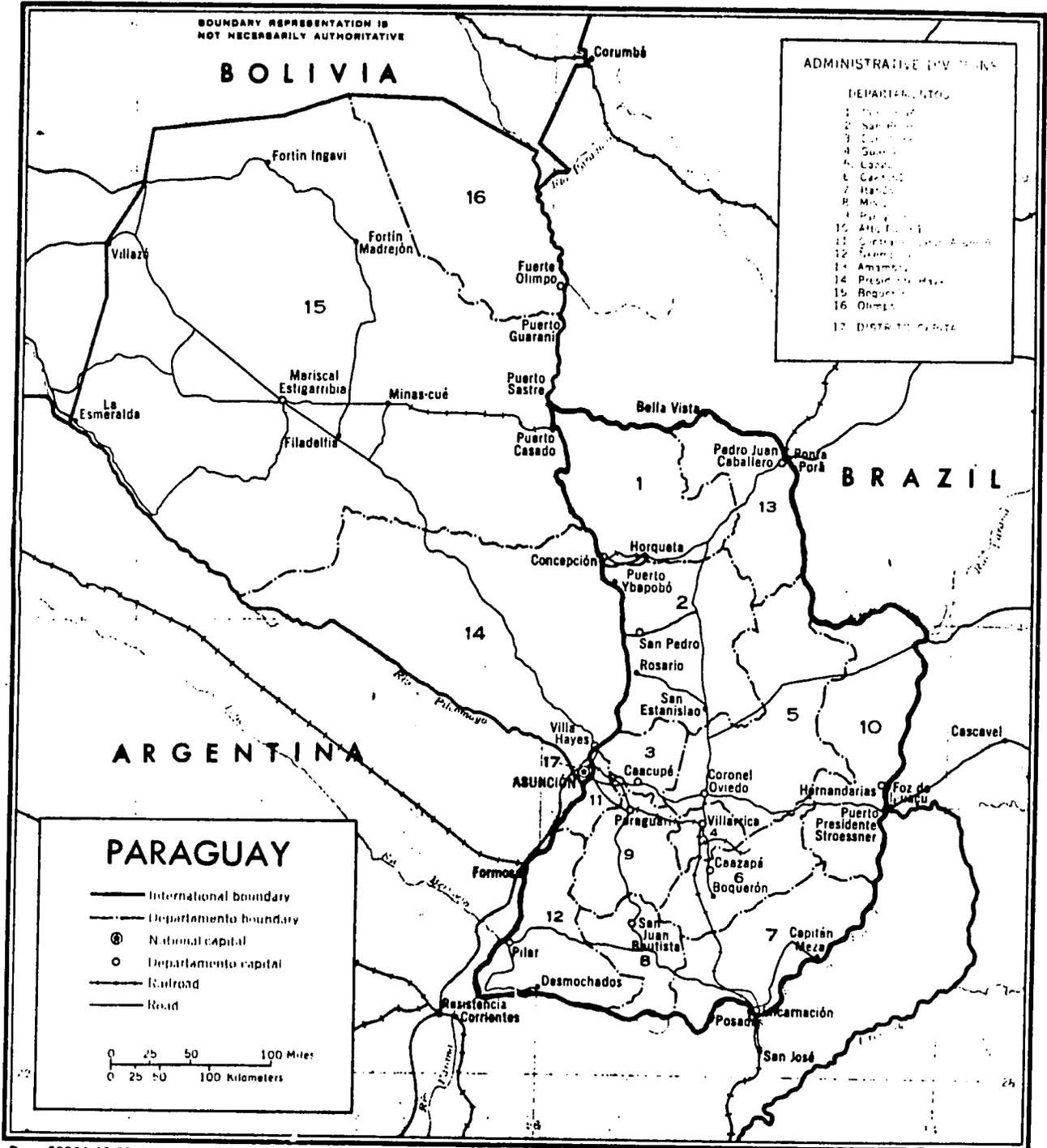
October 18, 1973

Date

December 20 ,973

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ATD-DLC/P-2016  
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Exhibit 1, Page 1 of 2

PROJECT AREA  
159,625 KM<sup>2</sup>



PRIORITY ZONES



### RURAL PILOT PROJECT

The principal objective of the rural pilot project was to determine the status of private land holdings in a typical, but well developed district, in order to compare the results with the existing tax rolls for that district. The District of Carmen de Barana, Department of Itapúa, was selected as the site for the pilot project. It encompasses 300 square kilometers and has a rural population of 3,809 people.

The results showed a surprisingly high rate of undocumented and unregistered properties, which constituted 42.7% of the total number of private land holdings and 47.4% of the total land area of the district. Moreover, the average farm size of 35.5 hectares for this category was the largest in the district. The average farm size of all private land holdings is 27.8 hectares.

The total area of these nonregistered and non-taxpaying properties is 14,220 hectares, which, at a flat rate of  $\text{¢} 1,500$  per hectare, have a total value of  $\text{¢} 21,330,000$  (\$169,285). At a tax rate of 10 mills (1%), this represents  $\text{¢} 213,000$  (\$1,693) in direct tax revenue.

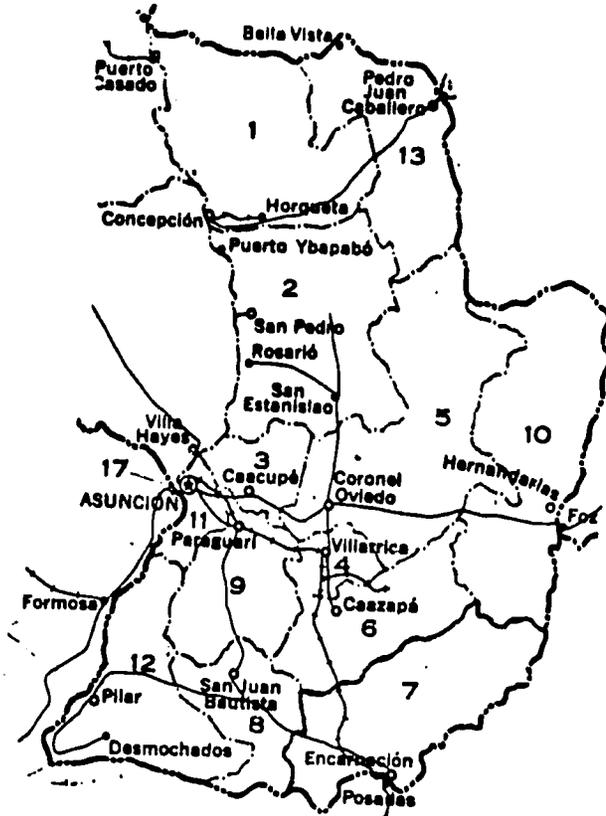
The pilot project was carried out by the Cadastral Department from August 1971 to January 1972, with technical assistance from the Regional Development Office of OAS. The RD-OAS office in Washington D.C. enlarged the existing 1:50,000 scale aerial mapping photography to 1:20,000 scale for the field demarcation of the farm boundaries. The cadastral plans were drafted on overlays of the field annotated photo enlargements. The results proved satisfactory in terms of relative accuracy due to the flat terrain of the area. However, the cadastral numbering system

are based on the 1:50,000 scale photographs, which is not entirely satisfactory as a permanent property indexing code number. Therefore, it is proposed to change the numbering system for the proposed full scale cadastral project. (See Annex II, Exhibit 9). Moreover, it is proposed to draft the rural cadastral plans on a fixed coordinate system, which will be more in keeping with future land surveying requirements. (See Annex II, Exhibit 7).

SUMMARY OF RESULTS

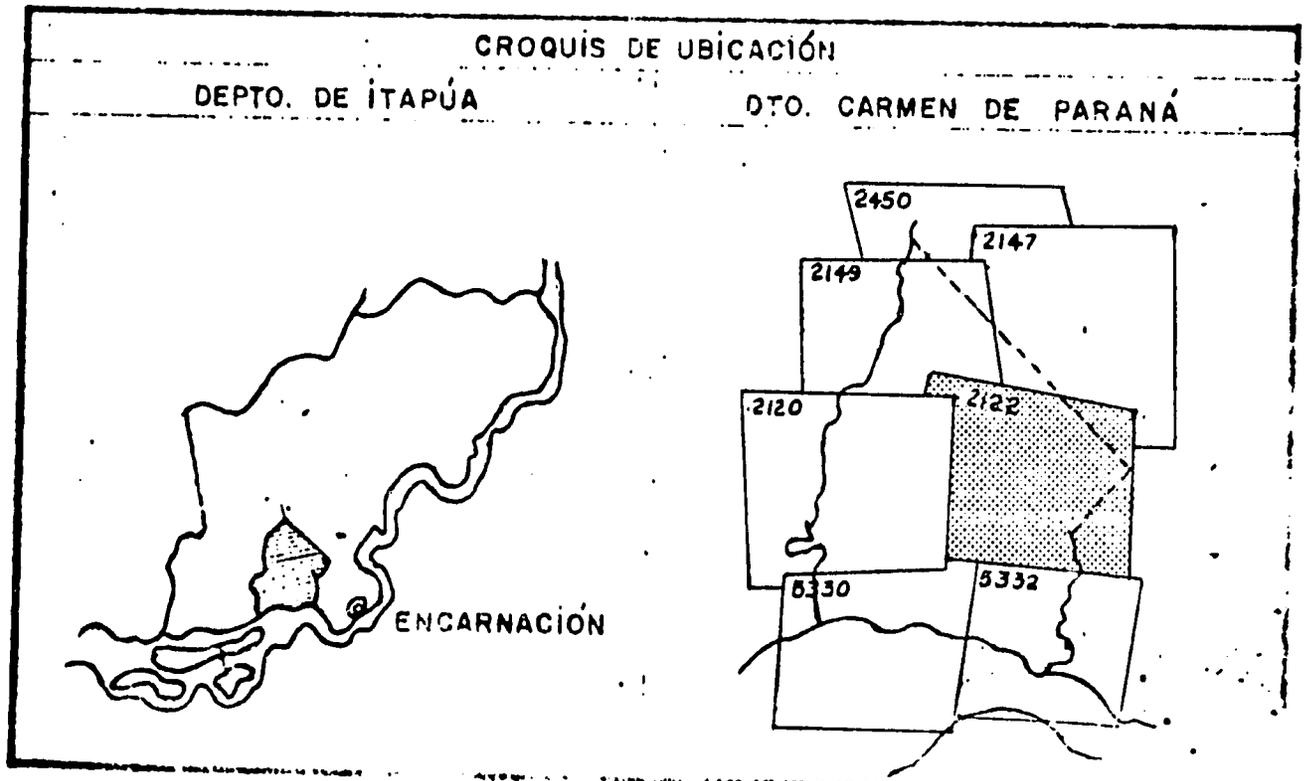
	NO.	% OF PRIVATE LANDS	% OF TOTAL LAND	AVERAGE HECTARES	TOTAL HECTARES	% OF PRIVATE LAND	% OF TOTAL LAND
1. Private Land							
a. Not registered Not on Tax Rolls	400	42.7	37.4	35.5	14,180.9	54.3	47.4
b. Not Registered On Tax Rolls	39	4.1	3.7	5.9	230.4	0.9	0.8
c. Registered Not on Tax Rolls	3	0.3	0.3	3.1	9.2	0.1	---
d. Registered On Tax Rolls	496	52.9	46.5	23.6	11,692.9	44.7	39.1
TOTAL	938	100.0	(87.9)	27.8	26,113.4	100.0	(87.3)
2. Public Land	130	---	12.1	29.3	3,809.5	---	12.7
TOTAL LAND	1,068	---	100.0	28.0	29,922.9	---	100.0
<hr/>							
REGISTERED	499	53.1	---	23.4	11,702.1	44.8	---
NOT REGISTERED	439	46.9	---	32.8	14,411.3	55.2	---
<hr/>							
ON TAX ROLLS	535	57.0	---	22.3	11,923.3	45.6	---
NOT ON TAX ROLLS	403	43.0	---	35.0	14,118.1	54.4	---

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 AVIATION II, Page 5 of 163  
 Exhibit 2, Page 3 of 7



LOCATION OF  
 RURAL PILOT PROJECT

300 SQ. KILOMETER  
 AREA



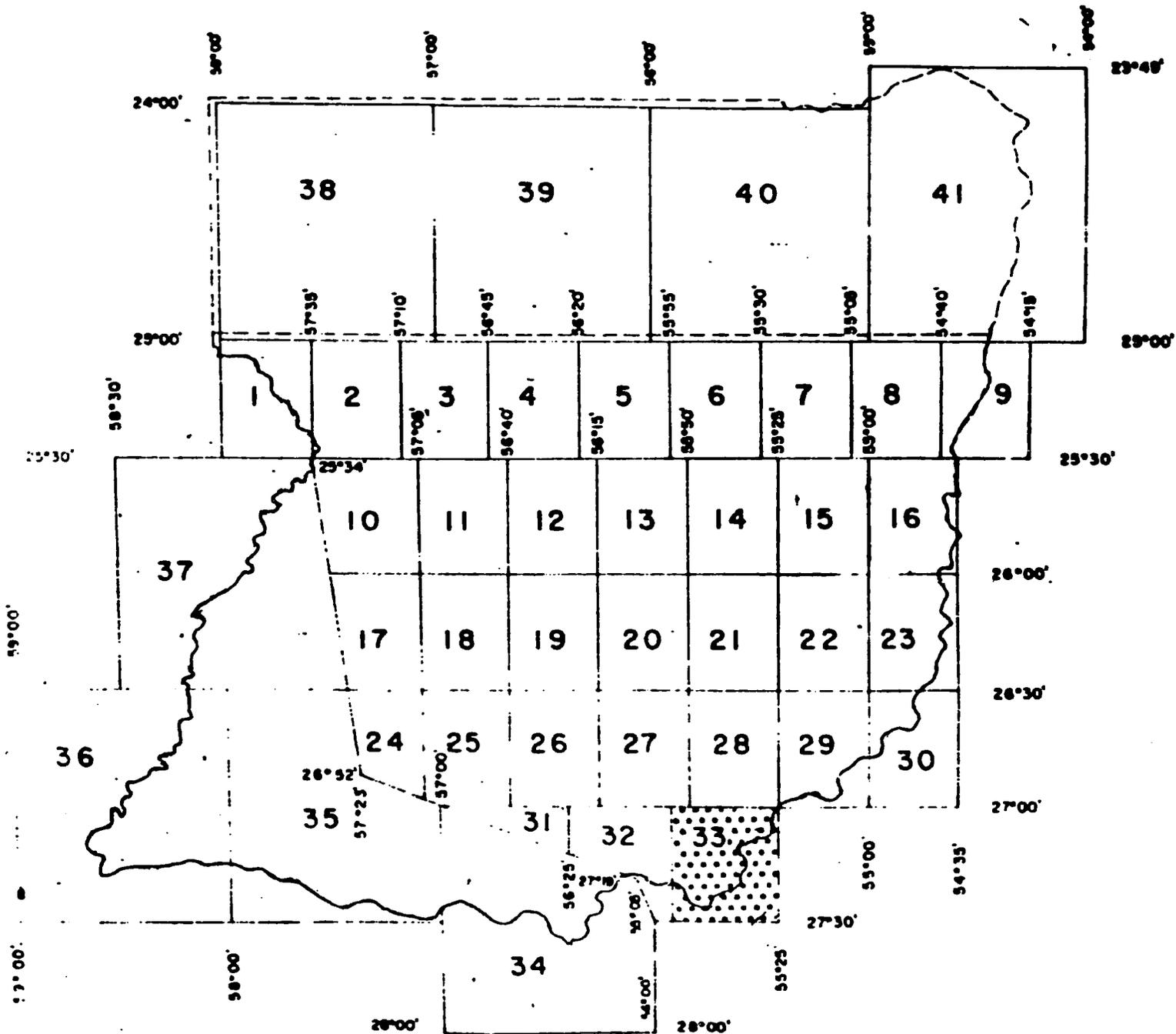
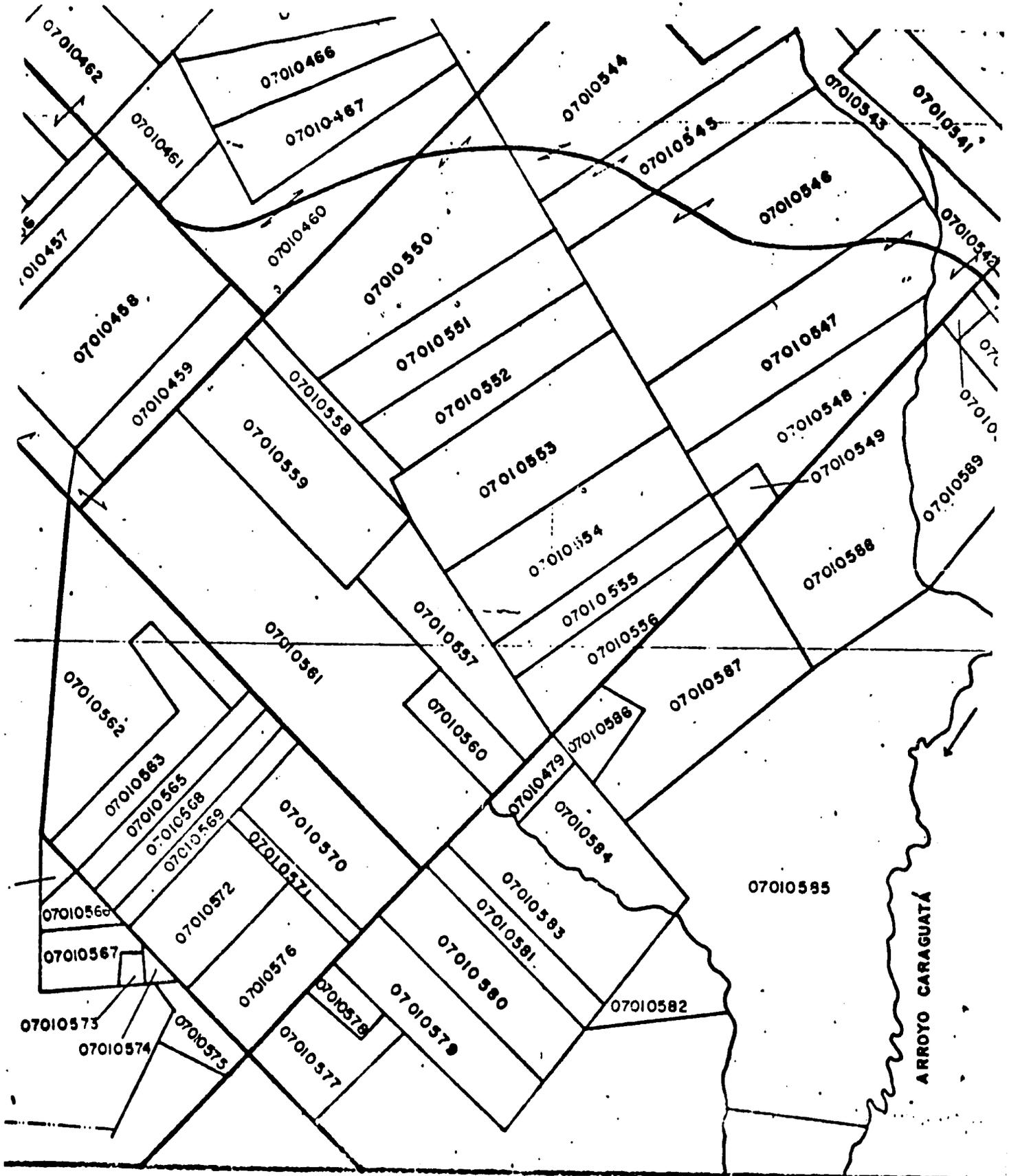


PHOTO MOSAICS AT 1:100,000 SCALE  
USED AS BASE INDEX

ANNOTATED PHOTOGRAPH  
(1:50,000 SCALE ENLARGED TO 1:20,000 SCALE)

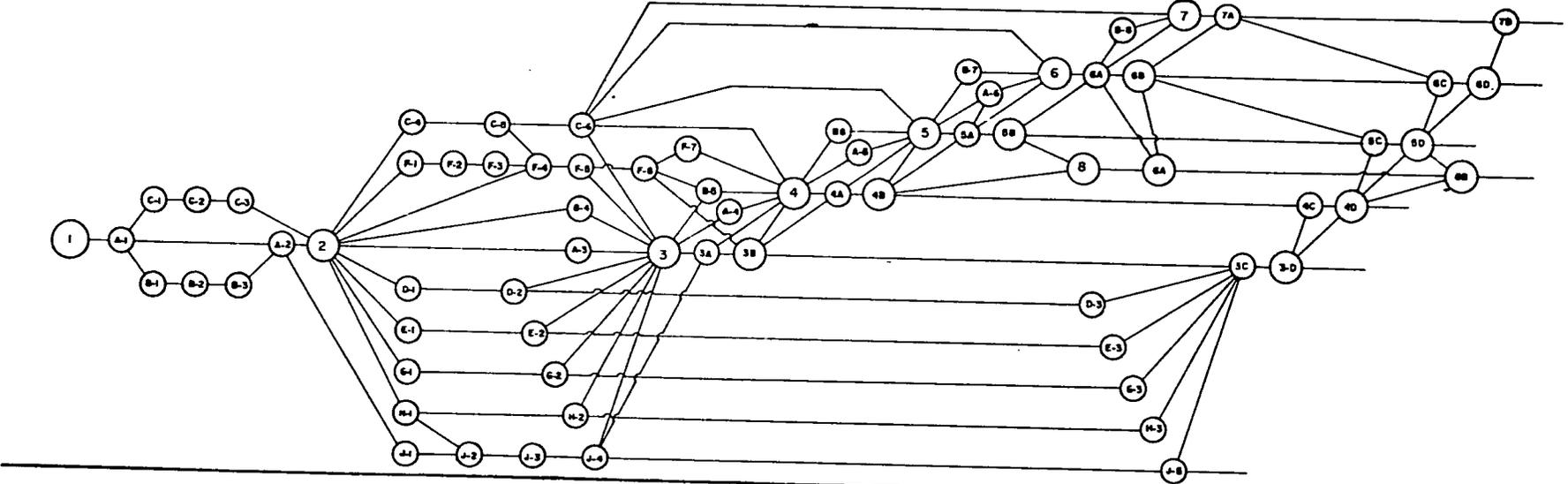




### PROJECT ACTIVITIES AND EVENTS

The project will be carried out in five stages or phases of operation:

- Phase I - Mobilization of key project personnel and project preparation (1 to 2).
- Phase II - Procurement of vehicles, equipment, materials and aerial photography; and preparation for field operation in first priority area (2 to 3).
- Phase III - Training of personnel in each activity component, and carrying out activities for pilot area (3 to 3A, 4 to 4A, 5 to 5A, 6 to 6A and 7 to 7A)
- Phase IV - Full scale project operation
- Phase V - Demobilization to on-going maintenance staff (3C to 3D, 4C to 4D, 5C to 5D and 6C to 6D).



<u>MAJOR EVENTS</u>	<u>TIME</u>
1	Start
2	Month 3
3	Month 6
4	Month 8
5	Month 9
6	Month 10
7	Month 11

MAJOR EVENTS

- 1 Loan Agreement Signed
- 2 Project preparations completed:
  - A. Key staff mobilized.
  - B. Project advisor mobilized.
  - C. Photographic and office materials available.
    - Operational plan completed.
    - Preparations for field work initiated.
- 3 Preparations for field work completed.
  - A. Field staff mobilized.
  - B. Technical assistance for aerial photography and field work mobilized.
  - C. Vehicles, field equipment, photographic equipment and supplies available.
  - D. Enlargements of existing aerial photography available for first priority area.
  - E. Copies of existing survey plans in first priority area available.
  - F. Photo aircraft mobilized and new photography of first priority area available.
  - G. Information on Agrarian Reform activities in first priority area available,
  - H. Copies of maps, plans and other data from SIENEPA available.
  - I. Index of current deeds in first priority area available.
    - Detailed work plan available,
    - Training of field personnel initiated.
- 3-B Field work in first priority area completed.
- 3-D Field work in project area completed.
  - Maintenance continues.

- 4 Drafting of cadastral maps initiated.
  - A. Cartographic staff mobilized.
  - B. Cartographic technical advisor mobilized.
  - C. Equipment and materials available.
  - F. Photographic products available.
    - Products from field work available.
    - Detailed work plan available.
    - Training of personnel initiated.
- 4-B Cadastral maps of first priority area completed.
- 4-D Cadastral maps of project area completed.
  - Maintenance continues.
- 5 Compilation of cadastral - Valuation files initiated
  - A. Office staff mobilized.
  - B. Technical advisor mobilized.
  - C. Office equipment and files available.
    - Cadastral maps available
    - Detailed work plan available
    - Training of personnel initiated.
- 5-B Compilation of cadastral - Valuation files completed for first priority area.
- 5-D Compilation of cadastral - valuation files of project area completed.
  - Maintenance continues.
- 6 Preparation of new tax billing system initiated.
  - A. ADP staff mobilized.
  - B. ADP technical advisor mobilized.
  - C. ADP equipment available.
    - Cadastral - Valuation data available.
    - Detailed work plan available.
- 6-B New tax billings system completed for first priority area.
- 6-D New Tax billing system completed for project area.
  - Maintenance continues.

- 7 Tax collection using new billing system initiated.
  - Continuous activity.
  
- 8 Cadastral files activated.
  
- 8-A Cadastral information provided to other user agencies.
  - Continuous activity.

**ACTIVITIES BY COMPONENTS**

- A PROJECT PERSONNEL**
- 1 - A1 Mobilize project director administrative staff and key supervisory staff.
- A1 - A2 Mobilize personnel required for Phase I activities.
- A2 - 2 Prepare detailed operational plan .
- 2 - A3 Interview and select field personnel.
- A3 - 3 Mobilize field personnel.
- 3 - A4 Interview and select personnel for drafting section.
- A4 - 4 Mobilize drafting section
- 4 - A5 Interview and select personnel required for compilation of cadastral - Valuation records.
- A5 - 5 Mobilize records section
- 5 - A6 Interview and select additional personnel required for ADP section.
- A6 - 6 Mobilize ADP section.
- VAR carry out activities.
- 3D - 4D Demobilize field personnel not required for cadastral maintenance
- 4D - 5D Demobilize draftsman not required for maintenance of cadastral plans.
- 5D - 6D Demobilize office personnel not required for maintenance of cadastral records.
- 6D - 7B Demobilize ADP personnel not required for maintenance of tax records.
- B TECHNICAL ASSISTANCE**
- A1 - B1 Request technical assistance from RDO-OAS and DMA-IAGS.
- B1 - B2 Receive budget plans.
- B2 - B3 Negotiate contract or Pasa.
- B3 - A2 Mobilize advisor.
- A2 - 2 Prepare detailed operational plan.
- 2 - F4 Mobilize photo lab specialist.
- F4 - F6 Inspect photography.

- F6 - F7 Release aircraft.
  - F7 - 4 Demobilize photo lab specialist.
  - 2 - B4 Mobilize property delineation advisor.
  - B4 - 3 Prepare detailed work plan for field activities.
  - 3 - 3A Train field personnel.
  - 3A - 3B Organize field operations and provide technical assistance during completion of first priority area.
  - 3B - 4 Demobilize property delineation advisor.
  - 3 - B5 Mobilize cartographic advisor.
  - B5 - 4 Prepare detailed work plan for compilation of cadastral plans.
  - 4 - 4A Train personnel.
  - 4A - 4B Organize cartographic activities and provide technical assistance during completion of first priority area.
  - 4B - 5 Demobilize cartographic advisor.
  - 4 - B6 Mobilize data systems specialist.
  - B6 - 5 Prepare detailed work plan for processing and filing cadastral records, valuation records, tax bills, cadastral maps, etc.
  - 5 - 5A Train personnel.
  - 5A - A6 Demobilize data systems specialist.
  - 5 - B7 Mobilize ADP specialist.
  - B7 - 6 Prepare detailed work plan for maintenance of ADP records and files.
  - 6 - 6A Train personnel.
  - 6A - 8A Demobilize ADP specialist.
  - VAR Completion of activities leading to event 8A.
  - 6B - 8A Demobilize chief project advisor,
- C PROCUREMENT
- A1 - C1 Request quotations on photographic, reproduction and office supplies required for Phase II operation.
  - C1 - C2 Receive quotations.
  - C2 - C3 Order supplies.
  - C3 - 2 Receive supplies.
  - 2 - C4 Request bids for vehicles, equipment, materials and supplies.

- C4 - C5 Receive bids.
- C5 - C6 Negotiate purchase.
- C6 - 3 Vehicles, field equipment and materials arrive.
- C6 - 4 Drafting equipment materials and supplies arrive.
- C6 - 5 Office equipment, files, materials and supplies arrive.
- C6 - 6 ADP equipment, materials and supplies arrive.
- C6 - 7 Equipment for collection and accounting section arrives.

#### F AERIAL PHOTOGRAPHIC PRODUCTS

- 2 - F1 Identify areas requiring new photography.
- F1 - F2 Request bids for photography.
- F2 - F3 Receive bids and award contract.
- F3 - F4 Mobilize aircraft, photo lab equipment and contract personnel.
- 2 - F4 Photo inspector available.
- F4 - F5 Obtain, process and deliver photography for first priority area.
- F5 - 3 Make enlargements of photography required to carry out training and field work in first priority area.
- F5 - F6 Obtain, process and deliver remaining photography.
- F6 - 3B Photo products available for field operations.
- F6 - Demobilize aircraft and aircraft personnel .
- F7 - 4 Demobilize photo inspection and photo lab technician.

#### D PHOTOGRAPHIC AND CARTOGRAPHIC PRODUCTS FROM IGM

- 2 - D1 Request photographic and cartographic products of first priority area from IGM.
- D1 - D2 IGM prepares products, in prints, enlargements manuscripts, etc.
- D2 - 3 IGM delivers products.
- D2 - 03 Continuous operation according to established priority.
- D3 - 3C Final products delivered.

- E Existing property survey plans and plans in the topographic section, Ministry of Public Works.
- 2 - E1 Request copies of plans in those districts of first priority area.
- E1 - E2 Make copies.
- E2 - 3 Deliver copies to property tax office.
- E2 - E3 Continuous operation according to established priority by districts.
- E3 - 3C Plans of last priority area delivered.
  
- G Existing information on lands under control of IBR (National Agrarian Agency)
- 2 - G1 Request copies of survey plans, records, etc of IBR colonies and lands in first priority area.
- G1 - G2 Make copies by district.
- G2 - 3 Deliver copies to property tax office.
- G2 - G3 Continuous operation according to established priority by districts.
- G3 - 3C Copies of last priority area delivered.
  
- H Existing plans and records in SENEPA
- 2 - H1 Separate plans and records by districts of first priority area.
- H1 - H2 Make listings of occupants by settlements and by district.
- H2 - 3 Deliver plans and listings to cadastral dept.
- H2 - H3 Continuous operation according to established priority by districts.
- H3 - 3C Plans and listings of last priority area delivered
  
- J Index of Current Deed Inscriptions in Property Registry.
- A2 - J1 Contract for index made with employees of registry office.
- J1 - J2 Abstract of current deed inscriptions made by department of first priority area.
- J2 - J3 Alphabetical index prepared using abstracts.
- J3 - J4 Alphabetical listings made for field verification of ownership.

- J4 - 3 Copies of index and listings delivered to Cadastral Dept.
- J4 - J5 Continuous operation according to established priority by departments
- J5 - C3 Index and listings completed of last department
- J5 - Continuous maintenance of index

FIELD OPERATIONS

- 2 - A3 Select field personnel
- A3 - 3 Mobilize field personnel
- 3 - 3A On-the-job training of field personnel
- 3A - 4 Initiate flow of field data to office staff
- 3A - 3B Carry out field operations of first priority area; Initiate field maintenance
- 3B - 4A Initiate flow of maintenance data
- 3B - 3C Carry out field and maintenance operations
- 3C - 3D Complete operations in last district
- 3D - 4C Deliver last field data to office staff
- 3D - 4D Demobilize, except personnel required for Cadastral maintenance
- 4D - Cadastral maintenance continues

PREPARATION OF CADASTRAL MAPS

- 3 - A4 Select draftsman and other personnel
- A4 - 4 Mobilize personnel
- 4 - 4A On-the-job training of draftsman etc.
- 4A - 5 Initiate flow of Cadastral maps
- 4A - 4B Complete Cadastral plans of first priority area and initiate maintenance of maps
- 4B - 5A Initiate flow of maintenance data
- 4B - 8 Establish map files
- 4B - 4C Continue compilation and maintenance of Cadastral maps
- 4C - 4D Complete maps of last district
- 4D - 5C Deliver last maps to office staff
- 4D - 5D Demobilize, except personnel required for maintenance of Cadastral maps
- 4D - 8B Last maps delivered to map files
- 5D - Maintenance of maps continues

PREPARATION OF CADASTRAL-VALUATION-TAX RECORDS

- 4 - A5 Select office personnel
- A5 - 5 Mobilize personnel
- 5 - 5A On-the-job training in revision and correction of tax records, tax receipts, etc.
- 5A - 6 Initiate flow of data to ADP Section

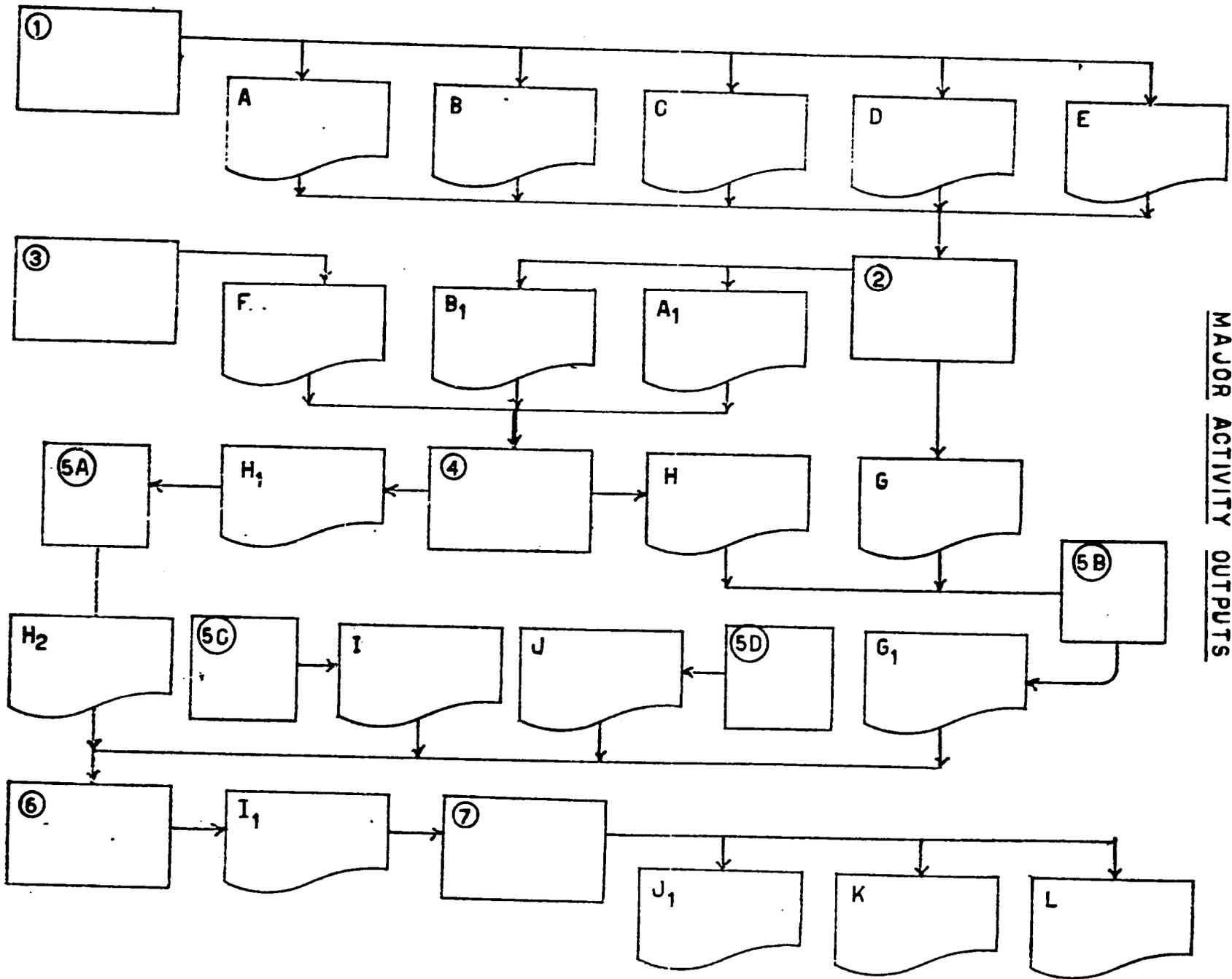
- 5A - 5B Complete revision and correction of Tax Records and Receipts and initiate maintenance of records in first priority area
- 5B - 6A Initiate flow of data changes (maintenance) to IBM Section
- 5B - 8 Establish Cadastral - Valuation record files
- 5B - 5C Continue revision and correction of tax records and receipts, and compilation and maintenance of Cadastral-Valuation records
- 5C - 5D Complete operation in last district
- 5D - 6C Deliver last data to IBM Section
- 5D - 6D Demobilize personnel except those required for records maintenance
- 5D - 8B Complete Cadastral-Valuation records files
- 5D - Maintenance continues

#### PREPARATION OF TAX RECEIPTS

- 5 - A6 Select additional personnel for ADP Section
- A6 - 6 Mobilize personnel
- 6 - 6A On-the-job training of personnel in ADP System for preparing and maintaining tax receipts and other accounting and statistical records
- 6A - 7 Initiate flow of receipts to tax collection dept.
- 6A - 6B Complete operation in first priority area and initiate maintenance of receipts etc.
- 6B - 7A Initiate flow of changes (maintenance) to tax collection dept.
- 6B - 5C Initiate flow of statistical data on property values
- 6B - 6C Continue preparation and maintenance of receipts, lists, data etc.
- 6C - 6D Complete operation for last district
- 6D - 7B Deliver last receipts to tax collection dept.
- 6D - Maintenance continues

#### TAX COLLECTION USING CADASTRAL DATA

- 6C - 7 New cash receipt - accounting machines available
- 7 - 7A Initiate tax collection - accounting procedures using Cadastral coding system
- 7A - 7B Continue operations and initiate collection of back taxes by districts in established order of priority
- 7 - Continuous operation



**MAJOR ACTIVITY OUTPUTS**

## MAJOR ACTIVITY OUTPUTS

**ACTIVITY 1: Preparation of Data and Materials for property delineation and field verification of ownership or possession.**

**OUTPUTS:** A - Aerial photographs and enlargements.  
B - Copies of property survey plans and sub-division plans.  
C - Data from SENEPA ie plans showing district boundaries, and location of houses, names of occupants, etc.  
D - Data from IBR ie Survey Plans, names of previous owners of agrarian reform lands, etc.  
E - Index of deed registers by Departments and Districts.

**ACTIVITY 2: Property delineation and field verification of ownership or possession.**

**OUTPUTS:** A<sub>1</sub> - Annotated aerial photographs and photo enlargements showing property boundaries and provisional numbers for each property.  
B<sub>1</sub> - Existing survey plans identified with provisional number.  
C<sub>1</sub> - Cadastral record of each land holding, identified by provisional number.

**ACTIVITY 3: Preparation of photogrammetric manuscripts at 1:20,000 scale to be used as map base for cadastral plans.**

**OUTPUT:** F - Film positive of manuscripts.

**ACTIVITY 4: Compilation and drafting cadastral plans, calculation of areas of each land holding; assigning cadastral number to each land holding.**

**OUTPUTS:** H - Original cadastral plans on stable base material.  
H<sub>1</sub> - Copies of cadastral plans.

**ACTIVITY 5A:** Preparation of cadastral plans to show 25km zones along existing roads in identifying properties subject to road tax according to category of road.

**OUTPUT: G<sub>1</sub>** - Typed final cadastral records. ie one for each land holding.

**ACTIVITY 5C:** Separation of existing tax record - Valuation cards alphabetically by districts.

**OUTPUT: I** - Existing tax record - Valuation cards arranged by alphabetically by districts, divided into urban and rural properties.

**ACTIVITY 5D:** Separation of existing tax receipts (bills) alphabetically by districts.

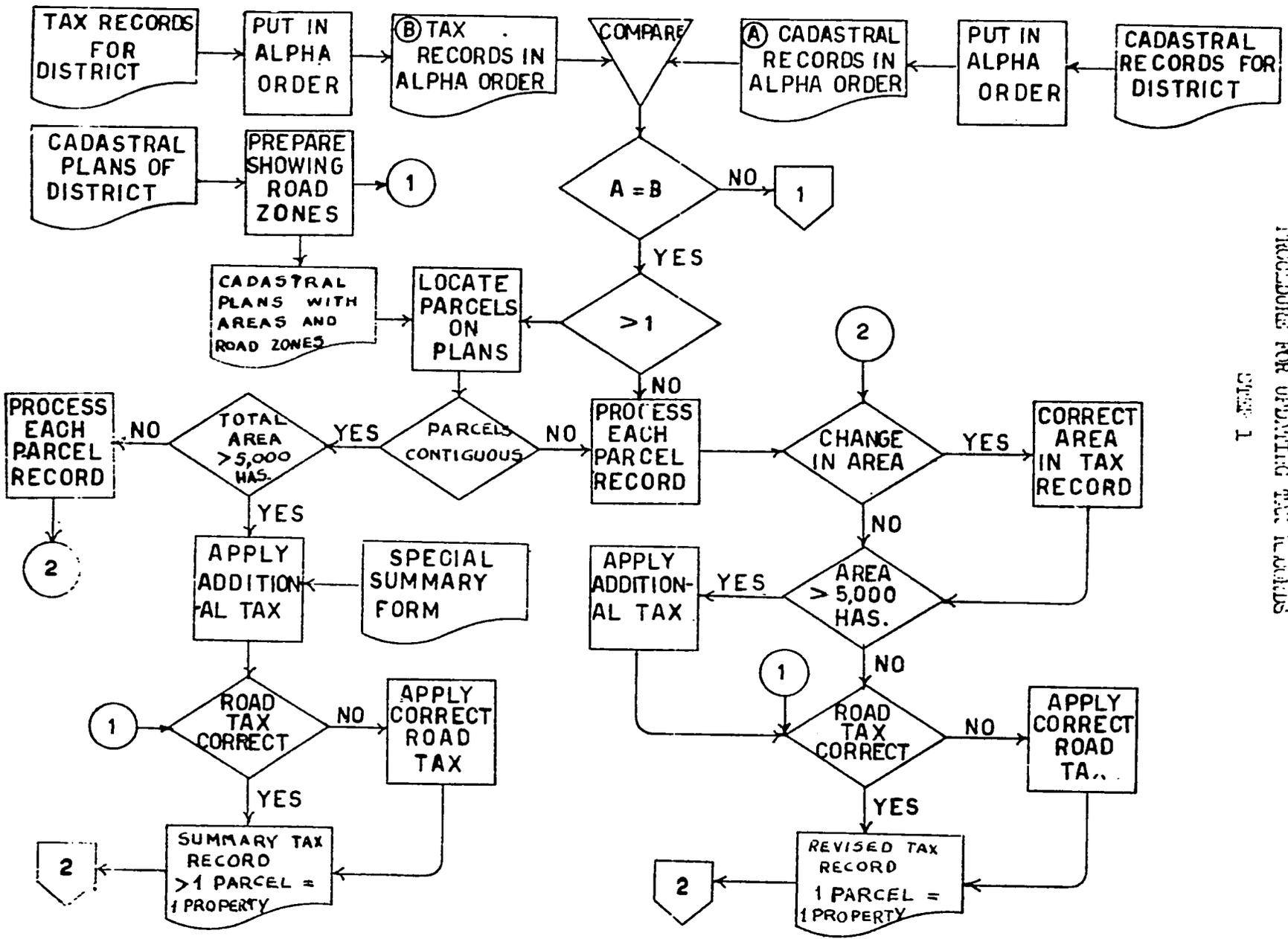
**OUTPUT: J** - Current tax receipts and unpaid tax receipts of prior years arranged in alphabetical order by districts.

**ACTIVITY 6:** Comparison of existing tax records and bills with cadastral records and plans in order to prepare a cadastral valuation record of each land holding, with supplemental sheet to show status of payment and tax due by year for adjusted values. Also codes to show properties exempt from tax.

**OUTPUT: I<sub>1</sub>** - Updated and complete cadastral - valuation record for each land holding, with coded supplemental sheet showing tax due by year.

**ACTIVITY 7:** Preparation of IBM punched cards (set of three for each land holding) and preparation of output programs for preparation of unified tax receipts, tax lists, exemption lists, etc.

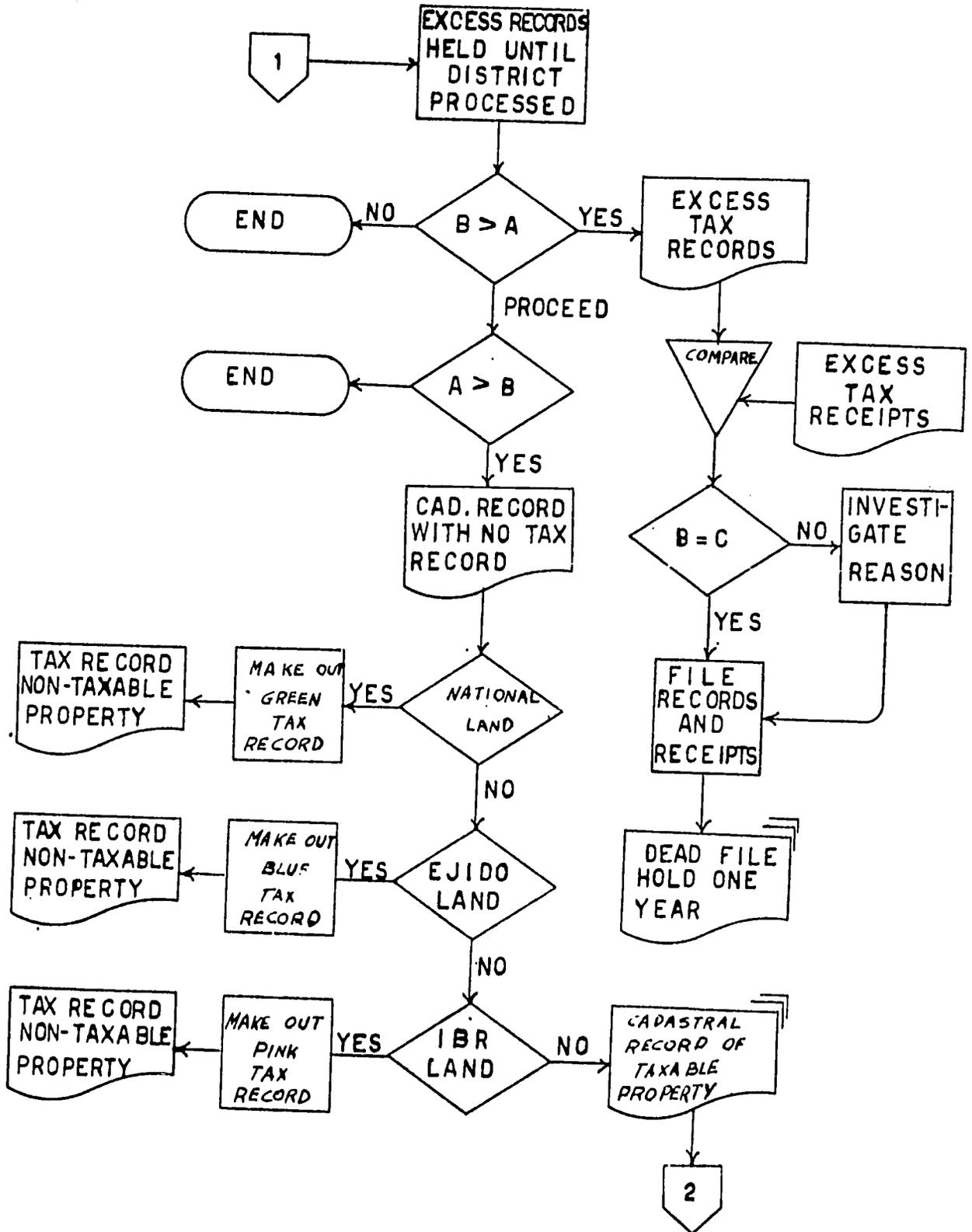
**OUTPUTS: J<sub>1</sub>** - Unified or summary tax receipt for each land holding, showing amount of tax due by category and by year.  
**K** - IBM punched cards, filed numerically by district. using cadastral code number.  
**L** - Tax lists by districts and other lists as required.



PROCEDURE FOR UPDATING TAX RECORDS  
 STEP 1



STEP 3





MINISTERIO DE HACIENDA

DIRECCION DE IMPUESTO INMOBILIARIO  
AÑO 1973

LIQUIDACION CORRESPONDIENTE AL INMUEBLE DEL DISTRITO DE

--

CTA. CTE. O PADRON		ZONA	PROPIETARIO	SUPERFICIE		UBICACION
NUMERO	SUB-CTA			HECTAREAS	m <sup>2</sup>	

VALORES (EN MILES DE GUARANIES)			
TIERRA	EDIFICIO	OFICIAL	IMFONIBLE

For Urban Property

CUOTA	ADICIONAL	VIAL	IMPUESTO
Direct Tax	Additional Tax	Road Tax	Total

For Rural  
Property

Fine MULTA.....%	
TOTAL \$s	

1973 TAX RECEIPT

.....  
LIQUIDADOR

.....  
CAJERO O COBRADOR

Observación: Este recibo no será válido sin las firmas y la certificación de la máquina registradora de caja.

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FLOW OF INFORMATION FOR THE FORMULATION AND USE OF CADASTRAL DATA

SOURCE OF PRE-CADASTRAL  
INFORMATION

<u>Supreme Court of Justice</u>	Property Registry
<u>Ministry of National Defense</u>	Military Geo- graphic Institute
<u>Ministry of Agriculture and Livestock</u>	Institute of Rural Welfare
<u>Ministry of Public Works and Communi- cation</u>	Department of Topography and Geodesy
<u>Ministry of Health</u>	Malaria Control Agency (CENEPA)
<u>Ministry of the Interior</u>	Municipalities
<u>Ministry of Finance</u>	Census and Statistics

PRINCIPLE USERS OF THE  
CADASTRAL DATA

Property  
Registry

Institute of  
Rural Welfare

Department of  
Topography and  
Geodesy

Technical Secretary  
of Planning

CENEPA

Ministry of  
Agriculture

Ministry of  
Education

Census and Statistics

MINISTRY OF FINANCE  
DIRECTION OF PROPERTY TAX  
CADASTRAL DEPARTMENT

ESTIMATED NUMBER OF LAND PARCELS

	URBAN	%	RURAL	%	TOTAL	%
I. Concepcion	17,630	6.9	14,050	5.6	31,680	6.3
II. San Pedro	7,980	3.1	20,330	8.1	28,310	5.6
III. La Cordillera	24,980	9.8	28,760	11.5	53,740	10.6
IV. Guaira	22,440	8.8	17,000	6.8	39,440	7.8
V. Caaguazu	13,710	5.4	25,630	10.2	39,340	7.8
VI. Caazapa	5,930	2.3	15,090	6.0	21,020	4.2
VII. Itapua	28,830	11.3	27,030	10.8	55,860	11.0
VIII. Misiones	7,330	2.9	8,250	3.3	15,580	3.1
IX. Paraguari	13,030	5.1	31,740	12.7	44,770	8.8
X. Alto Parana	6,440	2.5	13,490	5.4	19,930	3.9
XI. Central	95,780	37.4	31,990	12.8	127,770	25.2
XII. Itembucu	5,980	2.3	9,510	3.8	15,490	3.1
XIII. Amambay	5,780	2.2	7,290	3.0	13,070	2.6
TOTAL	255,840	100.0	250,160	100.0	506,000	100.0
	50.6%		49.4%		100.0%	

ESTIMATE OF NUMBER OF FIELD CREWS REQUIRED  
FOR DELINEATION OF RURAL PROPERTIES

	TOTAL ESTIMATED PROPERTIES
1. Concepcion	14,050
2. San Pedro	20,330
3. Cordillera	28,760
4. Guaira	17,000
5. Caaguazu	25,630
6. Caazapa	15,090
7. Itapua	27,030
8. Misiones	8,250
9. Paraguari	31,740
10. Alto Parana	13,490
11. Central	31,990
12. Neembucu	9,510
13. Amambay	7,290
<b>TOTALS</b>	<b>250,160</b>
10 Hectares or less	140,090 (56%)
10 to 40 Hectares	80,050 (32%)
Over 40 Hectares	30,020 (12%)

1. Production Rates:
  - a. 10 hectares or less: 10 per day per crew
  - b. 10 to 40 hectares: 8 per day per crew
  - c. Over 40 hectares: 4 per day per crew
  
2. Production Estimates:
  - a. 10 per day X 220 work days = 2,200 per year/per crew.  
140,090 properties ÷ 2,200 = 63.7 crew years
  - b. 8 per day X 220 work days = 1,760 per year/per crew  
80,050 properties ÷ 1,760 = 45.7 crew years
  - c. 4 per day X 220 work days = 1,880 per year/per crew  
30,020 properties ÷ 880 = 34.1 crew years
  - d. 143 total crew years ÷ 4 years = 36 field crews
  
3. Requirement:  
36 field crews for rural areas

**ESTIMATE OF NUMBER OF FIELD CREWS REQUIRED  
FOR REVISION AND DELINEATION OF URBAN PROPERTIES**

	PROPERTIES COMPLETED TO DATE	PROPERTIES TO BE COMPLETED	TOTAL URBAN PROPERTIES
1. Concepcion	13,370	4,260	17,630
2. San Pedro	3,806	4,174	7,980
3. Cordillera	18,443	6,536	24,979
4. Guaira	14,580	7,858	22,438
5. Caaguazu	9,142	4,572	13,714
6. Caazapa	1,095	4,833	5,928
7. Itapua	19,097	9,721	28,818
8. Misiones	3,211	4,118	7,329
9. Paraguari	5,438	7,596	13,034
10. Alto Parana	---	6,440	6,440
11. Central	82,360	13,422	95,782
12. Neembucu	1,890	4,096	5,986
13. Amambay	3,812	1,972	5,784
<b>TOTAL</b>	<b>176,244</b>	<b>79,598</b>	<b>255,842</b>

**PRODUCTION RATES:**

- a. Revise Properties  
Completed to date:  
25 per day per  
field crew
- b. Survey Properties:  
15 per day per  
field crew

**A. REVISION:** 25 per day X 220 work days = 5,500 per year/per crew  
 $176,244 \text{ properties} \div 5,500 = 32 \text{ crew years}$   
 $32 \div 4 \text{ year period} = 8 \text{ field crews}$

**B. SURVEY:** 15 per day X 220 work days = 3,300 per year/per crew  
 $79,598 \text{ properties} \div 3,300 = 24 \text{ crew years}$   
 $24 \div 4 \text{ year period} = 6 \text{ field crews}$

**REQUIREMENT:** 14 field crews for urban areas

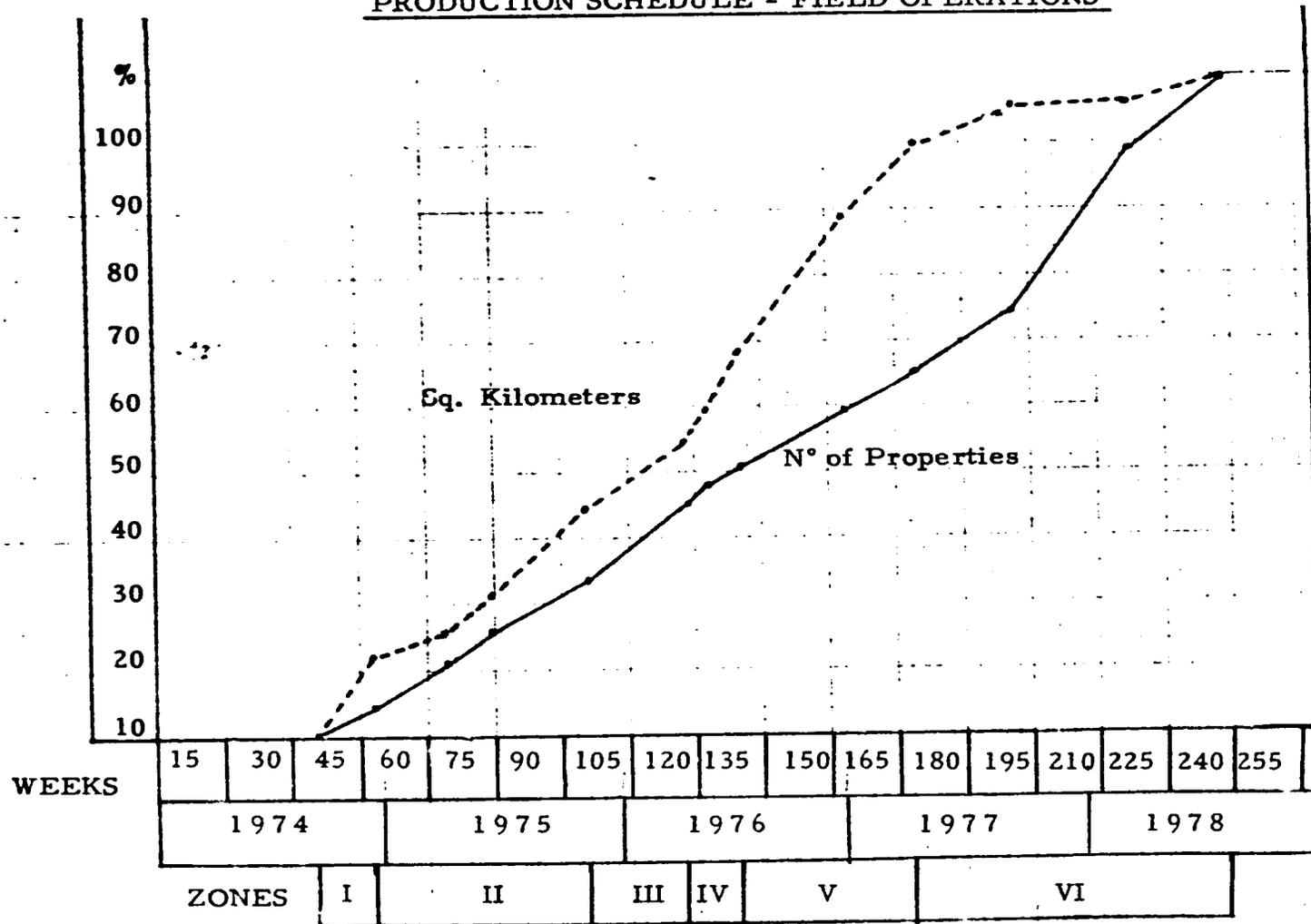
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SUMMARY OF ESTIMATED PRODUCTION  
 SCHEDULE FOR PROPERTY DELINEATION  
 - BY PRIORITY ZONES AND BY DEPARTMENTS

PRIORITY ZONES	% OF PROJECT AREA	STARTING WEEK	ENDING WEEK	STARTING WEEK	ENDING WEEK
I. 10 K	12.7	36.0	47.2	36.0	45.5
II. 4 E	2.0	41.6	65.8	37.5	63.0
6 G	5.9	54.0	73.8	57.5	71.5
5 F	13.5	65.8	95.1	63.0	91.8
III. 7 H	10.4	89.8	118.5	71.5	112.8
IV. 8 I	4.9	106.1	123.6	91.8	107.9
12 M	8.7	117.6	130.0	99.3	124.2
V. 2 C	12.5	123.6	154.1	113.0	128.3
13 N	8.1	136.9	153.3	117.9	135.2
1 B	11.3	141.3	170.7	127.2	177.6
VI. 9 J	5.3	153.3	191.6	167.8	214.4
11 L	1.5	176.1	218.9	196.6	245.3
3 D	3.1	200.3	240.3	199.0	230.6

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PRODUCTION SCHEDULE - FIELD OPERATIONS



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ESTIMATED PRODUCTION SCHEDULE FOR PROPERTY  
DELINEATION-BY DISTRICTS

DIST	RURAL					URBAN			
	AREA	PROPERTIES	STARTING WEEK	ENDING WEEK	REVISION NO. OF PROPERTIES	SURVEY NO. OF PROPERTIES	STARTING WEEK	ENDING WEEK	
K01	14,917	5,729	36.0	47.2	---	1,152	36.0	38.2	
K05	14,917	1,507	36.0	45.3		864	36.0	45.5	
K02	3,910	400	36.0	38.5		183	36.0	37.8	
K06		907	36.0	39.5		383	36.0	38.8	
K07		1,063	36.0	42.4		870	36.0	44.6	
K03	1,420	361	36.0	38.4		152	36.0	37.5	
K04		3,526	36.0	45.0		2,836	36.0	42.6	
2-1									
E01	390	2,956	54.0	64.2	14,580		54.0	57.5	
E02		480	41.6	48.8		557	37.5	48.8	
E03	470	1,605	42.4	66.5		159	37.8	39.5	
E06	140	1,080	46.0	65.8		640	39.6	46.0	
E08	90	910	42.6	48.3		280	44.6	47.4	
E05	280	1,190	45.0	50.0		142	44.7	46.0	
E04	170	2,550	45.3	65.3		416	46.0	50.0	
E10	360	1,040	48.0	58.5		550	47.4	56.6	
E11	330	1,050	56.4	63.0		1,365	46.0	56.8	
E07		710	48.0	56.3		326	56.8	60.0	
E09		630	48.0	53.8		421	48.0	57.0	

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## AERIAL PHOTOGRAPHY AND PHOTO LAB REQUIREMENTS

The project area is covered by vertical aerial photography at 1:50,000 or 1:60,000 scales. The 1:50,000 scale photography, covering the area south of 25° latitude, was flown in 1963 by a private company contracted by the OAS for the "Plan Triángulo" project. Parts of this area were re-flown in 1967 by the U.S. Air Force. The 1:60,000 scale photography, covering the area north of 25° latitude was taken by the U.S. Air Force in 1967 and 1968. The photography meets U.S. National Mapping Standards for the compilation of medium scale topographic maps. (See Annex II, Exhibit 6)

The Property Tax Office used the 1:50,000 scale photography for the OAS sponsored rural cadastral pilot project in the Department of Itapúa. (See Annex II, Exhibit 7) It was enlarged to 1:20,000 scale for the identification of farm boundaries and for the drafting of the cadastral plans at the same scale. Since the results obtained from the use of the 1:50,000 scale photography for the pilot project proved satisfactory (see Annex II, Exhibit 2), it was proposed that the existing mapping photography be used for a rural cadaster throughout the entire area.

During the preliminary review for the IRR of the proposed project, it was determined that about 40,000 sq. kilometers of larger scale photography would be required. This determination was based on an estimated average farm size within each of the 166 districts. A district with an estimated average farm size of 40 hectares or less was considered to have sufficient small farms to require cadastral plans at 1:10,000 scale, which would require aerial photography at 1:30,000 scale, and possibly 1:20,000 scale for the proper identification of small farm boundaries. In order to show this requirement in the IRR, it was estimated that the additional photography could be obtained by contract at a cost of \$160,000 or \$4.00 per sq. kilometer.

During the intensive review, it was determined that the need for additional aerial photography had been underestimated and oversimplified. Two additional factors had to be taken into consideration:

(i) The age of the existing mapping photography by the time it will be used in the field for the identification and delineation of property boundaries; and

(ii) The existence of settlements and rural communities with small farms throughout most of the project area.

The existing mapping photography will be from 8 to 11 years old by the time it is used for cadastral purposes. Consequently, it will be difficult to use this photography for the identification of property boundaries in areas that have undergone considerable changes from the time the photography was taken. New photography of each area will be required.

During the intensive review, visits were made to several GOP agencies, including SENEPA, the malaria control agency. SENEPA has had an active malaria control program throughout all of the project area since 1966. Since their operation required the "spraying" of every farm building at least once every six months, SENEPA compiled sketch maps of every district and of every village and settlement within each district. (See pages 11, 12 and 13 ). (SENEPA also has the name of each occupant, and other data, that will be of tremendous assistance to the cadastral program). This detailed information indicates that there are numerous settlements with small sized farms in the majority of the districts. Most of these settlements will require cadastral plans at 1:10,000 scale, which means that larger scale photography will be required for the proper identification of the small farm boundaries.

Taking the above factor into consideration, it is estimated that about 53,000 sq. kilometers (one-third of the project area) will require new aerial photography at 1:30,000 scale, which can be enlarged for the field identification of property boundaries and for the compilation of cadastral plans at 1:10,000 scale. The existing mapping photography, enlarged to 1:20,000 scale, can be used to identify the boundaries of the larger farms throughout the remaining area. Some boundary changes will have taken place from the time this photography was taken. However, the law requires

that surveys be made in these cases, and the survey plans will be made available for project use. In other words, the survey plans will be taken to the field to identify and verify these boundary changes during the property delineation phase.

In summary, larger scale aerial photography will be required for the proper identification of small farm boundaries in selected areas located throughout the project area. These selected areas will vary in size from about 20,000 sq. kilometers, which covers the Districts nearest Asunción; to about 20 sq. kilometers to cover individual village and settlement areas. This will require a detailed reconnaissance of the entire project area prior to soliciting bids for contracting the photography. In other words, it will be necessary to identify each area requiring new or larger scale photography and to calculate the sq. kilometers of photography required of each area.

As mentioned previously, it has been estimated that about 53,000 sq. kilometers of new photography at 1:30,000 scale will be required. The estimated cost for contracting this photography is \$160,000 (See page 6 ).

In view of the nature of the requirements, the best solution is to develop an in-country capability to take the aerial photography as it is needed during the four-year period of field operations. This possibility was considered during the intensive review and this course of action is recommended - provided that all the necessary details can be worked out prior to project implementation. Basically, this would involve the following:

(i) Obtaining a suitable GOP aircraft that can be modified to take aerial photography. (The Civil Aeronautics Agency, for example, has two aircraft that are suitable for this purpose.)

(ii) Purchasing an aerial camera and special navigation equipment.

(iii) Training a pilot, navigator and camera operator.

(iv) Purchasing aerial film, paper and chemicals and the equipment for developing the film. (The camera operator would be trained to develop the film, etc.)

If the Property Tax Office can make arrangements with the Civil Aeronautics Agency to modify one of their aircraft and to contract the aircraft, with pilot and a navigator, on an hourly basis, it is estimated that the additional aerial photography can be obtained at a cost of \$140,000. (See page 7 ).

During the intensive review the possibility of obtaining a U. S. Government surplus aerial camera of the type (KC1B) used by the U. S. Air Force was investigated. It might be possible to obtain a KC1B camera on loan from DMA IAGS to the GOP Military Geographic Institute (IGM). This would provide a savings of \$23,000, which could then be used to modify the CAA aircraft and to train the crew to take aerial photography. In this case, it would be possible to contract for part of the photography and to develop an in-country capability to take the remainder of the photography as it is required.

The Property Tax Office will require an in-country photo lab capability to make prints and enlargements for the property identification and delineation activity and for the compilation of the cadastral plans. The Military Geographic Institute (IGM) is presently constructing a new operations building that includes photo lab facilities. Arrangements have been made with the IGM to use these facilities. The cost of the equipment, materials and supplies to support the project activities is estimated at \$29,051 (See Annex II, Exhibit 11).

The plans of the new IGM photo lab facilities were reviewed by a DMA-IAGS Photo Lab Specialist. The facilities were considered to be more than adequate, with only minor modifications to the original lay-out proposed by IGM. (See Annex II, Exhibit 12).

SUMMARY OF AERIAL PHOTOGRAPHY REQUIREMENTS

1. Project Area: 160,000 sq.kms.
  - a. Estimate two thirds of project area require 1:20,000 scale end product.  
 $2/3$  of 160,000 = 107,000 sq.km.
  - b. Estimate one-third of project area require 1:10,000 scale end product.
  
2. Existing Mapping Photography: 160,000 sq.kms.
  - a. South of 25°Latitude: 1:50,000 scale
  - b. North of 25°Latitude: 1:60,000 scale  
(See Annex II, Exhibit 7)
  
3. Photographic Coverage:
  - a. 1:50,000 scale
    - 1) 9" on photo equals 11.43 km.
    - 2) Area Covered is 130.6 sq.kms.
    - 3) With 60% forward lap and 30% side lap, net gain per photo is 36.6 sq.km.
    - 4) From 25°Latitude South there are 124.6 map sheets at 1:50,000 scale.  
 $124.6$  sheets x 693 sq.kms. = 86,348 sq.kms.  
 $86,348 \div 36.6 = 2,360$  photographs.
  
  - b. 1:60,000 scale
    - 1) 9" on photo equals 13.72 km.
    - 2) Area covered is 188.2 sq.kms.
    - 3) With 60% forward lap and 30% side lap, net gain per photo is 52.6 sq.kms.
    - 4) From 25°Latitude North there are 107.0 map sheets at 1:50,000 scale.  
 $107$  sheets x 693 sq.kms = 74,151 sq.kms.  
 $74,151 \div 52.6 = 1,410$  photographs.
  
  - c. 1:30,000 scale
    - 1) 9" on photograph equals 6.86 kms.
    - 2) Area covered is 47.06 sq.kms.
    - 3) With 60% forward lap and 30% side lap, net gain per photo is 13.15 sq.kms.
    - 4) 53,000 sq.kms  $\div$  13.15 = 3,800 photographs.
  
4. Total photographs required for project activities is 7,570 photographs. Use 8,000 for cost estimates.

Estimated contract cost for obtaining 1:30,000 scale photography of 53,000 sq. kms.

Mobilization	\$ 12,000
Demobilization	4,000
Aircraft Stand-By for 45 days at \$275 per day	12,375
Photo lab Stand-By for 45 days at \$125 per day	5,625
Photography of 53,000 sq. kms. at \$2.15 per km	<u>113,950</u>
Sub-Total	147,950
Photo Inspector for 60 days at \$150 per day	9,000
Contingency	<u>3,050</u>
TOTAL	160,000

Contract to include developing film, making check prints and flight line diagrams.

NOTE: The above estimate is based on 1973 contract costs for photography taken in Central America. Additional allowance made for mobilization and demobilization costs.

**Estimated In-Country cost for taking photography during four-year period.**

1. Modification of Aircraft		\$	8,500
2. Operation of Aircraft with Pilot and Navigator: 400 hours at \$150 per hour			60,000
3. Purchase of Equipment			32,675
a. Camera	\$	24,000	
b. Drift Meter and Photoscope		7,500	
c. B-5 Developing Kit		550	
d. Film Dryer		625	
	\$	<u>32,675</u>	
4. Purchasing of Materials *			
a. 160 rolls of film at \$70ea.	\$	11,200	\$ 19,000
b. 440 boxes of paper at \$15ea.		6,600	
c. Chemicals		1,200	
	\$	<u>19,000</u>	
5. Personnel			11,000
a. Camera operator: 50Mns at \$120	\$	6,000	
b. Lab Technician: 50Mns at 100	\$	<u>5,000</u>	
	\$	11,000	
6. Training of Personnel			
2 months at \$3,000 per mn.			\$ 6,000
		Sub-Total	137,175
		Contingency	<u>2,825</u>
		TOTAL	<u><u>140,000</u></u>

\* 1:30,000 scale photo covers 13sq. km. on the ground. 53,000 sq. km ÷ 13 = 4,000 photos. 250 photos per roll = 160 roll of film.

SUMMARY OF PHOTOGRAPHIC MATERIALS REQUIRED

1. AERIAL PHOTOGRAPHIC PRINTS:

a. Double Weight; semi-matte paper.

- 1) 8,000 photographs
- 2) Box of 250 sheets: 32 boxes
- 3) Price: \$26.50 per box
- 4) Cost:  $\$26.50 \times 32 = \$848.00$   
Use \$850.00

b. Developer: 2 gallon bottles

- 1) 8,000 prints
- 2) 1 bottle per 100 prints: 80 bottles
- 3) Price: \$1.54 per bottle
- 4) Cost:  $\$1.54 \times 80 = \$123.20$   
Use \$125.00

c. Fixer: 5 gallon bottles

- 1) 8,000 prints
- 2) 1 bottle per 400 prints: 20 bottles
- 3) Price: \$3.22 per bottle
- 4) Cost:  $\$3.22 \times 20 = \$64.40$   
Use \$65.00

2. ENLARGEMENTS

a. For 1:50,000 scale: 2 1/2 enlargement

- 1) 1,200 enlargements (24" by 30" double weight semi-matte paper)
- 2) Box of 250 sheets: 5 boxes
- 3) Price: \$174.10 per box
- 4) Cost:  $\$174.10 \times 5 = \$870.50$   
Use \$875.00

b. For 1:60,000 and 1:30,000 scale (3 times enlargement)

- 1) 2,800 enlargements (27" by 28" double weight, semi-matte paper)
- 2) Box of 250 sheets: 12 boxes
- 3) Price: \$182.80 per box
- 4) Cost:  $\$182.80 \times 12 = \$2,193.60$   
Use \$2,200.00

c. Developer: 5 gallon bottles

- 1) 4,000 prints
- 2) 1 bottle per 80 prints: = 50 bottles
- 3) Price: \$3.22 per bottle
- 4) Cost:  $\$3.22 \times 150 = \$161.00$   
Use \$165.00

d. Fixer: 5 gallon bottles

- 1) 4,000 prints
- 2) 1 bottle per 80 prints: 50 bottles
- 3) Price: \$2.21 per bottle
- 4) Cost:  $\$2.21 \times 50 = \$110.50$   
Use \$115.00

3. TOTAL COST: \$ 4,400

UNCLASSIFIED

APPENDIX II, Page 15 of 165  
Exhibit 5, Page 10 of 13

APPENDIX II. UIC'S FOR AHCAL LAB:

1. Contact Printer
2. Print Processor
3. Print Dryer
4. Water Filter System
5. Replacement Filters
6. Telephone control sinks
7. Print Mixer - Rectifier
8. Contact Vacuum Frame
9. Exhaust Fan
10. Air Conditioners

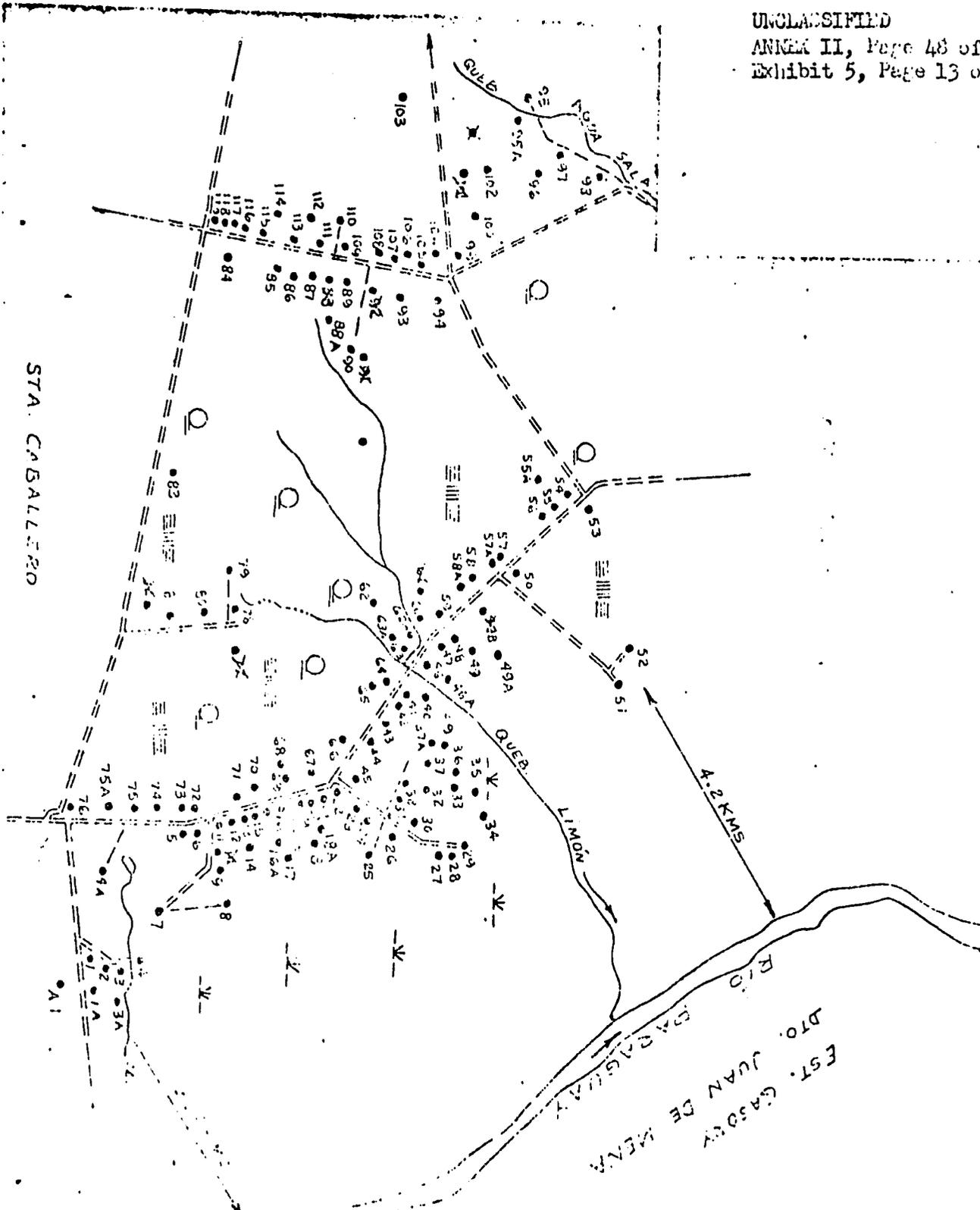
BEST AVAILABLE COPY





UNCLASSIFIED

ANNEX II, Page 48 of 163  
Exhibit 5, Page 13 of 13



00021 0710

## CARTOGRAPHIC REQUIREMENTS

### 1. GENERAL

In 1962, the Military Geographic Institute (IGM) initiated a basic topographic mapping program in collaboration with the Inter American Geodetic Survey (DMA-IAGS). Progress to date includes the following:

- a. The basic geodetic control is about 85% complete in the Oriente Region, i.e. the project area.
- b. The entire country is covered with basic aerial mapping photography, taken by the U.S. Air Force.
- c. The mapping control of this photography has been completed south of 25° latitude and is presently in progress in the northern part of the Oriente Region.
- d. The compilation of 1:25,000 scale topographic manuscripts will be completed from 25° latitude to 26° latitude by the end of 1973, using photogrammetric control provided by DMA-IAGS.
- e. In June 1973, the DMA-IAGS provided the IGM with a WILD A-7 Stereomat, which is a first-order photogrammetric instrument used to establish photogrammetric control for compilation purposes.

### 2. PROJECT

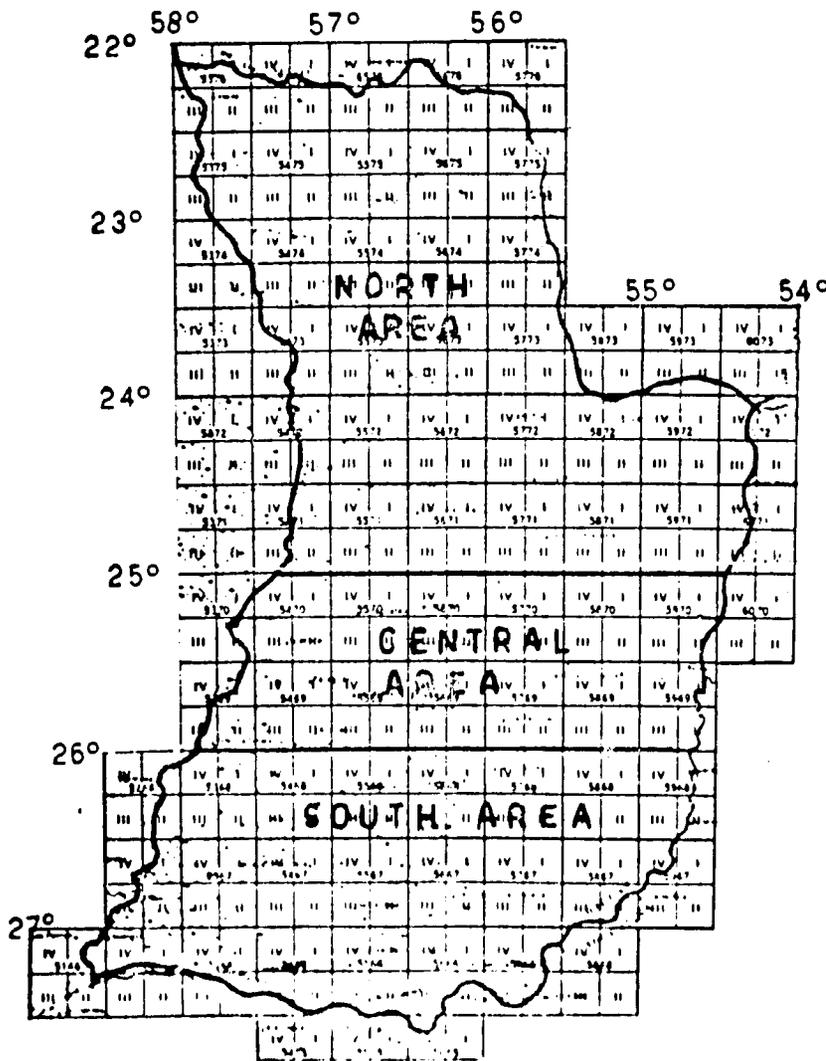
In view of these accomplishments on the part of the IGM, it is proposed to use the compilation manuscripts as the base map for drafting the rural cadastral plans, in lieu of making semi-controlled mosaics as originally proposed. In order to do this, the IGM with DMA-IAGS technical assistance, will:

- a. Change the compilation scale from 1:25,000 to 1:20,000 in order to facilitate the drafting of the rural cadastral plans;
- b. Change the order of priority to fulfill project needs;
- c. Accelerate the compilation phase in order to complete the manuscripts of the project area by early 1978;
- d. Provide additional control points and other features on the manuscripts in order to facilitate the transfer of property boundaries from the field annotated photographs to the manuscripts;
- e. Provide a plane coordinate grid system, based on a conformal projection, as a secondary grid to be shown on the topographic manuscripts.

The DMA-IAGS is assigning a photogrammetrist full time to Paraguay in order to train additional people in the compilation and photogrammetric control phases. The project will provide funds for additional people, overtime pay and materials.

The procedures have been reviewed in detail and the IGM will have no problem in meeting the proposed schedule, particularly in view of the fact that the field control is well ahead of the photogrammetric phase.

SUMMARY OF CARTOGRAPHIC  
 REQUIREMENTS



NORTH AREA:  
 73,265 Km<sup>2</sup>  
 2,000 photographs at  
 1:60,000 scale  
 107 map sheets at  
 1:50,000 scale  
 642 cadastral plans at  
 1:20,000 scale  
 1,284 cadastral plans at  
 1:10,000 scale

CENTRAL AREA:  
 35,760 Km<sup>2</sup>  
 930 photographs at  
 1:50,000 scale  
 50 map sheets at  
 1:50,000 scale  
 300 cadastral plans at  
 1:20,000 scale  
 450 cadastral plans at  
 1:10,000 scale

SOUTH AREA:  
 50,600 Km<sup>2</sup>  
 1,314 photographs at  
 1:50,000 scale  
 73 map sheets at  
 1:50,000 scale  
 438 cadastral plans at  
 1:20,000 scale  
 876 cadastral plans at  
 1:10,000 scale

SUMMARY OF PHOTOGRAMMETRIC DATA OF  
PROJECT AREA

I. 1:25,000 scale manuscripts using 1:50,000 scale photography

A. Dimensions:

- 1) 9 inches on photograph = 11.43 km.
- 2) Net gain E-W direction with 60% forward lap:
  - a) 40% of 11.43 km. = 4.572 km or 4,572 mts.
  - b) 4,572 mts. at 1:25,000 scale = 18.3 cm.
- 3) Net gain in N-S direction with 30% side-lap,
  - a) 70% of 11.73 km. = 8.000 kms. or 8,000 mts
  - b) 8,000 mts at 1:25,000 scale = 36.0 cm.
- 4) Dimensions of three (3) stereo models in line per manuscript.
  - a) N-S direction = 36 cm (14 inches)
  - b) E-W direction = 55 cm (22 inches)

B. Approximate number of models and manuscripts already compiled in the Central Area:

- 1) 51.6 Full map sheets at 1:50,000 scale
- 2) Average 18 photographs per sheet
- 3)  $51.6 \times 18 = 929$  models  
Use 927
- 4)  $927 \div 3 = 309$  manuscripts in central area.

C. Dimensions of 1:25,000 scale manuscripts enlarged to 1:20,000 scale

- 1) N-S direction = 43 cm. (17 inches)
- 2) E-W direction = 66 cm. (26 inches)

II. 1:20,000 scale manuscripts using 1:50,000 scale manuscripts.

A. Dimensions:

- 1) 9 inches on photographs = 11.43 km.
- 2) Net gain in E-W direction with 60% forward lap.
  - a) 40% of 11.43 km. = 4.572 km or 4,572 mts.
  - b) 4,572 mts at 1:20,000 scale = 22,86 cm.
- 3) Net gain in N-S Direction with 30% side lap.
  - a) 70% of 11.43 km. = 8.000 kms or 8,000 mts.
  - b) 8,000 mts at 1:20,000 scale = 40 cm.
- 4) Dimensions of two (2) stereo models in line per manuscript
  - a) N-S dimension = 40.0 cm. (16 inches)
  - b) E-W Dimension = 45.7 cm. (18 inches)

B. Approximate number of models and manuscripts to be compiled in South Area:

- 1) 73 full map sheets at 1:50,000 scale
- 2) Average 18 photographs per sheet
- 3)  $73 \times 18 = 1,314$  photographs,  
Use 1,314 stereo models.
- 4)  $1,314 \text{ stereo models} \div 2 = 657 \text{ manuscripts.}$

III. 1: 20,000 scale manuscripts using 1:60,000 scale photography

A. Dimensions:

- 1) 9 inches on Photograph = 13.72 km.
- 2) Net gain in E-W direction with 60% forward lap:
  - a) 40% of 13.72 km. = 5.488 km. or 5,488 mts.
  - b) 5,488 mts. at 1:20,000 scale = 27.5 cm.
- 3) Net gain in N-S direction with 30% side lap:
  - a) 70% of 13.72 km. = 9.604 km. or 9,604 mts.
  - b) 9,604 mts. at 1:20,000 scale = 48 cm.
- 4) Dimensions of two (2) stereo models in line per manuscript
  - a) N-S direction = 48.0 cm. (19 inches)
  - b) E-W direction = 55.0 cm. (22 inches)

B. Approximate number of models and manuscripts to be compiled in North Area:

- 1) 107 full map sheets at 1:60,000 scale
- 2) Average 18 photographs per sheet
- 3)  $107 \times 18 = 1,926$  photographs  
Use 1,926 stereo models.
- 4)  $1,926 \text{ stereo models} \div 2 = 963 \text{ manuscripts.}$

SUMMARY OF PHOTOGRAMMETRIC MATERIALS REQUIRED FOR  
COMPILATION OF 1:20,000 SCALE MANUSCRIPTS

1. Diapositive Film Plates for Balblex Stereo Plotters.
  - a. 3,230 diapositives. (North and South areas)
    - 1) 36 plates per box: 90 boxes
    - 2) Price: \$7.56 per box
    - 3) Cost:  $\$7.56 \times 90 = \$680.40$   
Use \$700.00
  2. Resistol Paper for Compilation Manuscripts:
    - a. Sheet size: 106 cm. by 152 cm. (42" x 60")
    - b. South Area: Using 1:50,000 scale photography
      - 1) Manuscript size: 40 cm by 45 cm (15" x 18")
      - 2) 2 Manuscripts per sheet:
      - 3) 657 manuscripts  $\div 2 = 328$  sheets.
    - c. North area: Using 1:60,000 scale photography
      - 1) Manuscript size: 48 cm. by 55 cm. (19" x 22")
      - 2) 2 manuscripts per sheet:
      - 3) 963 manuscripts  $\div 2 = 482$  sheets
    - d. Total sheets = 810
      - 1) For lots of 50 sheets use 850
      - 2) Price per sheet: \$0.76
      - 3) Cost:  $\$0.76 \times 850 = \$646.00$   
Use \$650.00
3. Total cost: \$1,350.00

NOTE: All other supplies and materials required will be furnished by DMA-IAGS as part of the basic mapping program.

4. Carbons for Arc Lamps
  - a. 1 carbon per 3 manuscripts
  - b. 1,929 manuscripts  $\div$  3 = 643 carbons
  - c. 36 carbons per box = 18 boxes
  - d. Price per box: \$33.00
  - e. Cost: \$33.00 x 18 = \$594.00  
Use \$600.00
5. Total Cost: \$4,250.00

SUMMARY OF PHOTOGRAPHIC MATERIALS REQUIRED FOR  
CONSTRUCTING 1:20,000 SCALE BASE MOSAICS USING  
COMPILATION MANUSCRIPTS.

1. High Speed duplicating film
  - a. Central Area: (17" x 26") manuscript
    - 1) Film size: 22" by 28"
    - 2) 1 sheet of film per manuscript.
    - 3) 309 manuscripts
    - 4) Boxes of 25 sheets = 13 boxes
    - 5) Unit price per box = \$51.00
    - 6) Cost: \$51.00 x 13 = \$663.00  
Use \$675.00
  - b. South and North areas. (19" x 22")
    - 1) Film size 20" x 24"
    - 2) 1 sheet of film per manuscript.
    - 3) 1,620 manuscripts
    - 4) Boxes of 50 sheets = 33 boxes
    - 5) Unit price per box = \$79.80
    - 6) Cost: \$79.80 x 33 = \$2,633.40  
Use \$2,650.00
2. Film Developer.
  - a. Size: 2 gallon bottles
    - 1) 1 bottle per 25 sheets
    - 2) 1,929 sheets  $\div$  25 = 78 bottles
    - 3) Unit Price: \$1.54
    - 4) Cost: \$1.54 x 78 = \$120.12  
Use \$125.00
3. Film Fixer:
  - a. Size: 5 gallon bottles
    - 1) 1 bottle per 25 sheets
    - 2) 1,929 sheets  $\div$  25 = 78 bottles
    - 3) Unit price: \$2.21
    - 4) Cost: \$2.21 x 78 = \$172.38  
Use \$175.00

SUMMARY OF DRAFTING AND REPRODUCTION MATERIALS  
REQUIRED FOR COMPILATION OF RURAL CADASTRAL PLANS,  
SECOND ORIGINALS AND ~~COPIES~~ COPIES.

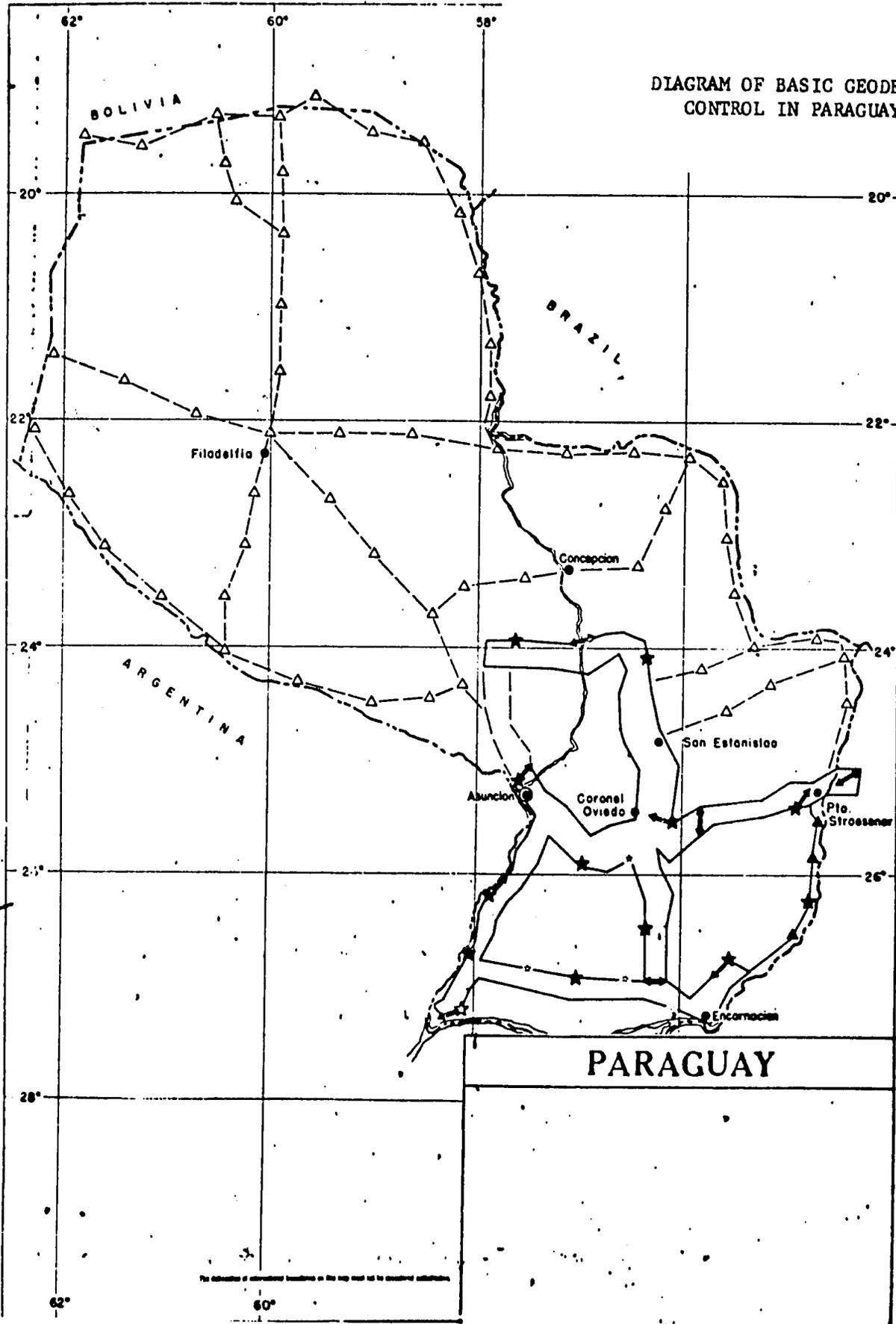
1. Stable base drafting film: 24" x 30"
  - a. 1:20,000 scale cadastral plans: 2,100
  - b. 1:10,000 scale cadastral plans: 4,900
  - c. Total rural cadastral plans: 7,000
  - d. Film in Boxes of 50 sheets
  - e. Number of boxes required: 140
  - f. Unit cost per box: \$90.20
  - g. Cost:  $\$90.20 \times 140 = \$12,628$   
Use \$12,650
  
2. Positive translucent film for second originals. (For making ozilid copies.)
  - a. Rolls 30" wide by 50 yards.
  - b. Length:  $7,000 \times 24" \div 36" = 4,670$  yds
  - c. No. of rolls:  $4,670 \div 50 = 94$  rolls
  - d. Price per roll: \$7.50
  - e. Cost:  $\$7.50 \times 94 = \$705.00$   
Use \$725.00
  
3. Ozilid paper for copies.
  - a. Rolls 30" wide by 50 yards.
  - b. No. of rolls: 188; use 200
  - c. Price per roll: \$4.32
  - d. Cost:  $\$4.32 \times 200 = \$864.00$   
Use \$875.00
  
4. Developer.
  - a. 1 gallon bottles
  - b. 1 gallon for 4 rolls
  - c.  $294 \text{ rolls} \div 4 = 74$  bottles
  - d. Price per bottle: \$4.52
  - e. Cost:  $\$4.52 \times 74 = \$334.48$   
Use \$350.00
  
5. Total Cost: \$14,600

## SUMMARY OF PERSONNEL REQUIREMENTS FOR IGM

### PHOTOGRAMMETRIC SECTION

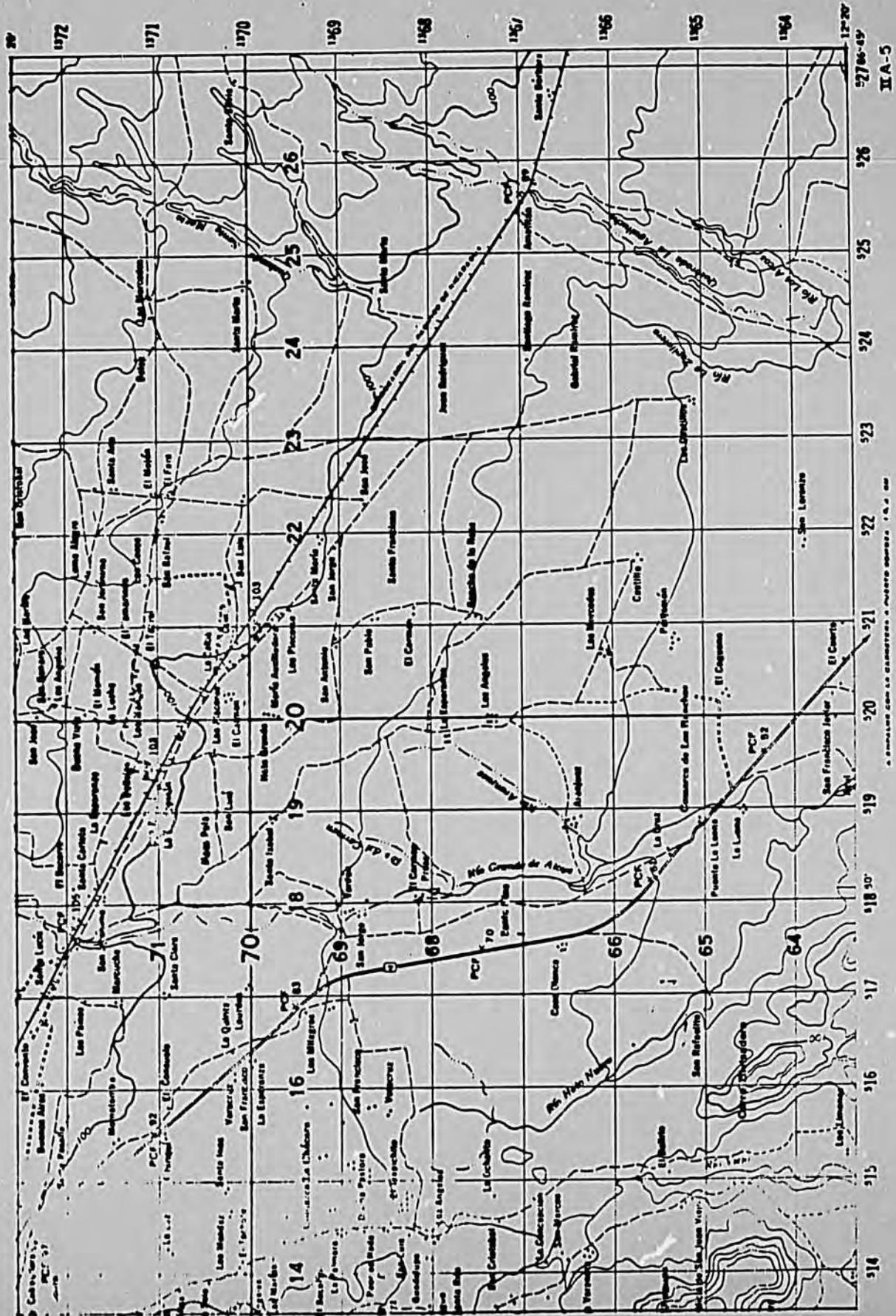
1. Number of models remaining to be compiled.
  - a. South Area = 1,314
  - b. North Area = 1,296
  - c. Total = 3,240
  
2. Total number of personnel required to complete compilation in 3.75 years.
  - a. Production: 2.5 models per week per compiler.
  - b.  $2.5 \times 44 \text{ work weeks} = 110 \text{ models per year per compiler.}$
  - c.  $3,240 \div 110 = 29.46 \text{ man years.}$
  - d.  $29.46 \div 3.75 = 8 \text{ compilers.}$
  - e. Other:
    - 1) 1 Supervisor
    - 2) 2 photogrammetrists for aerial triangulation.
    - 3) 1 Operator (Photogrammetrist) for the coordinatorgraph.
  - f. Total: 12 personnel.
  
3. IGM personnel in photogrammetry Section
  - a. 1 Supervisor
  - b. 2 Photogrammetrists on Aerial Triangulation
  - c. 6 compilers (basic photogrammetrists)
  
4. Additional Personnel required.
  - a. 1 Compiler
  - b. 1 Operator for coordinatorgraph.

DIAGRAM OF BASIC GEODETIC CONTROL IN PARAGUAY



The distances of observed baselines on this map are not to be construed as distances.

EXAMPLE OF 1:50,000 SCALE TOPOGRAPHIC MAP SHEET



1:50,000  
Scale  
Sheet 5, 16, 17, 18, 19

IA-5

Scale 1:50,000

CALCULATION OF THE NUMBER OF RURAL CADASTRAL PLANS  
REQUIRED TO COVER THE PROJECT AREA

1. 1:50,000 scale topographic sheets.
  - a. Sheet size is 15' Latitude by 15' Longitude.
  - b. Coverage on the ground.
    - 1) Average N-S: 27.6 km.
    - 2) Average E-W: 25.1 km.
    - 3) Average area: 693 sq. kms.
  - c. Number of map sheets:
    - 1) North Area: 107.0 Fullsheets.
    - 2) Central Area: 51.6 " "
    - 3) South Area: 73.0 " "
    - 4) Total: 231.6 " "
2. 1:20,000 scale cadastral plans.
  - a. Nine (9) sheets at 1:20,000 scale cover one (1) sheet at 1:50,000 scale.
  - b. Sheet size is 5' latitude by 5' longitude.
  - c. Coverage on the ground:
    - 1) Average N-S: 9.2 km.
    - 2) Average E-W: 8.4 km.
    - 3) Average Area: 77.3 sq. kms.
  - d. Sheet dimensions
    - 1) N-S; 9.2 km. = 46 cm (18.1 inches)
    - 2) E-W; 8.4 km. = 42 cm (16.5 inches)
  - e. Number of sheets
    - 1) Area coverage = 160,000 sq. kms.
    - 2)  $107,000 \div 77.3 = 2,070$  sheets.  
Use 2,100.

3. 1:10,000 scale cadastral plans.

a. Four (4) sheets at 1:10,000 scale cover - one (1) sheet at 1:20,000 scale.

b. Sheet size is 2.5 latitude by 2.5 longitude.

c. Coverage on the ground:

- 1) Average N-S: 4.6 km.
- 2) Average E-W: 4.2 km.
- 3) Average Area: 19.3 sq. kms.;

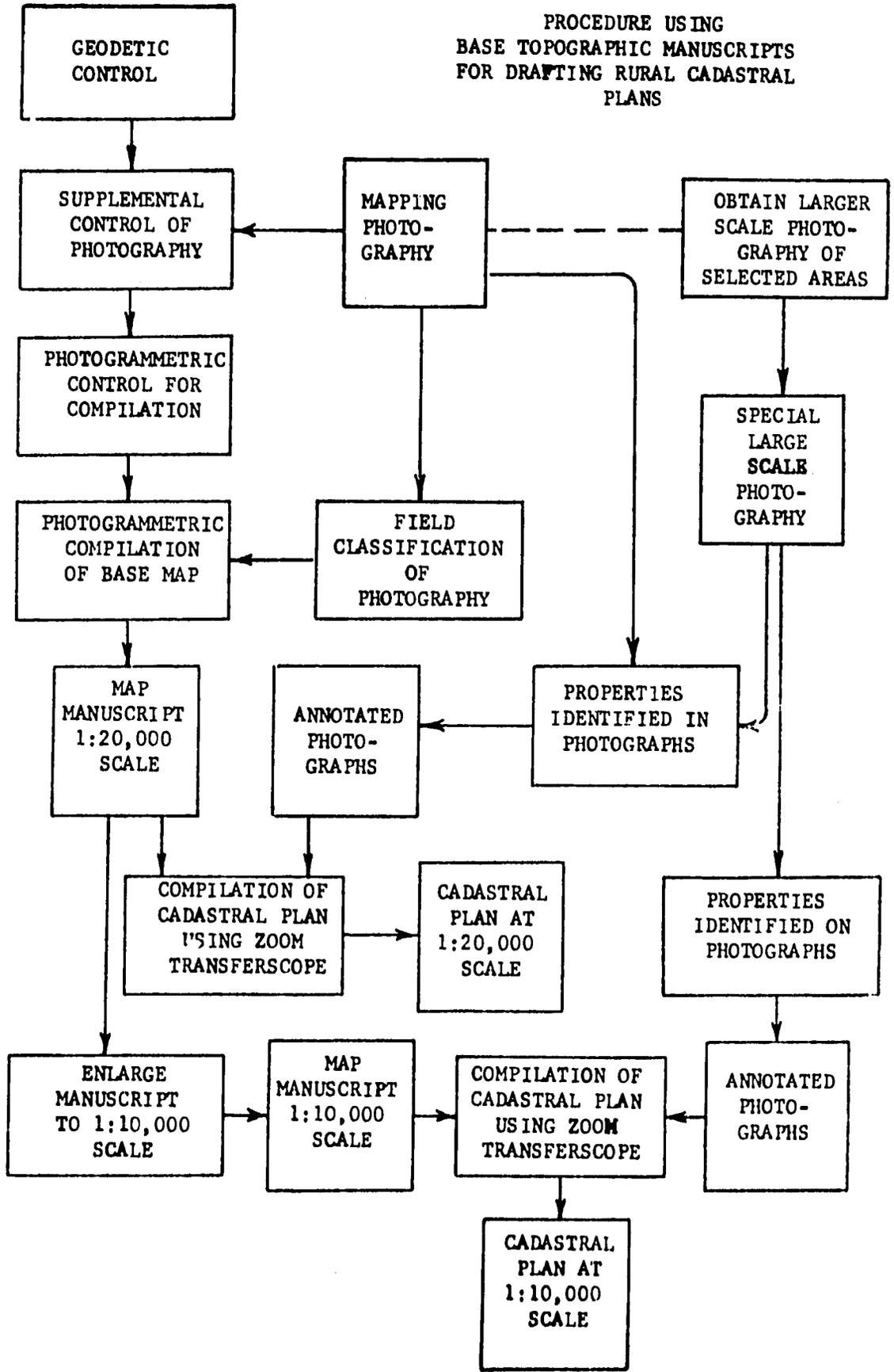
d. Sheet Dimensions:

- 1) N-S; 4.6 km. = 46 cm. (18.1 inches)
- 2) E - W; 4.2 km. = 42 cm. (16.5 inches)

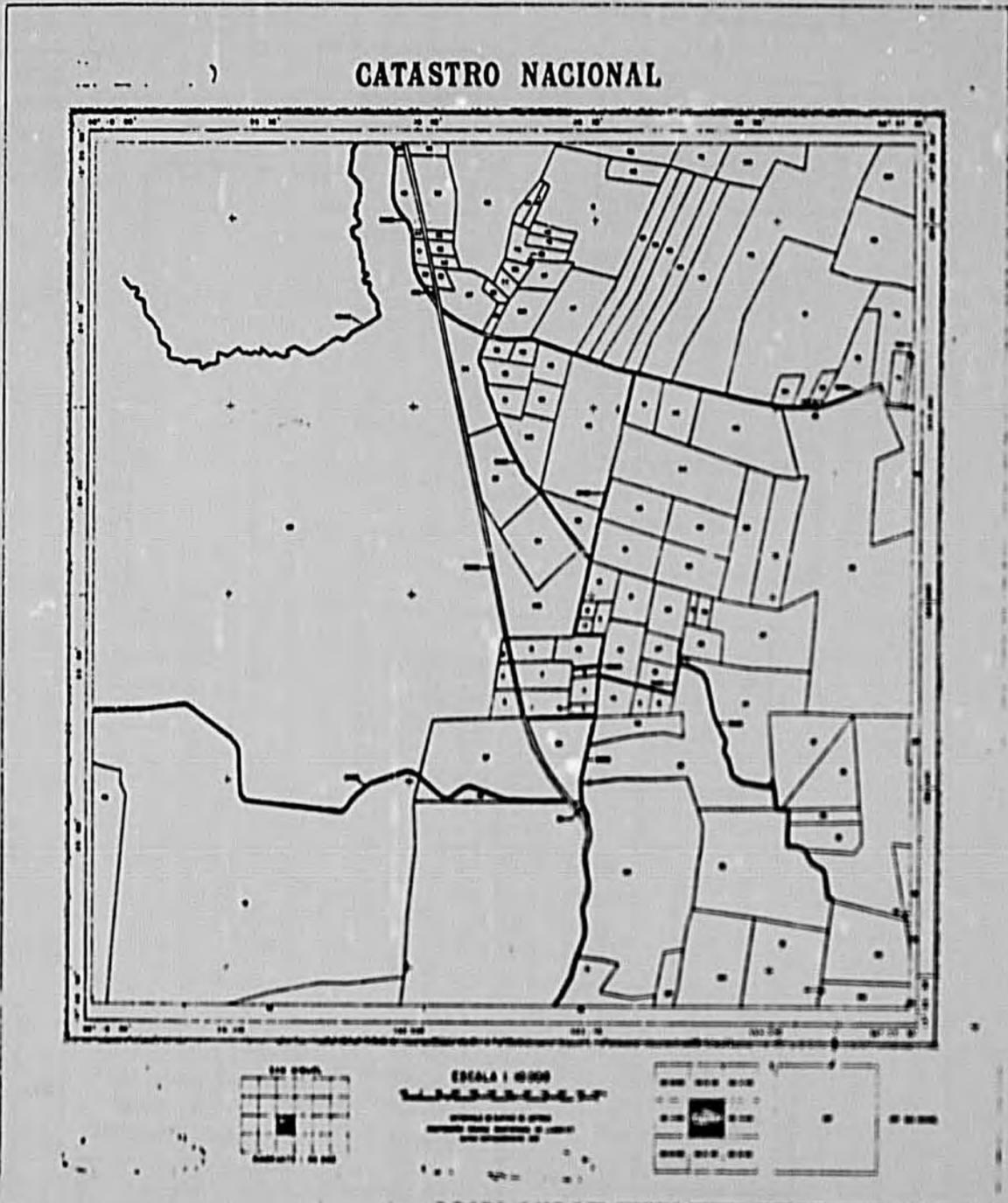
e. Number of sheets.

- 1) Area Coverage = 53,000 sq. kms.
- 2)  $53,000 \div 19.3 = 2,746$  sheets.  
Use 2,800

4. Estimated total number of cadastral plans: 4,900

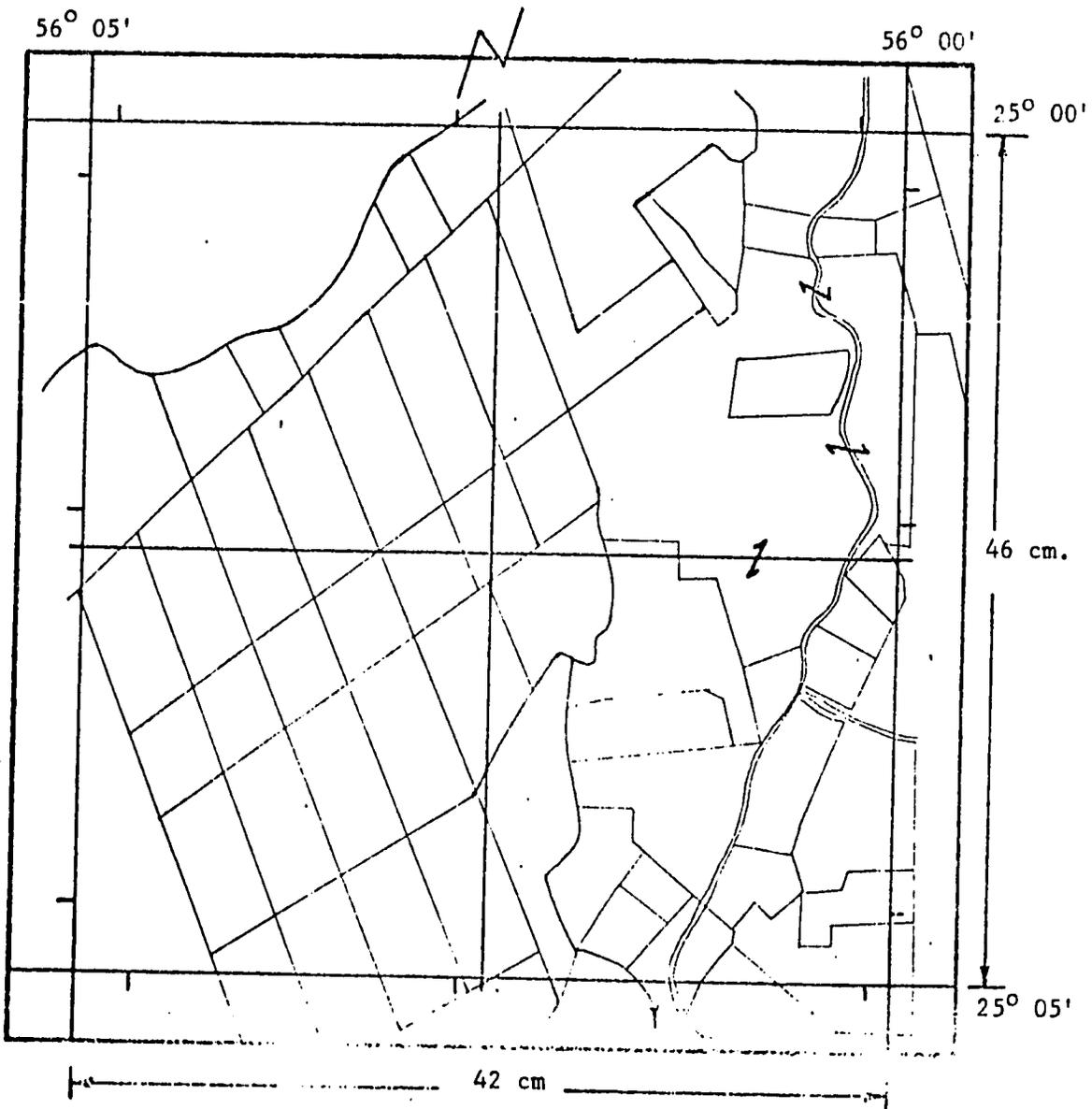


EXAMPLE OF 1:10,000 SCALE RURAL CADASTRAL PLAN



EXAMPLE OF 1:20,000 SCALE RURAL CADASTRAL PLAN

GRID TICKS OF PLANE COORDINATES  
ON CONFORMAL PROJECTION



## URBAN CADASTRAL MAPPING

Due to the limited in-country cartographic capability, which will be used for the rural cadastral mapping, it is proposed to continue the present mapping system of "block plats" to identify urban lots. However, in order to insure a compatibility between this system and future survey and mapping requirements of urban areas for other purposes, the following modifications are proposed for the project:

1. That existing aerial photography be enlarged to 1:5,000 scale so that it can serve as a base index map for laying out zones and map sheets as a standard grid format that conforms to the rural cadastral map format.
2. That the blocks, ie block **plats** be numbered within each area covered by an urban map sheet at 1:1,000 scale.
3. That survey pins be placed on each block corner, with a line-of-sight between adjacent pins, and that the lot points be referenced to the two corner pins using a tape-right angle prism procedure.

In the future, first, second and third order geodetic networks and traverses can be made and the corner pins can be tied into these control networks. This will then provide the means for drafting highly accurate engineering plans that will be compatible with the cadastral system.

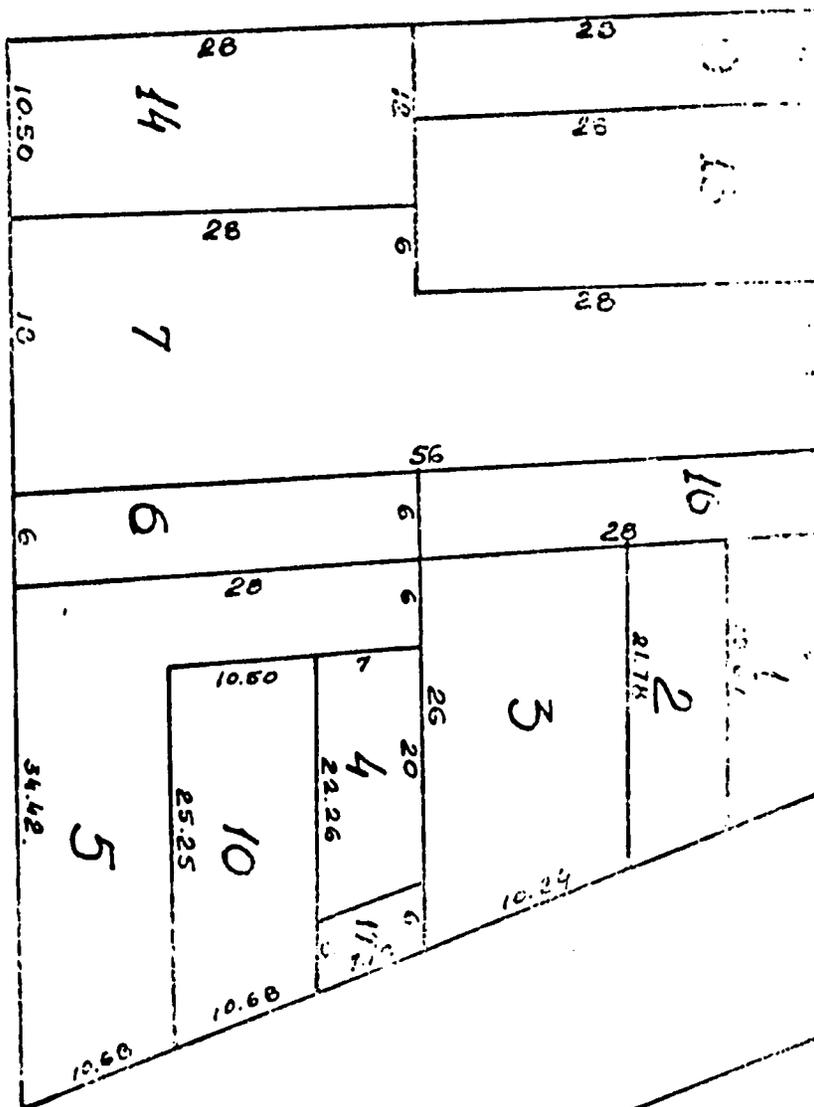
EXAMPLE OF URBAN ENGINEERING PLAN

CATASTRO URBANO



EXAMPLE OF BLOCK PLAT

100 - PEB. RIVARSA



FILED IN RECORDS & MAPS

200 - GRAL. SANTOS

-----  
PROPOSED CADASTRAL CODING SYSTEM

The Property Tax Office is presently using two different cadastral coding systems to identify land parcels; one for urban areas and one for rural areas.

The urban system is based on a zone-block-parcel code number, whereby:

- a. The zone number is assigned to a particular city or town. For example, zones 10 thru 18 are used for Asunción.
- b. The blocks are numbered within each zone. Thus, 10-05 would identify a block plot.
- c. The parcels are numbered within each block. Thus, 10-05-06 would identify parcel No. 6 in block plot no.5 in zone 10 of Asunción.

The rural system is based on a Department-District-Map-parcel code number. The map in this case is the area covered by a 1:50,000 scale aerial photograph. Thus, 07-01-04-48 identifies parcel no 48 on photograph no 04 in Carmen del Paraná, Itapúa.

It is proposed to change the above systems to one permanent system that is not dependent upon the type and scale of photography used to identify the land parcels, nor dependent upon one particular scale of cadastral plans. The proposed system would be a ten digit alpha-numerical code that would combine an administrative code that identifies Departments and Districts with a map sheet code number that would identify the geographic location of the cadastral plan. Moreover, the proposed system would identify urban properties on a code that is compatible with the rural code and would identify special small rural properties, ie minifundios. The code would consist of the following:

1. Department:	18	(Itapúa)
2. District:	01	(Encarnación)
3. Zone:		
a. Rural:	2S	(Identifies 1:50,000 scale map sheet 5666I)
b. Urban:	02	sub-division of the city of Encarnación)
4. Map:		
a. Rural:	92	(Identifies the 1:20,000 and 1:10,000 cadastral plans within map 566-IIe 25.)
b. Urban:	01	(Identifies a 1:1,000 scale cadastral plan within each zone.)
5. Block:		
a. Rural:	00	(left blank)
b. Urban:	01	(Blocks numbered within each urban map. Number identifies <u>block plots.</u> )
c. Special:	AI	(Identifies a special inset map of minifundios.)
6. Parcel:		
a. Rural:	01	(Parcels numbered within each 1:10,000 scale plan.)
b. Urban:	01	(Parcels numbered within each block.)
c. Special:	01	(Parcels numbered on special

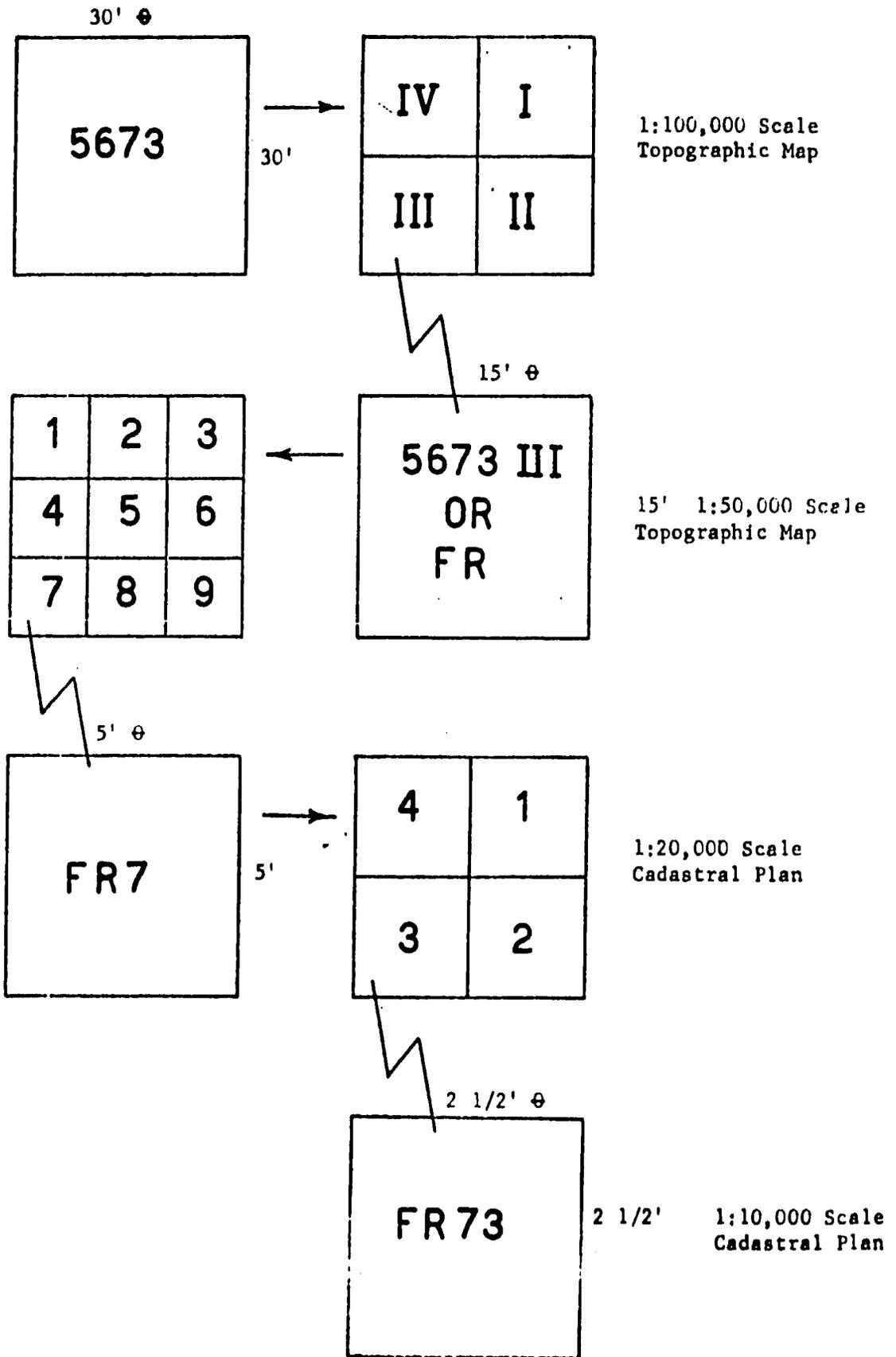
## Example:

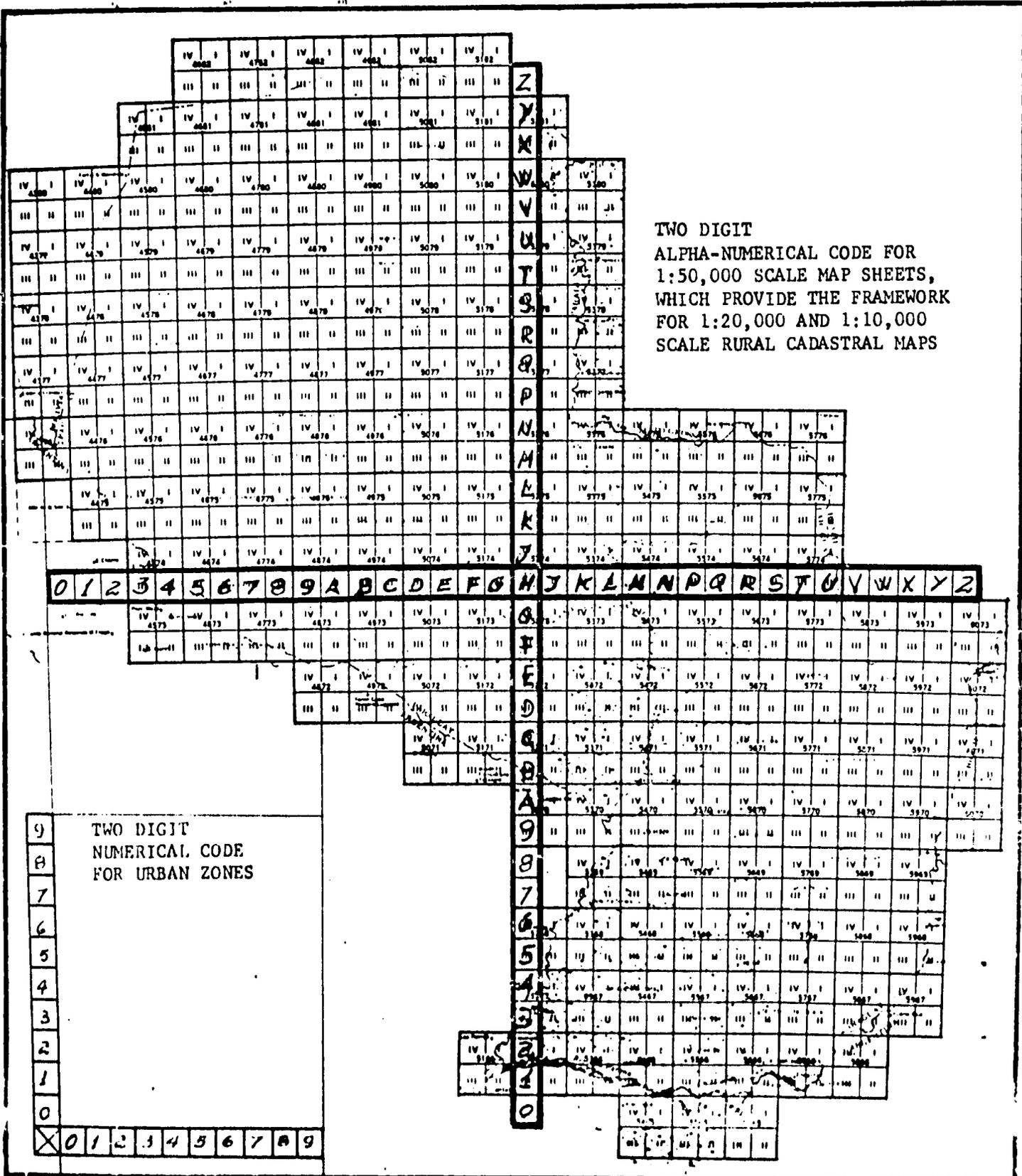
Urban code number: H0101010101

Rural code number: H012S920001

Special code number: H012S 92AI01 \*

\* This is a small rural parcel identified on a special cadastral plan no. 2S92A1, the location of which is identified on rural cadastral plan no. 2592.





TWO DIGIT  
 ALPHA-NUMERICAL CODE FOR  
 1:50,000 SCALE MAP SHEETS,  
 WHICH PROVIDE THE FRAMEWORK  
 FOR 1:20,000 AND 1:10,000  
 SCALE RURAL CADASTRAL MAPS

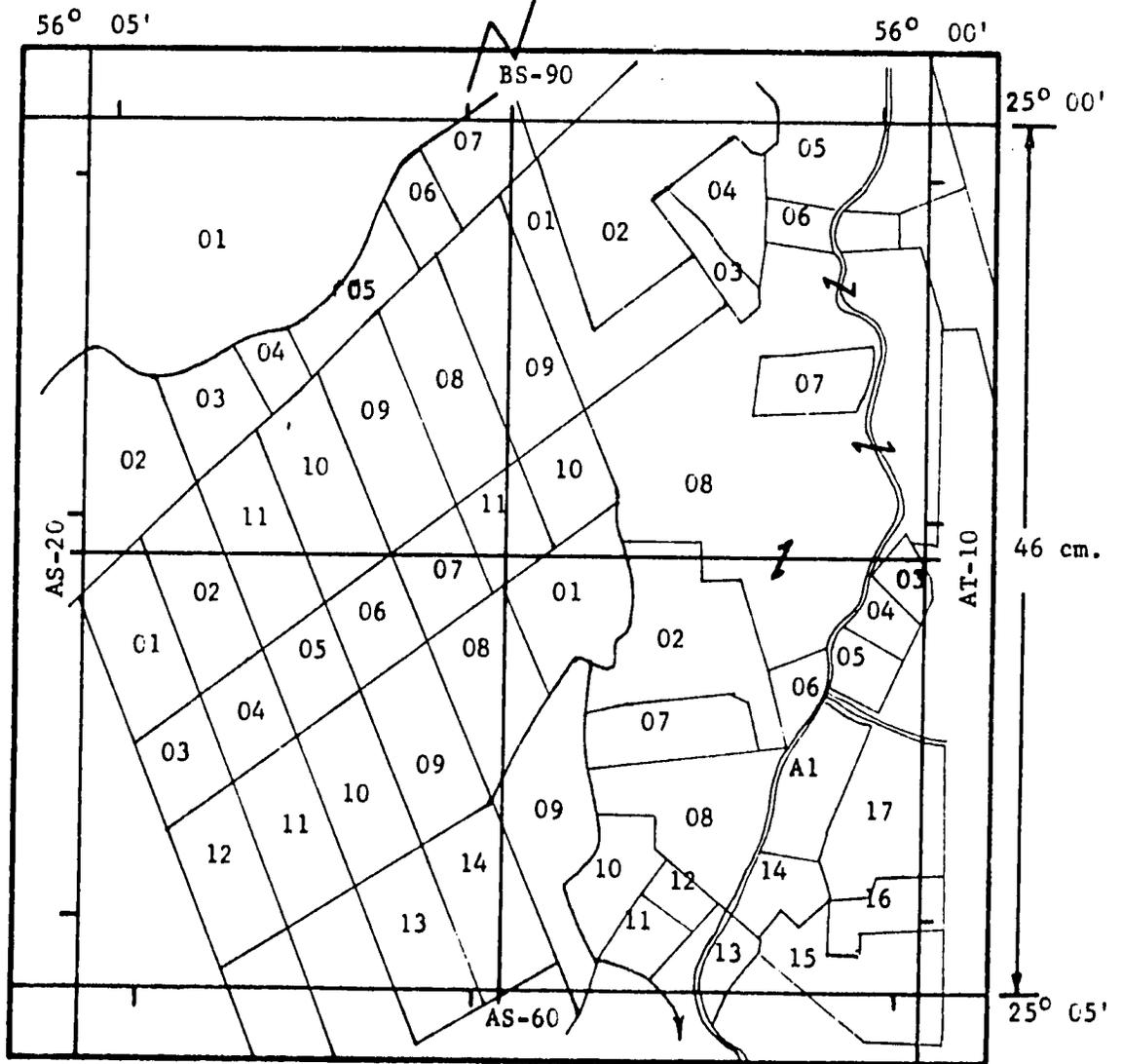
9  
 8  
 7  
 6  
 5  
 4  
 3  
 2  
 1  
 0

TWO DIGIT  
 NUMERICAL CODE  
 FOR URBAN ZONES

0 1 2 3 4 5 6 7 8 9

1:20,000 SCALE CADASTRAL PLAN NO. AS 30  
WITH PROPERTIES NUMBERED ACCORDING TO 1:10,000 SCALE MAP  
FORMAT

GRID TICKS OF PLANE COORDINATES  
ON CONFORMAL PROJECTION



A1 identifies area of small land parcels (minifundios)  
and special inset map No. AS 34 A1

## TECHNICAL ASSISTANCE REQUIREMENTS

As explained in Annex II, Exhibit 3, the project involves a series of interrelated activities that will result in the creation, manipulation and up-dating of various records and files. These records include:

1. Cadastral plans
2. Land parcel records
3. Valuation records
4. IBM card records
5. Tax receipts
6. Property owner indexes
7. Existing land survey plans and plats.

With the exception of those activities required for the compilation of the cadastral plans and for the IBM card processing, the activities involve mostly clerical operations, which will be carried out according to procedures outlined in the detailed work plan.

Short term technical assistance will be required for the non-clerical activities in order to train the personnel. The principal activities include:

1. The processing and enlarging of aerial photography to be used for the field identification and delineation of land parcel boundaries.
2. The techniques and procedures involved in using the aerial photography for the identification and delineation of the parcel boundaries.
3. The techniques and procedures designed to compile and draft cadastral plans using the field annotated photographs.
4. The procedures required for the data processing of IBM cards to produce the tax receipts and to maintain the status of tax payments etc.

Since the project does involve a large number of inter-related activities, the overall operation will require a fairly high degree of planning and organization. This applies particularly to the field operation, which involves the movement, coordination and logistics support of fifty field parties (in 36 rural and 14 urban). Therefore, the Property Tax Office will require the services of a field supervisor, who has experience in managing field survey operations in Latin America.

## SUMMARY OF TECHNICAL ASSISTANCE REQUIREMENTS

1. FIELD OPERATIONS ADVISOR - 30 man months.

The success of the project is dependent upon a field operation that is carried out with a high degree of planning, organization and supervision. The logistics involved (i) in obtaining and distributing the aerial photographs to the field crews, (ii) of planning around dead-lined vehicles, (ii) of hiring boats and horses to work in isolated areas, (ii) of training replacement personnel etc. cannot be underestimated. Also the field operation must be flexible to meet unexpected and changing conditions on a week by week and day by day basis. The field operations advisor will assist the Chief of Field Operations and the field supervisor (i) in planning and organizing the field work; (ii) in training the field crews; and (ii) in carrying out the field operations. The thirty months of assistance includes four months prior to initiating the field work, in order to develop the detailed work plan for carrying out the field operations and for selecting and training the field supervisors.

2. PHOTO LAB SPECIALIST - 3 man months

This specialist will assist in the installation of the photo lab equipment in the IGM facilities and will train the lab personnel how to use the equipment and how to process the materials on a production schedule to meet field operation needs. This will include:

- a. Making contact prints
- b. Making photo enlargements
- c. Making disposition plates
- d. Making contact positives of the photogrammetric manuscripts

In addition this specialist will inspect the new photography flown to assure that it meets the required specifications for mapping purposes.

3. PROPERTY DELINEATION SPECIALIST - 3 man months

This specialist will train the rural field crews in the techniques of using aerial photography for the identification and delineation of rural property boundaries. He will also assist in the planning and organization of the field work. In addition, he will assist in the training of urban crews in the techniques of urban delineation using tape traverses.

4. CARTOGRAPHER - 3 man months

As explained in Annex II, Exhibit 7, it is proposed to use the photogrammetric manuscripts produced by IGM as the map base for compiling and drafting the rural cadastral plans. The cartographic specialist will train the drafting personnel of the Property Tax Office on the techniques and procedures for:

- (a) transferring the property boundaries from the field annotated photographs to the base manuscripts
- (b) plotting a plane coordinate grid on the manuscripts

- (c) drafting the cadastral plans on a stable base overlay, according to a standard map format
- (d) numbering the land parcels
- (e) calculating the area of each land parcel

5. DATA SYSTEMS SPECIALIST - 3 man months

As explained in Annex II, Exhibit 3, the ADP Section will be filing, processing and maintaining about 1,800,000 punched cards. The program systems analyst will set-up the procedures for maintaining these cards and for making statistical listings. The analyst will also investigate the cost benefits of putting all this data on disk packs in order to rent IBM computer time to print out tax receipts, lists, etc.

Due to the nature of the technical assistance requirements, it is proposed to negotiate a loan PASA with RDO-OAS and DMA-IAGS for the services of qualified bilingual personnel, who have had ample experience in this type of work in Latin America. The break out of the positions are as follows:

- 1. RDO-OAS
  - a. Field Operations Advisor-30 man months
  - b. Data Systems Specialist-3 man months
  - Total - 33 man months
- 2. DMA-IAGS
  - a. Photo Lab Specialist-3 man months
  - b. Cartographer-3 man months
  - c. Property Delineation Specialist-3 man months

In addition to the above technical assistance, in-country assistance from DMA-IAGS is available for the field control and photogrammetry phase required to produce the base manuscripts for the cadastral plans. Moreover, the present AID-IRS Tax Advisor will be available to provide assistance in setting up the property tax records and in correlating the tax collection activities, which have been identified as inputs on the flow diagram of project activities: (See Annex 2, Exhibit 3).

SCHEDULE FOR TECHNICAL ASSISTANCE

	1974	1975	1976
1. FIELD OPERATIONS ADVISOR	30 Mos.		
2. PHOTO LAB SPECIALIST	3 Mos.		
3. PROPERTY DELINEATION SPECIALIST	3 Mos.		
4. CARTOGRAPHER	3 Mos.		
5. DATA SYSTEMS SPECIALIST	1 Mo.	1 Mo.	1 Mo.

SUMMARY OF TECHNICAL ASSISTANCE COSTS

	MONTHLY SALARY RATE (1)	NUMBER OF MONTHS	TOTAL SALARY COSTS	PER DIEM AND ALLOWANCES	INTERNATIONAL TRAVEL	TOTAL COSTS	1974	1975	1976
1. FIELD OPERATIONS ASSISTANT	2,300	30	75,000	16,500(2)	16,000	(3)107,500	34,400	36,700	36,400
2. FOOD LAB SPECIALIST	2,200	3	6,600	1,800	1,100	9,500	9,500	--	--
3. PROPERTY EVALUATION SPECIALIST	1,800	3	5,400	1,800	1,100	8,300	8,300	--	--
4. CARBOHYDRATE	1,900	3	5,700	1,800	1,100	8,600	8,600	--	--
5. BAKING SYSTEMS SPECIALIST	2,300	3	6,900	1,800	1,650	10,350	3,450	3,450	3,450
SUB-TOTALS	--	42	99,600	23,700	20,950	144,250	64,250	40,150	39,850
					CONTINGENCY	3,750	3,750	850	1,150
					TOTALS	150,000	68,000	41,000	41,000

- (1) Includes agency service charge of 4.2% long term and 2.2% short term  
 (2) Includes housing allowance  
 (3) Includes FIS movement of household goods

SUMMARY OF EQUIPMENT COSTS

	DOLLAR COSTS		LOCAL CURRENCY COSTS		DISTRIBUTION BY YEAR				
	\$	L.C.	\$/E	1974	1975	1976	1977	1978	
1. Field Section	5,775	3,108,400	24,670	7,394	5,580	6,108	5,584	-	
2. Admin. Section	3,564	188,300	1,495	1,495	-	-	-	-	
3. Office Files Section	37,164	186,900	1,486	1,486	-	-	-	-	
4. Data Processing Section	11,900	-	-	-	-	-	-	-	
5. Drafting Section	38,071	160,700	1,275	1,275	-	-	-	-	
6. Photo Lab.	29,051	-	-	-	-	-	-	-	
7. Tax Collection Division	11,209	489,700	3,884	-	1,360	842	842	840	
8. Facilities	5,071	-	-	-	-	-	-	-	
9. Registry Office	2,700	-	-	-	-	-	-	-	
<b>SUB TOTAL:</b>	<b>144,505</b>	<b>4,134,000</b>	<b>32,810</b>	<b>11,650</b>	<b>6,940</b>	<b>6,950</b>	<b>6,430</b>	<b>840</b>	
<b>FREIGHT CHARGE(32%)</b>	<b>45,495</b>								
<b>TOTAL:</b>	<b>190,000</b>								

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SUMMARY OF MATERIALS REQUIRED

1. Punch Cards	\$ 2,900
2. Photographic	4,400
3. Cartographic and Reproduction	23,000
4. Vehicle Spare Parts	26,700
SUB-TOTAL	57,000
AIR FREIGHT	23,000
<u>TOTAL</u>	<u>\$ 80,000</u>

DISTRIBUTION BY YEAR

1974	1975	1976	1977	1978
30,000	20,000	15,000	10,000	5,000

ADMINISTRATION SECTION

DOLLAR COSTS

<u>ITEM</u>	<u>NO</u>	<u>UNIT COST</u>	<u>TOTAL</u>	<u>\$//E</u>
1. Typewriter	4	\$ 270	\$ 1,080	
2. Typewriter (long carriage)	1	320	320	
3. Adding Machine	1	120	120	
4. Desk Calculator	2	110	220	
5. File Cabinets (Legal size w/lock)	10	150	1,500	
		Sub-Total	\$ 3,240	
		Price change 10%	324	
		TOTAL	\$ 3,564	

LOCAL CURRENCY COSTS

1. Desk Large	3	27,000	81,000	642.85
2. Chair	3	7,400	22,200	176.19
3. Desk Medium	3	15,000	45,000	357.14
4. Chair	3	4,700	14,100	111.90
5. Desk Table	4	5,000	20,000	158.73
6. Chairs	4	1,500	6,000	47.61
		TOTAL	188,300	1,494.44

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FIELD SECTION

DOLLAR COSTS

<u>ITEM</u>	<u>NO</u>	<u>UNIT COST</u>	<u>TOTAL</u>
1. Clip Boards 9" x 15"	72	0.75	54.00
2. Draw Boards 23" x 26"	40	4.40	176.00
3. Rapidograph Pens	80	7.00	560.00
4. Plastic Triangle - Ruler	40	0.50	20.00
5. Ballpoint Pens	520	0.20	104.00
6. Protractor	40	0.35	14.00
7. Protractor	16	0.50	8.00
8. Tapes, 15 meter	40	6.00	240.00
9. Tape Refills	80	3.60	288.00
10. Tapes, 20 meter	32	16.35	376.05
11. Tape Refills	64	11.15	713.60
12. Lensatic Compass	40	5.00	200.00
13. Engineer Compass	16	47.50	760.00
14. Engineer Rule	16	4.25	68.00
15. Shoulder Bags	112	4.00	448.00
16. Pin Vice	80	0.60	48.00
17. Pocket Stereoscopes	40	15.75	630.00
18. Mechanical Pencils	32	4.00	128.00
19. Pocket Lead Pointer	16	2.75	44.00
20. Millimeter Paper (packs of 100 sheets)	80	4.25	340.00
		Sub-Total	5,249.65
		(Price increase) 10% Contingency	524.96
		TOTAL	5,774.61

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FIELD SECTION

LOCAL CURRENCY COSTS

<u>ITEM</u>	<u>NO</u>	<u>UNIT COST</u>	<u>TOTAL</u>	<u>\$//E</u>
1. Work Tables	60	2,000	120,000	952.38
2. Stools	60	700	42,000	333.33
3. Uniforms	1,320	1,220	1,610,400	12,780.95
4. Boots	440	900	896,000	7,111.11
5. Helmets	220	600	132,000	1,047.61
6. Rain Suits	440	700	308,000	2,444.44
		<b>TOTAL</b>	<b>3,108,400</b>	<b>24,669.82</b>
				<b>24,670</b>

DISTRIBUTION OF LOCAL COSTS

	<u>FIRST YEAR</u>	<u>SECOND YEAR</u>	<u>THIRD YEAR</u>	<u>4TH YEAR</u>
1	952	-	-	-
2	333	-	-	-
3	3,195	3,195	3,195	3,195
4	1,778	1,778	1,778	1,778
5	524	-	524	-
6	612	611	611	611
<b>TOTAL</b>	<b>7,394</b>	<b>5,584</b>	<b>6,108</b>	<b>5,584</b>
				<b>24,670</b>

UNIT COSTS  
 1. 952.38  
 2. 333.33  
 3. 12,780.95  
 4. 7,111.11  
 5. 1,047.61  
 6. 2,444.44  
 TOTAL 24,669.82

OFFICE SECTION

DOLLAR COSTS

<u>ITEM</u>	<u>NO</u>	<u>UNIT PRICE</u>	<u>TOTAL</u>	<u>\$/E</u>
1. Desk Calculators	25	110	2,750	
2. Typewriters Manual	10	270	2,700	
3. Index Files (8 drawer/42,000 cards)	15	245	3,675	
4. File Cabinets (5 drawer/w lock)	140	135	18,900	
5. Map Files (25 drawer unit)	9	640	5,760	
		Sub - Total	33,785	
		Price Increase 10%	3,379	
		TOTAL	37,164	

LOCAL CURRENCY COSTS

1. Desk	1	15,000	15,000	119
2. Desk Chair	1	4,700	4,700	37
3. Work Tables	44	3,000	132,000	1,047
4. Chairs	44	800	35,200	279
		TOTAL	186,900	1,482

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DRAFTING SECTION

DOLLAR COSTS

<u>ITEM</u>	<u>NO</u>	<u>UNIT COST</u>	<u>TOTAL</u>
1. Zoom Transfer Scope	3	\$ 4,700	14,100
2. Coordinatorgraph	1	3,840	3,840
3. Map Projector	1	2,225	2,225
4. Drafting Tables	12	165	1,980
5. Light Tables	4	210	840
6. Map Files (25 drawer)	9	640	5,760
7. Filing Cabinets	8	135	1,080
8. Drafting Lamps	12	32	384
9. Polar Planimeters	3	110	330
10. Desk Calculators	4	125	500
11. Calculator (Trig Functions)	1	380	380
12. Ozilid Copy Machine - 42"	1	985	985
13. Ozilid Copy Machine - 15"	1	450	450
14. Rapidograph Pen Sets	18	21	378
15. Drafting Machines	8	66	528
16. Lettering Guides	16	6	96
17. Drawing Sets	8	34	272
18. Pen Cleaner	1	60	60
19. Mechanical Pencils	4	4	16
20. Point Sharpener	1	6	6
21. Misc. Supplies	Var.	400	400
		Sub-Total	34,610
		Price Increase 10%	3,461
		TOTAL	38,071

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DRAFTING'S SECTION

LOCAL CURRENCY COSTS

<u>ITEM</u>	<u>NO</u>	<u>UNIT COSTS</u>	<u>TOTAL</u>	<u>\$/E</u>
1. Desk	1	15,000	15,000	
2. Desk/Chair	1	4,700	4,700	
3. Tables/ Large	4	6,000	24,000	
4. Tables/ Med.	7	5,000	35,000	
5. Chairs	12	1,500	18,000	
6. Drafting Stools	16	4,000	64,000	
		<b>TOTAL</b>	<b>160,700</b>	<b>1,275</b>

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PHOTO LAB

DOLLAR COSTS

<u>ITEM</u>	<u>NO</u>	<u>UNIT COST</u>	<u>TOTAL</u>
1. Contact Printer	1	420	420
2. Print Processor	1	540	540
3. Print Dryer	1	1,320	1,320
4. Water Filter System	1	270	270
5. Replacement Filters	20	8	160
6. Temp. Control Sinks	3	550	1,650
7. Enlarger - Rectifier	1	18,250	18,250
8. Contact Vacuum Frame	1	1,900	1,900
9. Densitometer	1	825	825
10. Exhaust Fans	2	65	130
11. Air Conditioners (Reverse cycle)	3	315	945
		Sub-Total	26,410
		Price Increase 10%	2,641
		<b>TOTAL</b>	<b>29,051</b>

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DATA PROCESSING SECTION  
 IBM EQUIPMENT RENTAL  
 (IN U.S. \$)

ITEM	NO.	MONTHLY RENT	NO. OF MONTHS	TOTAL
1. Verifier	1	100	57	5,700
2. Classifier	1	70	57	3,990
3. Collator	1	115	57	6,555
4. Tabulator	1	950	57	54,150
SUB-TOTAL		1,235		70,395
		Installation \$200 each		<u>805</u>
		TOTAL		71,200

DISTRIBUTION BY YEAR

1974	1975	1976	1977	1978
11,920	14,820	14,820	14,820	14,820

EQUIPMENT FOR FACILITIES

DOLLAR COSTS

ITEM	NO.	UNIT COST	TOTAL
Air Conditioners (Reverse Cycle)	10	380	3,800
Water Coolers	2	245	490
Dehumidifiers	2	160	<u>320</u>
SUB-TOTAL			4,610
PRICE INCREASING 10%			<u>461</u>
<u>TOTAL</u>			<u>5,071</u>

DATA PROCESSING SECTION

DOLLAR COSTS

ITEM	NO.	UNIT COST	TOTAL
1. Punch Cards (box of 10,000)	150	\$ 19.25	\$ 2,888
2. Card Files (14 drawer/ 50,000 cards)	40	286.00	11,440
3. Printout Files	2	230.00	460
<u>TOTAL</u>			<u>\$ 14,788</u>

EQUIPMENT FOR TAX COLLECTION DIVISION

DOLLAR COSTS

ITEM	NO.	UNIT COST	TOTAL
1. Teller Machines	2	3,870	7,740
2. File Cabinets	10	245	<u>2,450</u>
SUB-TOTAL			10,190
PRICE INCREASE 10%			<u>1,019</u>
<u>TOTAL</u>			<u>11,209</u>

LOCAL CURRENCY COSTS

ITEM	NO.	UNIT COST	TOTAL
1. Desks	11	15,000	165,000
2. Chairs	11	4,700	51,700
3. Desk Tables	42	5,000	210,000
4. Chairs	42	1,500	<u>63,000</u>
<u>TOTAL</u>			<u>489,700</u>
\$/E			3,886

DISTRIBUTION BY YEAR

	1975	1976	1977	1978
	171,400	106,100	106,100	106,100
\$/E	1,360	842	842	842

VEHICLE REQUIREMENTS

1. TYPES OF VEHICLES

SENEPA, the malaria control agency, has carried out field operations in each of the 166 Districts throughout the project area. Based on the experience obtained, SENEPA recommends that the Project obtain both four wheel jeep-type vehicles and cross-country motor bikes in order to effectively carry out the rural cadastral operation.

- (i) The four-wheel drive vehicles would be used for field parties working in areas accessible by roads.
- (ii) The cross-country motor bikes would be used by field parties working in areas accessible only by trails.

In addition it is considered that the urban cadastral operation can be carried out with buses, which would transport the personnel from one town to another, as they advance from one district to another.

2. NUMBER OF VEHICLES REQUIRED

a. Jeep-type vehicles

1) Project Director	1
2) Chief, Field Division	1
3) Chief, Rural Operation	1
4) Chief, Urban Operation	1
5) Rural Field Supervisor	6
6) Rural delineators	18
7) Field maintenance	2
<u>TOTAL:</u>	<u>30</u>

b. <u>Motor bikes</u>		
1) Rural delineators (18 x 2)		36
2) Field Maintenance		4
3) Cadastral Maintenance (One per Department)		14
		—
	<u>TOTAL:</u>	<u>54</u>
c. <u>Busses (15-18 passengers)</u>		
1) Urban operations		<u>2</u>
	<u>TOTAL:</u>	<u>2</u>
	<u>GRAND TOTAL:</u>	<u>86</u>

3. ESTIMATED COSTS \* (CIF)

a. <u>Jeep Type Vehicles</u>	
\$ 3,980 x 30	\$ 119,400
b. <u>Motor Bikes</u>	
\$ 658 x 54	35,532
(Price includes helmets)	
c. <u>Busses</u>	
\$ 7,500 x 2	<u>15,000</u>
	<u>TOTAL</u> 169,932
	<u>USE</u> 170,000

\* Costs based on single unit price delivered to Asunción.

PROJECT FACILITY REQUIREMENTS

1. PHOTO LAB

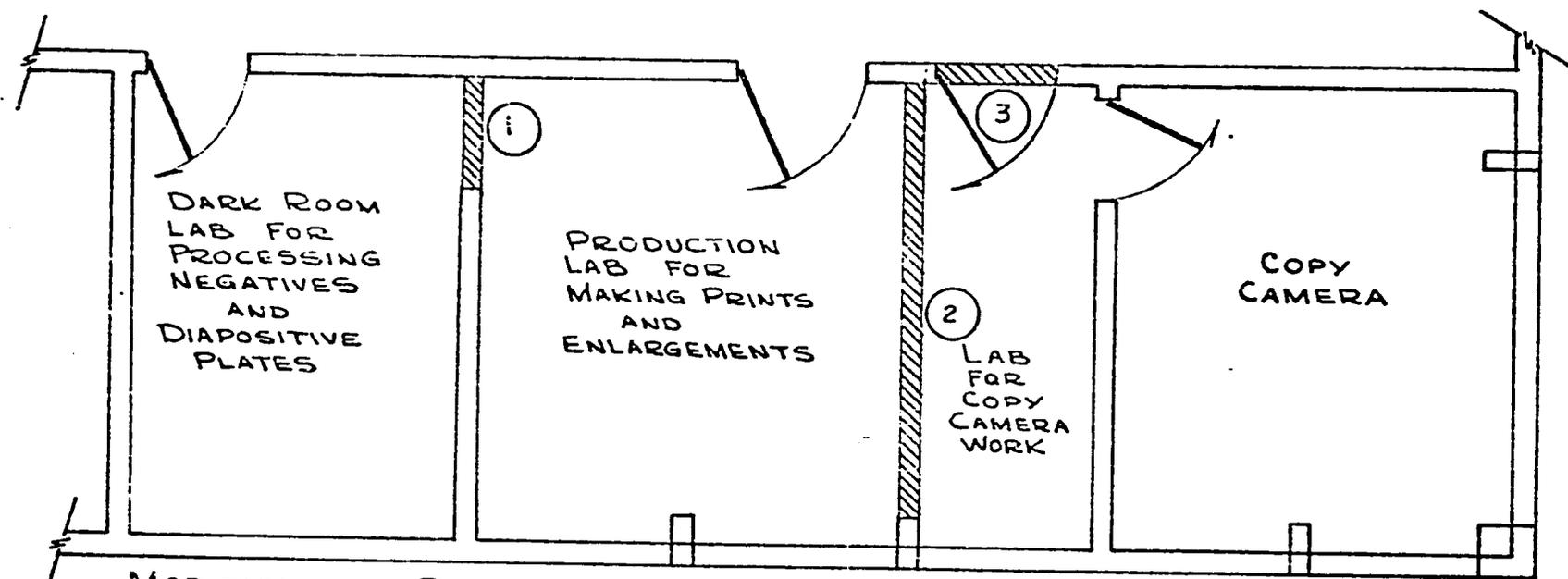
The Military Geographic Institute (IGM) is presently constructing a new operations building that is scheduled for completion in December 1973. Since this building includes photo lab facilities, it is proposed to equip this photo lab to produce aerial photographic products required to carry out the cadastral field operations and to complete the cadastral plans.

In order to fulfill the requirements of both the IGM and the Property Tax Office, some modifications to the original floor plan have been recommended by a Photo Lab Technician from DMA-IAGS. The proposed changes are shown on the attached floor plan. The cost will be minimal, since the lab is still under construction.

The completed lab facilities, fully equipped to support project operations, will also provide the IGM with the means to support other GOP projects and programs requiring aerial photographic products.

Attachment: As noted

FLOOR PLAN OF IGM PHOTO LAB



MODIFICATIONS REQUIRED:

- ① CLOSE OFF DOOR BETWEEN DARK ROOM AND LAB WITH SUBDUED LIGHT.
- ② BUILD WALL BETWEEN COPY CAMERA AND PRODUCTION LAB.
- ③ OPEN DOOR TO COPY CAMERA.

## PROJECT FACILITY REQUIREMENTS

### 2. PROPERTY TAX OFFICE

The Property Tax Office occupies one-half of a large one-floor building that used to be the National Opera House. Although the building has ample floor space, the distribution of the available space will not adequately accommodate all the personnel required to carry out the project activities. Since the rooms are over twenty (20) feet high, it is proposed to build a second floor over the rooms along the outside wall. Part of this modification has already been accomplished (See attached plan). This will provide about 400 sq. meters of floor space for project activities that are in addition to the present ongoing activities.

Since the project personnel will be working in the afternoons, as well as the mornings, it is proposed to aircondition the area to be occupied by the project personnel, particularly those working in the drafting section. In addition, two temperature and humidity controlled rooms will be required for the IBM Data Processing Section and the store room. This is to protect the IBM cards and the photographic-cartographic materials.

### CONSTRUCTION COSTS

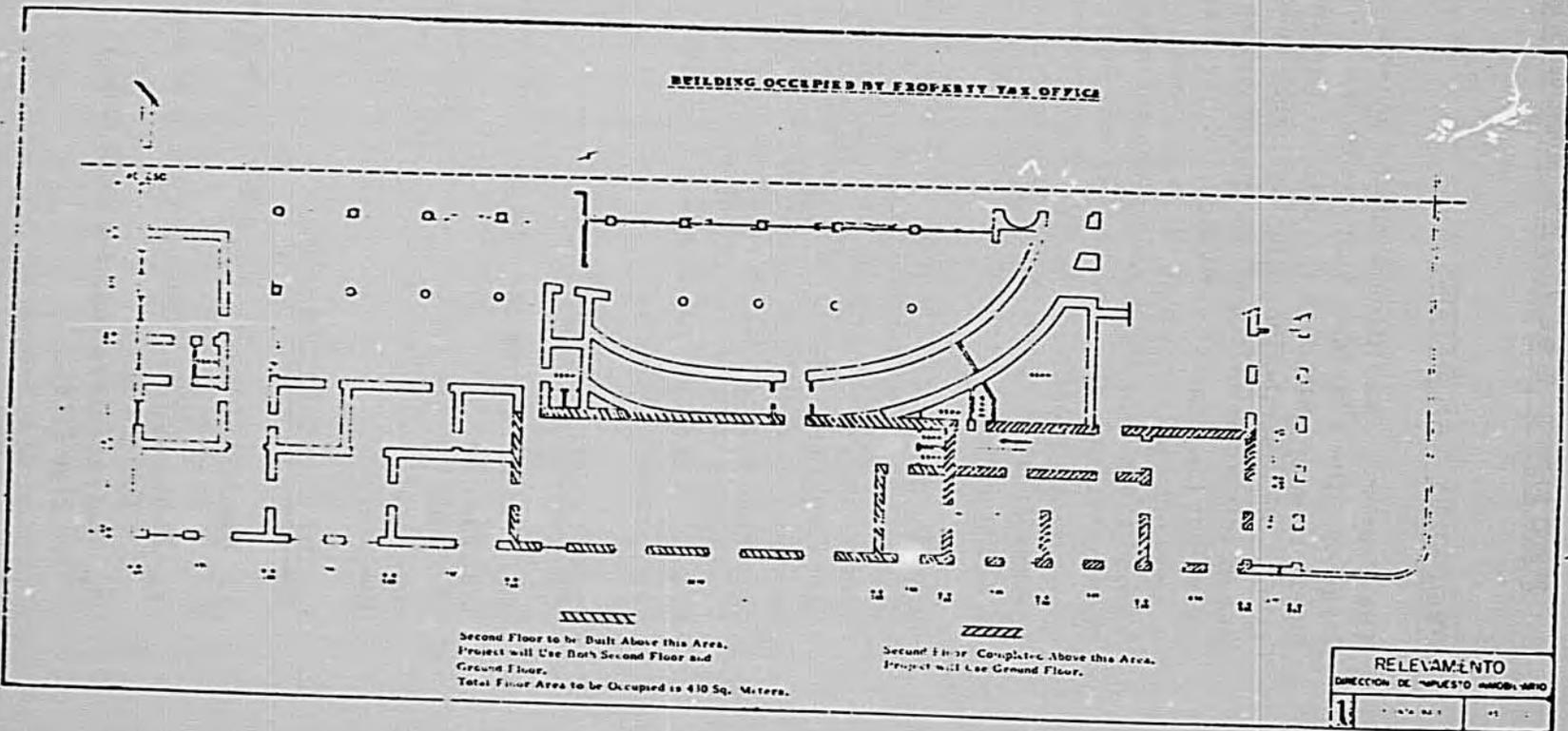
The cost for adding the additional second-floor facilities has been estimated at C/ 2.0 million (\$ 15, 873) by the contractor who did the previous modifications. This will be a GOP contribution to the project.

### EQUIPMENT REQUIRED

1. Air Conditioners (18, 000 to 21, 000 BTU)  
10 at \$ 380.
2. Dehumidifiers (IBM Section & Storeroom)  
2 at \$ 160.
3. Watercoolers (one for each floor)  
2 at \$ 245.

Attachment: As noted

BUILDING OCCUPIED BY PROPERTY TAX OFFICE



Second Floor to be Built Above this Area.  
Project will Use Both Second Floor and  
Ground Floor.  
Total Floor Area to be Occupied is 410 Sq. Meters.

Second Floor Complete Above this Area.  
Project will Use Ground Floor.

RELEVAMENTO	
DIRECCION DE IMPUESTO MOBILIARIO	

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SUMMARY OF PERSONNEL COSTS

(IN \$/E)

	AMOUNT	% OF TOTAL PERS.	% OF TOTAL \$/E	% OF TOTAL PROJECT
1. GOP				
a. Project Salaries	894,854	42.2	34.4	25.6
b. Departmental Offices	133,921	6.3	5.2	3.8
TOTAL GOP	1,028,775	(48.5)	(39.6)	(29.4)
2. AID				
a. Overtime Pay	484,120	22.8	18.6	13.8
b. Field Per Diem	608,667	28.7	23.4	17.4
TOTAL AID	1,092,787	(51.5)	(42.0)	(31.2)
3. TOTAL SALARIES	1,512,895	(71.3)	(58.2)	(43.2)
4. TOTAL PERSONNEL COSTS	2,121,562	100.0	81.6	60.6
	(2,600,000)	100.0	---	
	(3,500,000)	100.0		

PROJECT DIRECTORS OFFICE AND ADMINISTRATION DIVISION

POSITION	CATEGORY	NO OF		TOTAL	OVERTIME	TOTAL	TOTAL	NO OF	TOTAL	ONGOING	
		PERS. P.	A.SAL.								FOR MO.
<u>DIRECTORS OFFICE</u>											
1. Project Director	D-2	-	1	38,900	38,900	19,450	19,450	58,350	58	3,384,300	-
2. Bilingual Secretary	D-6	-	1	22,100	22,100	11,050	11,050	33,150	58	1,922,700	-
3. Clerk Typist	A-3	1	-	10,500	-	5,250	5,250	5,250	58	304,500	609,000
4. Office Clerk	A-4	-	1	9,000	9,000	4,500	4,500	13,500	58	783,000	-
					(70,000)		(40,250)	(110,250)		(6,394,500)	
<u>ADMINISTRATION DIVISION</u>											
5. Division Chief	D-3	1	-	34,800	-	17,400	17,400	17,400	58	1,009,200	2,018,400
6. Secretary	A-1	-	1	17,900	17,900	8,950	8,950	26,850	58	1,557,300	-
7. Driver	S/C	-	1	9,000	9,000	4,500	4,500	13,500	52	702,000	-
8. Office Boy's	S/C	-	4	3,000	12,000	1,500	6,000	18,000	52	936,000	-
9. Janitors	S/C	-	2	2,500	5,000	1,250	2,500	7,500	58	435,000	-
					(43,900)		(39,350)	(83,250)		(4,639,500)	
<u>PERSONNEL SECTION</u>											
10. Section Chief	D-6	-	1	22,100	22,100	11,050	11,050	33,150	56	1,856,400	-
11. Bookkeeper	A-1	-	1	17,900	17,900	8,950	8,950	26,850	56	1,503,600	-
12. Office Clerks	A-4	-	2	9,000	18,000	4,500	9,000	27,000	56	1,512,000	-
					(58,000)		(29,000)	(87,000)		(4,872,000)	
<u>PROCUREMENT SECTION</u>											
13. Section Chief	D-6	-	1	22,100	22,100	11,050	11,050	33,150	58	1,922,700	-
14. Clerk Typist	A-5	-	1	8,400	8,400	4,200	4,200	12,600	56	705,600	-
15. Warehouse Clerk	A-1	-	1	17,900	17,900	8,950	8,950	26,850	54	1,449,900	-
16. Asst. Clerk	A-6	1	-	8,000	-	4,000	4,000	4,000	52	208,000	400,000
					(48,400)		(28,200)	(76,600)		(4,286,200)	
				220,300			136,800	357,100		20,192,200	
		3	18	53,300			-	53,300		3,027,400	

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FIELD DIVISION

POSITION	CATEGORY	N° OF PERS.		MO. SAL.	TOTAL FOR MO.	OVERTIME PAY	TOTAL FOR MO.	TOTAL MON/SAL.	N° OF MONTHS	TOTAL	ONGOING
		P.	A.								
1. Division Chief	D-4	1	-	30,000	-	15,050	15,050	15,050	54	812,700	1,625,400
2. Secretary	A-1	-	1	17,900	17,900	8,950	8,950	26,850	54	1,449,900	-
<u>RURAL SECTION</u>											
3. Section Chief	D-6	1	-	22,100	-	11,050	11,050	11,050	53	585,650	1,171,300
4. Field Supervisors	A-1	-	6	17,900	107,400	8,950	53,700	161,100	51	8,216,100	-
5. Delineators	A-2	5	31	13,900	430,900	6,950	250,200	681,100	51	34,736,100	3,544,500
6. Asst. Delineators	A-4	3	33	9,000	297,000	4,500	162,000	459,000	51	23,409,000	1,377,000
<u>URBAN SECTION</u>											
7. Section Chief	D-6	1	-	22,100	-	11,050	11,050	11,050	53	585,650	1,171,300
8. Field Supervisors	A-1	-	2	17,900	35,800	8,950	17,900	53,700	51	2,738,700	-
9. Delineators	A-2	-	14	13,900	194,600	6,950	97,300	291,900	51	14,886,900	-
10. Asst. Delineators	A-4	-	14	9,000	126,000	4,500	63,000	189,000	51	9,639,000	-
		101	-		1,209,600	-	690,200	1,899,800		97,059,700	-
		11			170,800	-	-	170,800		-	8,889,500

MAP DIVISION

POSITION	CATEGORY	NO OF		MO. SAL.	TOTAL FOR MO.	OVERTIME PAY	TOTAL FOR MONTH	TOTAL MON/SAL.	NO OF MONTHS	TOTAL	TOTAL ONGOING
		P.	A.								
1. Division Chief	D-4	-	1	30,100	30,100	15,050	15,050	45,150	54	2,438,100	-
2. Secretary	A-1	1	-	17,900	-	8,950	8,950	8,950	54	483,300	966,600
<u>PREPARATION SECTION</u>											
3. Section Chief	A-1	-	1	17,900	17,900	8,950	8,950	26,850	53	1,423,050	-
4. Office Clerks	A-5	-	3	8,400	25,200	4,200	12,600	37,800	51	1,927,800	-
<u>DRAFTING SECTION</u>											
5. Section Chief	D-6	-	1	22,100	22,100	11,050	11,050	33,150	53	1,756,950	-
6. Operators	A-3	1	4	10,500	42,000	5,250	26,250	68,250	51	3,480,750	535,500
7. Draftsman	A-4	-	15	9,000	135,000	4,500	67,500	202,500	51	10,327,500	-
8. Calculators	A-4	-	4	9,000	36,000	4,500	18,000	54,000	51	2,754,000	-
9. Photo Lab. Tech.	A-3	-	1	10,500	10,500	5,250	5,250	15,750	51	803,250	-
TOTAL ADDITIONAL					318,800		173,600	492,400		25,394,700	-
TOTAL ONGOING					28,400			28,400			1,502,100

OFFICE FILES DIVISION

<u>POSITION</u>	<u>CATEGORY</u>	<u>NO OF PERS.</u> <u>P. A.</u>	<u>MO. SAL.</u>	<u>TOTAL FOR MO.</u>	<u>OVERTIME PAY</u>	<u>TOTAL FOR MO.</u>	<u>TOTAL MON/SAL.</u>	<u>NO OF MONTHS</u>	<u>TOTAL</u>	<u>ONGOING</u>
1. Division Chief	D-4	1 -	30,100	-	15,050	15,050	15,050	54	812,700	1,625,400
2. Secretary	A-1	- 1	17,900	17,900	8,950	8,950	26,850	54	1,449,900	-
<u>PREPARATION SECTION</u>										
3. Section Chief	D-6	1 -	22,100	-	11,050	11,050	11,050	53	585,650	1,171,300
4. Typists	A-5	5 5	8,400	42,000	4,200	42,000	84,000	51	4,284,000	2,142,000
5. Office Clerks	A-7	5 -	7,600	-	3,800	19,000	19,000	51	969,000	1,938,000
<u>FILES SECTION</u>										
6. Section Chief	D-6	- 1	22,100	22,100	11,050	11,050	33,150	53	1,756,950	-
7. File Clerks	A-5	- 5	8,400	42,000	4,200	21,000	63,000	51	3,213,000	-
<u>VERIFICATION SECTION</u>										
8. Section Chief	D-6	- 1	22,100	22,100	11,050	11,050	33,150	53	1,756,950	-
9. Investigators	A-2	- 5	13,900	69,500	6,950	34,750	104,250	51	5,316,750	-
10. Verifiers	A-4	- 20	9,000	180,000	4,500	90,000	270,000	51	13,770,000	-
		38		395,600		263,900	659,500		33,914,900	-
		12		132,200			132,200			6,876,700



A. PROJECT DIRECTORS OFFICE AND ADMINISTRATION DIVISION

DISTRIBUTION BY YEAR

POSITION	BASE SALARY	OVERTIME PAY	1974 1st. YEAR	1975 2nd. YEAR	1976 3rd. YEAR	1977 4th. YEAR	1978 5th. YEAR	TOTALS
1, 2, 3, 4, 5	115,000	-	1,150,000	1,380,000	1,380,000	1,380,000	1,380,000	6,670,000
6, 9,13	-	80,150	801,500	961,800	961,800	961,800	961,800	4,648,700
10, 11, 12, 14	66,400	-	531,200	796,800	796,800	796,800	796,800	3,718,400
	-	33,200	265,500	398,400	398,400	398,400	398,400	1,859,200
15	17,900	-	107,400	214,800	214,800	214,800	214,800	966,600
	-	8,950	53,700	107,400	107,400	107,400	107,400	483,300
7, 8, 16	21,000	-	84,000	252,000	252,000	252,000	252,000	1,092,000
	-	14,500	58,000	174,000	174,000	174,000	174,000	754,000
<b>TOTAL SALARY:</b>	<b>220,300</b>	<b>-</b>	<b>1,872,600</b>	<b>2,643,600</b>	<b>2,643,600</b>	<b>2,643,600</b>	<b>2,643,600</b>	<b>12,447,000</b>
<b>TOTAL OVERTIME:</b>	<b>-</b>	<b>136,800</b>	<b>1,178,800</b>	<b>1,641,600</b>	<b>1,641,600</b>	<b>1,641,600</b>	<b>1,641,600</b>	<b>7,745,200</b>
<b>GRAND TOTAL:</b>			<b>3,051,400</b>	<b>4,285,200</b>	<b>4,285,200</b>	<b>4,285,200</b>	<b>4,285,200</b>	<b>20,192,200</b>

B. FIELD DIVISION

DISTRIBUTION BY YEAR

<u>POSITION</u>	<u>BASE SALARY</u>	<u>OVERTIME PAY</u>	<u>1st. YEAR</u>	<u>2nd. YEAR</u>	<u>3rd. YEAR</u>	<u>4th. YEAR</u>	<u>5th. YEAR</u>	<u>TOTALS</u>
1, 2	17,900	-	161,100	214,800	214,800	214,800	161,100	966,600
3, 7	-	24,000	216,000	288,000	288,000	288,000	216,000	1,296,000
		22,100	176,800	265,200	265,200	265,200	198,900	1,171,300
4, 5, 6	1,191,700	-	7,150,200	14,300,400	14,300,400	14,300,400	10,725,300	60,776,700
8, 9, 10	-	644,100	3,854,600	7,729,200	7,729,200	7,729,200	5,796,900	32,849,100
<b>TOTAL SALARY:</b>	<b>1,209,600</b>	<b>-</b>	<b>7,311,300</b>	<b>14,515,200</b>	<b>14,515,200</b>	<b>14,515,200</b>	<b>10,886,400</b>	<b>61,743,300</b>
<b>TOTAL OVERTIME:</b>		<b>690,200</b>	<b>4,257,400</b>	<b>8,282,400</b>	<b>8,282,400</b>	<b>8,282,400</b>	<b>6,211,200</b>	<b>35,315,800</b>
<b><u>GRAND TOTAL:</u></b>			<b>11,568,700</b>	<b>22,797,600</b>	<b>22,797,600</b>	<b>22,797,600</b>	<b>17,097,600</b>	<b>97,059,100</b>

C. MAP DIVISION

DISTRIBUTION BY YEAR

<u>POSITION</u>	<u>BASE SALARY</u>	<u>OVERTIME PAY</u>	<u>1974 1st. YEAR</u>	<u>1975 2nd. YEAR</u>	<u>1976 3rd. YEAR</u>	<u>1977 4th YEAR</u>	<u>1978 5th YEAR</u>	<u>TOTALS</u>
1, 2	30,100	-	240,800	361,200	361,200	361,200	301,000	1,625,400
	-	24,000	192,000	288,000	288,000	288,000	240,000	1,296,000
3	17,900	-	161,100	214,800	214,800	214,800	143,200	948,700
	-	8,950	80,550	107,400	107,400	107,400	71,600	474,350
4, 9	35,700	-	285,600	428,400	428,400	428,400	249,900	1,820,700
	-	17,850	142,800	214,200	214,200	214,200	124,950	910,350
5	22,100	-	154,700	265,200	265,200	265,200	221,000	1,171,300
	-	11,050	77,350	132,600	132,600	132,600	110,500	585,650
6, 7, 8	213,000	-	1,065,000	2,556,000	2,556,000	2,556,000	2,130,000	10,863,000
	-	111,750	558,750	1,341,000	1,341,000	1,341,000	1,117,500	5,699,250
<b>TOTAL SALARY:</b>	318,800	-	1,907,200	3,825,600	3,825,600	3,825,600	3,045,100	16,429,100
<b>TOTAL OVERTIME:</b>		173,600	1,051,450	2,083,200	2,083,200	2,083,200	1,664,500	8,965,600
<b>GRAND TOTAL:</b>			2,958,650	5,908,800	5,908,800	5,908,800	4,709,650	25,394,700

D. OFFICE FILES DIVISION

DISTRIBUTION BY YEAR

POSITION	BASE SALARY	OVERTIME PAY	1974 1st. YEAR	1975 2nd. YEAR	1976 3rd. YEAR	1977 4th YEAR	1978 5th YEAR	TOTALS
1, 2	17,900	-	107,400	214,800	214,800	214,800	214,800	966,600
	-	24,000	144,000	288,000	288,000	288,000	288,000	1,296,000
3	-	-	-	-	-	-	-	-
	-	11,050	99,450	132,600	132,600	132,600	88,400	585,650
5	-	-	-	-	-	-	-	-
	-	19,000	152,000	228,000	228,000	228,000	133,000	969,000
6, 8	44,200	-	221,000	530,400	530,400	530,400	530,400	2,342,600
	-	22,100	110,500	265,200	265,200	265,200	265,200	1,171,300
4, 7, 9, 10	333,500	-	1,000,500	4,002,000	4,002,000	4,002,000	4,002,000	17,008,500
	-	187,750	563,250	2,253,000	2,253,000	2,253,000	2,253,000	9,575,250
<b>TOTAL SALARY:</b>	<b>395,600</b>	<b>-</b>	<b>1,328,900</b>	<b>4,747,200</b>	<b>4,747,200</b>	<b>4,747,200</b>	<b>4,747,200</b>	<b>20,317,700</b>
<b>TOTAL OVERTIME:</b>	<b>-</b>	<b>263,900</b>	<b>1,069,200</b>	<b>3,166,800</b>	<b>3,166,800</b>	<b>3,166,800</b>	<b>3,027,600</b>	<b>13,597,200</b>
<b>GRAND TOTAL:</b>			<b>2,398,100</b>	<b>7,914,000</b>	<b>7,914,000</b>	<b>7,914,000</b>	<b>7,774,800</b>	<b>33,914,900</b>

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DEPARTMENTAL PROPERTY TAX OFFICES  
(TAX COLLECTION AND CADASTRAL MAINTENANCE)

PERSONNEL	CATEGORY	N° OF PERS.		BASIC SALARY	ADDITIONAL FUNDS -MONTH
		P	A		
Tax Agents	A-2	5	9	13,900	125,100
Delineators	A-2	-	14	13,900	194,600
Office Clerks	A-6	-	28	8,000	224,000
Janitors	S/C	-	14	3,000	42,000
<b>TOTAL:</b>					<b>585,700</b>
					(\$/E 4,648)

	DISTRIBUTION BY YEAR				TOTAL
	1975	1976	1977	1978	
Alto Paraná	561,600	561,600	561,600	561,600	2,246,400
Bajo Paraná	561,600	561,600	561,600	561,600	2,246,400
Guairá	296,100	394,800	394,800	394,800	1,480,500
Caazapá	327,600	561,600	561,600	561,600	2,012,400
Caaguazú	140,400	561,600	561,600	561,600	1,825,200
Itapúa	-	296,100	394,800	394,800	1,085,700
Misiones	-	327,600	561,600	561,600	1,450,800
Ñeembucú	-	197,400	394,800	394,800	987,000
San Pedro	-	-	561,600	561,600	1,123,200
Amambay	-	-	394,800	394,800	789,600
Concepción	-	-	296,100	394,800	690,900
Paraguari	-	-	-	514,800	514,800
Cordillera	-	-	-	280,800	280,800
Central	-	-	-	140,400	140,400
<b>TOTAL:</b>	<b>1,887,300</b>	<b>3,462,300</b>	<b>5,244,900</b>	<b>6,279,600</b>	<b>16,874,100</b>
\$/E	14,978	27,479	41,626	49,838	133,921

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IGM PHOTO LAB AND PHOTOGRAMMETRY SECTION

POSITION	CATEGORY	N° OF PERS. P.	N° OF PERS. A.	MO. SAL.	TOTAL FOR MO.	OVERTIME PAY	TOTAL FOR MO.	TOTAL MON/SAL.	N° OF MONTHS	TOTAL	ONGOING
<u>PHOTO LAB</u>											
1. Photo Lab Tech.	TTE *	1	-	12,040	-	-	-	-	48	-	-
2. Lab. Assistants	S/C	2	1	5,400	5,400	2,700	8,100	13,500	48	648,000	518,400
<u>PHOTOGRAMMETRY</u>											
3. Section Chief	TTE *	1	-	18,060	-	-	-	-	48	-	-
4. Photogrammetrists	TTE *	3	-	12,040	-	-	-	-	48	-	-
5. Compilers - 1	S/C	3	6	5,400	32,400	2,700	24,300	56,700	48	2,721,600	777,600
6. Compilers - 2	S/C	3	-	4,730	-	2,365	7,095	7,095	48	340,560	681,120
TOTAL ADDITIONAL:		6		-	37,800	-	39,495	77,295	48	340,560	681,120
TOTAL ONGOING:		10		-	41,190	-	-	41,190	-	3,710,160	1,977,120

\* Basic Mapping Program

DISTRIBUTION BY YEAR

POSITION	BASE SALARY	OVERTIME PAY	1974	1975	1976	1977	1978	TOTAL
			1st. YEAR	2nd. YEAR	3rd. YEAR	4th. YEAR	5th. YEAR	
2, 5, 6	37,800	-	378,000	453,600	453,600	453,600	75,600	1,814,400
		39,495	394,950	473,940	473,940	473,940	78,990	1,895,760
<u>TOTAL:</u>			<u>772,950</u>	<u>927,540</u>	<u>927,540</u>	<u>927,540</u>	<u>154,590</u>	<u>3,710,160</u>

SUMMARY OF GOP FUNDS

	<u>LC</u>	<u>\$/E</u>	<u>%</u>
1. Personnel Salaries	112,751,500	894,854	74.6
2. Departmental Offices	16,874,100	133,921	11.1
3. Social Security (Field Personnel)	8,949,878	71,030	6.0
4. Vehicle Insurance	2,352,000	18,667	1.5
5. Facilities	2,000,000	15,873	1.3
<u>SUB -TOTAL:</u>	142,927,478	1,134,345	-
Contingency	8,272,522	65,655	5.5
<u>TOTAL:</u>	<u>151,200,000</u>	<u>1,200,000</u>	<u>100.0</u>

DISTRIBUTION OF GOP FUNDS

	1974	1975	1976	1977	1978	TOTAL
1. PERSONNEL COSTS						
A. PROJECT DIRECTORS OFFICE AND ADMIN. DIVISION	1,872,600	2,643,600	2,643,600	2,643,600	2,643,600	12,447,000
B. OFFICE FILES DIVISION	1,328,900	4,747,200	4,747,200	4,747,200	4,747,200	20,317,700
C. FIELD DIVISION	7,311,300	14,515,200	14,515,200	14,515,200	10,886,400	61,743,300
D. MAP DIVISION	1,907,200	3,825,600	3,825,600	3,825,600	3,045,100	16,429,100
E. IGM SECTION	378,000	453,600	453,600	453,600	75,600	1,814,400
SUB-TOTAL	12,798,000	26,185,200	26,185,200	26,185,200	21,397,900	112,751,500
2. DEPARTMENTAL TAX AND CADASTRAL OFFICES	---	1,887,300	3,462,300	5,244,900	6,279,600	16,874,100
3. SOCIAL SECURITY	1,060,138	2,104,704	2,104,704	2,104,704	1,575,628	8,949,878
4. VEHICLE INSURANCE	196,000	588,000	588,000	588,000	392,000	2,352,000
5. FACILITIES	2,000,000	---	---	---	---	2,000,000
SUB-TOTAL	3,256,138	4,580,004	6,155,004	7,937,604	8,247,228	30,175,978
TOTAL	16,054,138	30,765,204	32,340,204	34,122,804	29,645,128	142,927,478
CONTINGENCY (5.78)	930,862	1,779,796	1,871,796	1,975,196	1,714,872	8,272,522
GRAND TOTAL	16,985,000	32,545,000	34,212,000	36,098,000	31,360,000	151,200,000
\$/E	134,801	258,294	271,524	286,492	248,889	1,200,000
% OF TOTAL	11.2%	21.5%	22.7%	23.9%	20.7%	100.0%

SOCIAL SECURITY FOR FIELD PERSONNEL

	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>TOTAL</u>
<b>Base Salaries</b>	7,311,300	14,515,200	14,515,200	14,515,200	10,886,400	61,743,300
<b>S. S. Rate 14.5%</b>	1,060,138	2,104,704	2,104,704	2,104,704	1,575,628	8,949,878
<b>\$/E</b>	8,414	16,704	16,704	16,704	12,504	71,030

VEHICLE INSURANCE

<u>Type of Vehicle</u>	<u>N°</u>	<u>MONTHLY RATE</u>	<u>TOTAL FOR MONTH</u>	<u>N° OF MONTHS</u>	<u>TOTAL</u>
Bus	2	2,000	4,000	48	192,000
Jeeps	30	1,500	45,000	48	2,160,000
<b><u>TOTAL:</u></b>	<b><u>32</u></b>	<b><u>3,500</u></b>	<b><u>49,000</u></b>	<b><u>-</u></b>	<b><u>2,352,000</u></b>

DISTRIBUTION BY YEAR

	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>TOTAL</u>
<b>\$/E</b>	196,000	588,000	588,000	588,000	392,000	2,352,000
	1,556	4,667	4,667	4,667	3,110	18,667

SUMMARY OF AID LOAN FUNDS

	\$	%	\$/E	%	TOTAL	%
1. Aerial Photography	160,000	17.8	28	0.0	160,000	7.0
2. Vehicles	170,000	18.9	--	0.0	170,000	7.4
3. Technical Assistance	150,000	16.7	--	0.0	150,000	6.5
4. Equipment	261,200	29.1	32,810	2.3	294,010	12.8
5. Materials and Supplies	80,000	8.8	41,515	3.0	121,515	5.3
6. Operational Costs	--	--	1,285,990	91.9	1,285,990	55.9
7. Registry Index	--	--	39,685	2.8	39,685	1.7
SUB-TOTAL	821,200	(91.3)	1,400,000	(100.0)	2,221,200	(96.6)
8. Contingency	78,800	8.7	--	0.0	78,800	3.4
TOTAL	900,000	100.0	1,400,000	100.0	2,300,000	100.0
% OF TOTAL	39.1%		60.9%		100.0%	

NOTE: Operational Costs include:  
a. Overtime Pay for Personnel  
b. Field Per Diem  
c. Vehicle Operation Costs  
d. Vehicle Maintenance Costs  
(See Summary Distribution of AID Local Currency Costs.)

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**SUMMARY DISTRIBUTION OF FUNDS  
(IN \$ AND \$/E)**

		1974	1975	1976	1977	1978	TOTAL
1. AID	\$	692,000	82,500	77,000	27,000	21,500	900,000
	%	(76.9)	(9.2)	(8.6)	(3.0)	(2.3)	(100.0)
	\$/E	184,135	336,740	338,995	326,140	213,990	1,400,000
	%	(13.2)	(24.0)	(24.2)	(23.3)	(15.3)	(100.0)
AID TOTAL		876,135	419,240	415,995	353,140	235,490	2,300,000
		(38.1)	(18.2)	(18.1)	(15.4)	(10.2)	(100.0)
2. GOP	\$/E	134,801	258,294	271,524	286,492	248,889	1,200,000
	%	(11.2)	(21.5)	(22.7)	(23.9)	(20.7)	(100.0)
3. TOTAL	\$ + \$/E	1,010,936	677,534	687,519	639,632	484,379	3,500,000
	%	(28.9)	(19.4)	(19.6)	(18.3)	(13.8)	(100.0)
TOTAL	\$/E	318,936	595,034	610,819	612,632	462,879	2,600,000
	%	(12.3)	(22.9)	(23.5)	(23.5)	(17.8)	(100.0)

**SUMMARY OF DOLLAR COSTS**

	\$	%
1. AERIAL PHOTOGRAPHY	160,000	17.8
2. VEHICLES	170,000	18.9
3. EQUIPMENT	261,200	29.1
4. MATERIALS	80,000	8.8
5. TECHNICAL ASSISTANCE	150,000	16.7
<b>SUB-TOTAL</b>	<b>821,200</b>	<b>(91.3)</b>
6. CONTINGENCY	78,800	8.7
<b>TOTAL</b>	<b>900,000</b>	<b>100.0</b>

**DISTRIBUTION OF DOLLAR COSTS**

	1974	1975	1976	1977	1978	TOTAL
1. AERIAL PHOTOGRAPHY	160,000					
2. VEHICLES	170,000					
3. EQUIPMENT	201,920	14,820	14,820	14,820	14,820	
4. MATERIALS	30,000	20,000	15,000	10,000	5,000	
5. TECHNICAL ASSISTANCE	68,000	41,000	41,000			
<b>SUB-TOTAL</b>	<b>629,920</b>	<b>75,820</b>	<b>70,820</b>	<b>24,820</b>	<b>19,820</b>	<b>82,200</b>
6. CONTINGENCY (8.7%)	62,080	6,680	6,180	2,180	1,680	78,800
<b>TOTAL</b>	<b>692,000</b>	<b>82,500</b>	<b>77,000</b>	<b>27,000</b>	<b>21,500</b>	<b>900,000</b>
<b>% OF TOTAL</b>	<b>76.9</b>	<b>9.2</b>	<b>8.6</b>	<b>3.0</b>	<b>2.3</b>	<b>100.0</b>

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**SUMMARY DISTRIBUTION  
AID LOCAL CURRENCY COSTS**

IN \$/E

	1974	1975	1976	1977	1978	TOTAL	% OF TOTAL
1. Personnel Costs	52,760	113,840	113,840	113,840	89,840	484,120	34.6%
2. Per Diem Costs	79,240	145,860	145,860	145,860	91,850	608,670	43.5%
3. Vehicle Operation	17,900	42,960	42,960	42,960	25,060	171,840	12.3%
4. Vehicle Maintenance	1,070	2,140	4,700	7,050	6,400	21,360	1.5%
SUB-TOTAL (Operational Costs)	150,970	304,800	307,360	309,710	213,150	1,285,990	(91.9%)
5. EQUIPMENT	11,650	6,940	6,950	6,430	840	32,810	2.3%
6. REGISTRY INDEX	10,000	15,000	14,685	---	---	39,685	2.8%
7. MATERIALS AND SUPPLIES	11,515	10,000	10,000	10,000	---	41,515	3.0%
<b>TOTAL</b>	<b>184,135</b>	<b>336,740</b>	<b>338,995</b>	<b>326,140</b>	<b>213,990</b>	<b>1,400,000</b>	<b>100.0%</b>
<b>% OF TOTAL</b>	<b>13.2%</b>	<b>24.0%</b>	<b>24.2%</b>	<b>23.3%</b>	<b>15.3%</b>	<b>100.0%</b>	<b>100.0%</b>

**SUMMARY TOTAL LOCAL COSTS (IN \$/E)**

	1974	1975	1976	1977	1978	TOTAL	% OF TOTAL
AID	184,135	336,740	338,995	326,140	213,990	1,400,000	53.8%
GOP	134,801	258,294	271,524	286,492	248,889	1,200,000	46.2%
<b>TOTAL</b>	<b>318,936</b>	<b>595,034</b>	<b>610,519</b>	<b>612,632</b>	<b>462,879</b>	<b>2,600,000</b>	<b>100%</b>
<b>% OF TOTAL</b>	<b>12.2%</b>	<b>22.9%</b>	<b>23.5%</b>	<b>23.6%</b>	<b>17.8%</b>	<b>100%</b>	<b>100.0%</b>

SUMMARY OF CONTINGENCIES

FOR DOLLAR COSTS

1. AERIAL PHOTOGRAPHY	\$ 3,050
2. TECHNICAL ASSISTANCE	5,750
3. EQUIPMENT	14,400 *
4. MATERIALS	
A. PHOTOGRAPHIC	440 *
B. CARTOGRAPHIC	2,310 *
5. GENERAL	<u>78,800</u>
<u>TOTAL</u>	<u>\$ 104,750 or 11.6% of \$ 900,000</u>

---

\* 10% added to cover price increases.

PER DIEM-FIELD PERSONNEL

	CATEGORY	NO. OF PERS.	MONTHLY PER DIEM RATE	TOTAL FOR MONTH	NO. OF MONTHS	TOTALS
1. DIVISION CHIEF	D-4	1	36,000	36,000	32	1,152,000
2. CHIEF, RURAL OPER.	D-6	1	30,000	30,000	40	1,200,000
3. CHIEF, URBAN OPER.	D-6	1	30,000	30,000	40	1,200,000
4. FIELD SUPERVISORS	A-1	8	30,000	240,000	46	11,040,000
5. DELINEATORS	A-2	50	18,000	900,000	46	41,400,000
6. ASST. DELINEATORS	A-4	50	9,000	450,000	46	20,700,000
<b>TOTAL</b>		<b>111</b>		<b>1,686,000</b>		<b>76,692,000</b>
<b>\$/E</b>				<b>13,380</b>		<b>608,667</b>

DISTRIBUTION BY YEAR

POSITION	PER DIEM RATE	74 1st YEAR	75 2nd YEAR	76 3rd YEAR	77 4th YEAR	78 5th YEAR	TOTALS
1	36,000	144,000	288,000	288,000	288,000	144,000	1,152,000
2,3	60,000	300,000	600,000	600,000	600,000	300,000	2,400,000
4,5,6	1,590,000	9,540,000	17,490,000	17,490,000	17,490,000	11,130,000	73,140,000
<b>TOTAL</b>		<b>9,984,000</b>	<b>18,378,000</b>	<b>18,378,000</b>	<b>18,378,000</b>	<b>11,574,000</b>	<b>76,692,000</b>
<b>\$/E</b>		<b>79,240</b>	<b>145,860</b>	<b>145,860</b>	<b>145,860</b>	<b>91,850</b>	<b>608,670</b>

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**VEHICLE OPERATING COSTS**

TYPE OF VEHICLE	NO. OF VEHICLES	COST PER MONTH	TOTAL PER MONTH	NO. OF MONTHS	TOTAL
1. BUSES	2	8,000	16,000	48	768,000
2. JEEPS	30	10,000	300,000	48	14,400,000
3. MOTOR BIKES	54	2,500	135,000	48	6,480,000
<b>TOTAL</b>	<b>86</b>		<b>451,000</b>		<b>21,648,000</b>
		<b>\$/E</b>	<b>3,580</b>		<b>171,840</b>

**DISTRIBUTION BY YEAR (IN \$/E)**

1974	1975	1976	1977	1978
17,900	42,960	42,960	42,960	25,060

**VEHICLE MAINTENANCE COSTS**

TYPE OF VEHICLE	NO. OF VEHICLES	COST PER MONTH	TOTAL PER MONTH	NO. OF MONTHS	TOTAL
1. BUSES	2	1,000	2,000	48	96,000
2. JEEPS	30	1,250	37,500	48	1,800,000
3. MOTOR BIKES	54	310	16,740	48	803,520
<b>TOTAL</b>			<b>56,240</b>		<b>2,699,520</b>
		<b>\$/E</b>	<b>445</b>		<b>21,360</b>

**DISTRIBUTION BY YEAR**

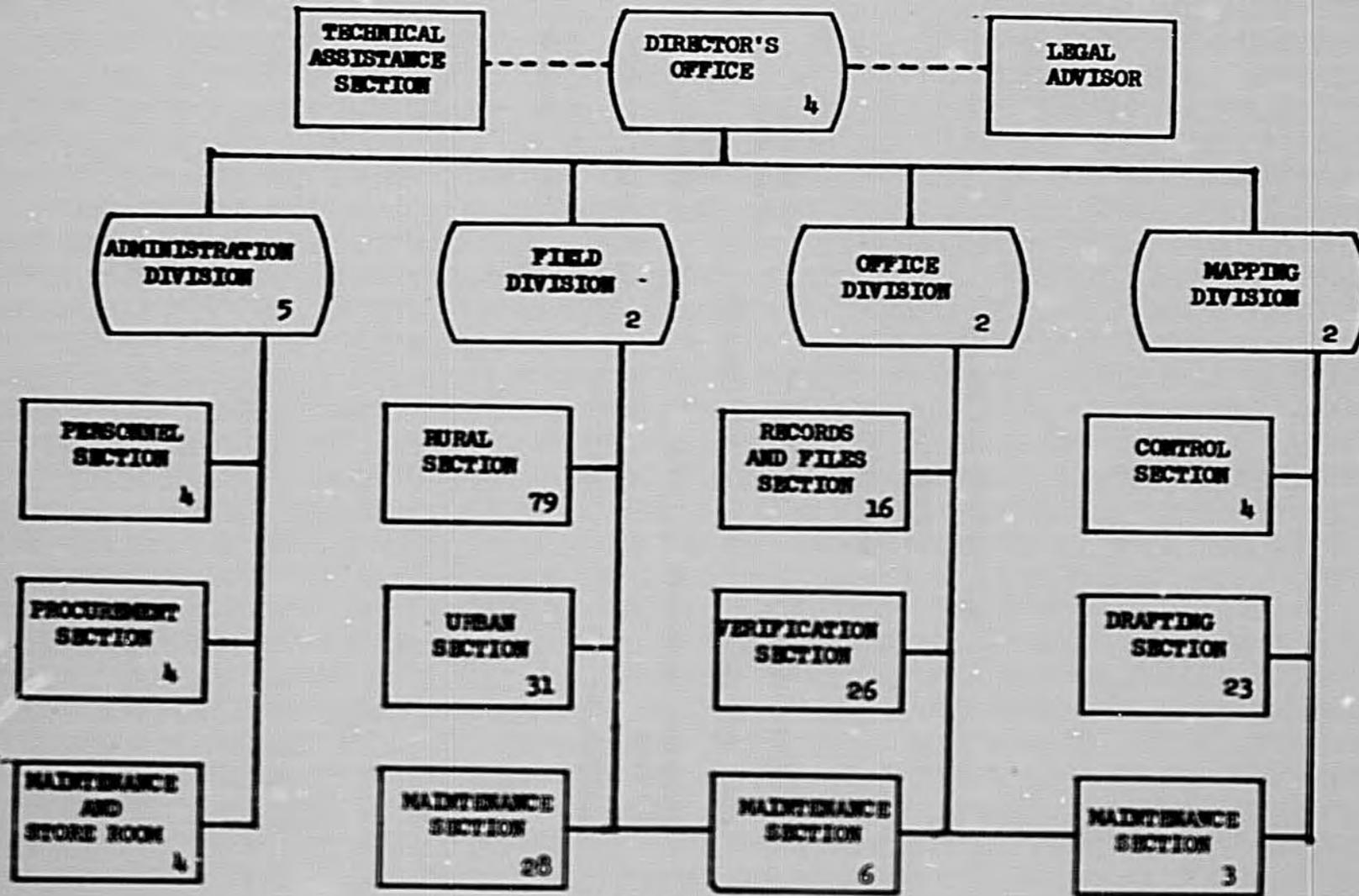
	1974	1975	1976	1977	1978	TOTAL
<b>\$/E</b>	1,070	2,140	4,700	7,050	6,400	21,360
<b>SPARE PARTS</b>	1,340	2,675	5,875	16,810	---	26,700

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**DISTRIBUTION OF OVERTIME PAY**

	1974	1975	1976	1977	1978	TOTAL
1. PROJECT DIRECTORS OFFICE AND ADMIN. DIV.	1,178,800	1,641,600	1,641,600	1,641,600	1,641,600	7,745,200
2. OFFICE FILES DIVISION	1,069,200	3,166,800	3,166,800	3,166,800	3,027,600	13,597,200
3. FIELD DIVISION	4,257,400	8,282,400	8,282,400	8,282,400	6,211,200	35,315,800
4. MAP DIVISION	1,051,450	2,083,200	2,083,200	2,083,200	1,664,550	8,965,600
5. IGM SECTION	394,950	473,940	473,940	473,940	78,990	1,895,760
SUB-TOTAL	7,951,800	15,647,940	15,647,940	15,647,940	12,623,940	67,519,560
\$/E	63,110	124,190	124,190	124,190	100,190	535,870
MINUS ONE MONTH VACATION TIME	10,350	10,350	10,350	10,350	10,350	- 51,750
TOTAL	52,760	113,840	113,840	113,840	89,840	484,120

CADASTRAL DEPARTMENT



Total Personnel - 243  
 On-Going - 28  
 New Hires - 215

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**REAL PROPERTY TAX OFFICE**

**DIRECTOR**

**SUB-DIRECTOR**

<b>SECRETARY GENERAL</b>	<b>COLLECTION</b>	<b>CADASTRAL DEPARTMENT</b>
<b>LEGAL SECTION</b>	<b>TAX NOTIFICATION</b>	<b>VALUATION DEPARTMENT</b>
<b>TECHNICAL ASSISTANCE SECTION</b>	<b>AUDIT</b>	<b>BRANCH OFFICES</b>
<b>COMPTROLLER</b>	<b>ACCOUNTING DEPARTMENT</b>	<b>ADP SECTION AND CENTRAL ARCHIVES</b>

**MINISTRY OF FINANCE**

**FINANCE MINISTER**

**ASSISTANT SECRETARY OF STATE**

**LEGAL DEPARTMENT**

**LEGISLATION AND  
PLANNING DEPT.**

**BUDGET DEPARTMENT**

**ADMINISTRATION  
DEPARTMENT**

**COMPTROLLER**

**TREASURY DEPT.**

**CUSTOMS TAX OFFICE**

**INTERNAL TAX OFFICE**

**INCOME TAX OFFICE**

**REAL PROPERTY TAX OFFICE**

**STATISTICS AND CENSUS OFFICE**

**NATIONAL DEPOSITORY**

**NATIONAL PRINTING PLANT**

CURRICULUM VITAE

Name: Dr. DARIO ZARATE ARELLANO

Status: Married

Age & Date of Birth:

Education: Graduated from the Economic School and other  
International Courses for Post Graduates

Experience

Present Duties. Years and Months.

Former Duties at the Real Estate Tax Office. Years and Months.

Director of the Real Estate Tax Office since November 1, 1968  
to date.

Director of Basic Education, Faculty of Economic Sciences.  
Syndic of the National Railroad Co. since 1966.

Other Duties

For several years, Chief, Office of Budgeting Planification,  
Ministry of Finance.

- - - - -

Name: AGUSTIN LLAMOSAS ORTIGOSA

Status: Married

Age & Date of Birth: 41 years old.

Education: Graduated from the Economic School, National University  
of Asuncion

Experience

Present Duties, Years and Months.

Former Duties at the Real Estate Tax Office. Years and Months.

Drawer - November 1957 - December 31, 1969  
General Secretary - January 1970 - June 30, 1972  
Vice-Director - July 1972 to date.

Other Duties

- - - - -

Name: SEBASTIAN ANTONIO CHAMORRO

Status: Married

Age & Date of Birth: 43 years old - 

Education: Graduated from the Economic School. Also attended International Courses for Post Graduates.

Experience

Present Duties. Years and Months.

Former Duties at the Real Estate Tax Office. Years and Months.

Technical Advisor - 2 years.

Chief, Statistics Division - 1 year.

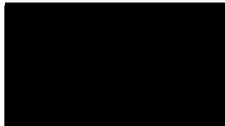
Other Duties

Director, Administrative Department, Office of Civil Aeronautics, Ministry of Defense - 18 years.

- - - - -

Name: GUILLERMO BENITEZ RECALDE

Status: Married

Age & Date of Birth: 30 years old. 

Education: Graduated from the Economic School.  
CEPADES, 1970

Development Administration - June/November, 1971 -  
Rio de Janeiro, Brazil

Experience

Present Duties. Years and Months.

**Former Duties at the Real Estate Tax Office. Years and Months.**

Technical Advisor - 15 months.

Other Duties

- - - - -

**Name:** RUDECINDO MARTINEZ ZALAZAR

**Status:** Married

**Age & Date of Birth:**

**Education:** High School. Licentiate in Mathematics.  
Third Course, Economic School.

Experience

**Present Duties. Years and Months.**

**Former Duties at the Real Estate Tax Office. Years and Months.**

Chief, Cadastral Department - 17 years and 9 months.  
Chief of Inspectors.  
Chief of Census.

Other Duties

Mathematics professor.

- - - - -

**Name:** CARLOS BERNI GONZALEZ

**Status:** Married

**Age & Date of Birth:** 37 years old.

**Education:** High School

Experience

**Present Duties. Years and Months.**

**Former Duties at the Real Estate Tax Office. Years and Months.**

Collection Department - 4 years, 9 months.  
Administrative Department - 4 years.  
Accounting Department - 5 years.  
Administrative Department - (Rental) - 3 years.

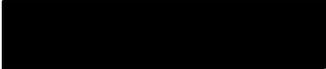
Other Duties

Duty Free Tax Office.

- - - - -

Name: PABLO G. EMERY

Status: Married

Age & Date of Birth: 43 years old. 

Education: 4th year - High School. First Seminar on Administrative Management, October 1967 and Second Seminar October 68. Seminar on Human Relations, 1969.

Experience

Present Duties. Years and Months.  
Former Duties at the Real Estate Tax Office. Years and Months.

Chief, Collection Department - 3 years, 4 months.  
Assistant to the Vice-Director, 1948-53.  
Administrative Department, 1954/58.  
Revaluation Department, 1959-1970.

Other Duties

- - - - -

Name: MARIA VICTORIA DIAZ de LLAMOSAS

Status: Married

Age & Date of Birth: 39 years old. 

Education: Public Accountant, graduated from the Economic School.

Experience

Present Duties. Years and Months.  
Former Duties at the Real Estate Tax Office. Years and Months.

Chief, Accounting Department - 13 years, 5 months.  
Responsible for the monthly collection - 3 years, 2 months.  
Liquidator - 10 months.  
Assistant to the Secretary and Vice-Director. 2 years, 11 months.

Other Duties

Seminar on Financial Administration, 1960.  
Seminar on Studies on Laws for Fiscal Accounting, 1966.  
2nd Seminar on Administrative Management, 1967.  
Course on Auditing.  
First National Course on Taxpayers, 4/29 June, 1973.

- - - - -

Name: PEDRO MORENO AGUILERA

Status: Married

Age & Date of Birth: 41 years old. [REDACTED]

Education: Public Accountant, Organization and Methods.  
Administrative Management.

Experience

Present Duties. Years and Months.  
Former Duties at the Real Estate Tax Office. Years and Months.

Treasurer - 3 years, 8 months (un to date).  
Chief Real Department  
Chief Liquidation Department  
Chief Branch Department

Other Duties

Note: As employee of the Real Estate Tax Office: 1st part:  
1951/52; 2nd part: 1954/73.

- - - - -

Name: BLAS CARLOS FERNANDEZ

Status: Married

Age & Date of Brith: 48 years old - [REDACTED]

Education: Third Course - School of Commerce

Experience

Present Duties. Years and Months.

Former Duties at the Real Estate Tax Office. Years and Months.

Chief, Branch Department - 3 years and 8 months.

Treasury Department - 4 years.

Census Department - 6 years.

Appraisal Department.

Other Duties

- - - - -

Name: SATURNINO HERMOSILLA ORTIGOZA

Status: Married

Age & Date of Birth: 40 years old. [REDACTED]

Education: High School

Experience

Present Duties. Years and Months.

Former Duties at the Real Estate Tax Office. Years and Months.

Chief, Appraisal Department - 3 yrs. 2 mos.

Tax Department - 8 mos.

Cashier - 1 year

Chief, Branch Department - 7 yrs. 2 mos.

Appraisal Department - 4 years 10 months

Other Duties

- - - - -

Name: GUALBERTO CABALLERO

Status: Married

Age & Date of Birth: 42 years old. [REDACTED]

Education: 4th Course, School of Commerce

Experience

Present Duties. Years and Months.

Former Duties at the Real Estate Tax Office. Years and Months.

Chief of Division - 2 years.

Assistant - Calculations - Cashier

Other Duties

- - - - -

Name: CARLOS VICTORIO OVIEDO ANTONELLI

Status: Married

Age & Date of Birth: 33 years old. [REDACTED]

Education: Public Accountant. Fiscal Accounting (Min. Finance).  
Budget by Programs (Min. Finance).

Experience

Present Duties. Years and Months.

Former Duties at the Real Estate Tax Office. Years and Months.

Branch Censurer - 1 year, 9 months.

Chief, Appraisal Department - 1 year.

Assistant to Accounting Department - 8 years, 6 mos.

Assistant Accountant

Census Department - 1 year.

Other Duties

Responsible for Accounting Machine Model #32

Instructor for Branches of the Real Estate Tax Office in the interior.

- - - - -

Name: JUAN SIMON OVIEDO ANTONELLI

Status: Married

Age & Date of Birth: 36 years old. [REDACTED]

Education: High School

Experience:

Present Duties. Years and Months

Former Duties at the Real Estate Tax Office. Years and Months.

Chief of Division - 8 months

Inspector - 1 year, 4 months. Chief, Cadaster Department:  
3 years, 6 months

Administrative Department (for the Interior)-2 years, 6 months

Other Duties

Central Bank of Paraguay: Assistant to: General Secretary;  
Private Credit Department and Accounting Department (6 yrs.)

- - - - -

Name: RAUL RIOS CAREAGA

Status: Married

Age & Date of Birth: 40 years old. [REDACTED]

Education: High School. Courses on Public Administration. Organiza-  
tion and Methods.

Experience

Present Duties. Years and Months.

Former Duties at the Real Estate Tax Office. Years and Months.

Chief of Division (Cadaster-Rural), Category D-6.

Inspector, Cadaster Department - 31-I-57 - 18-II-72.

Other Duties

Name: GUSTAVO BALDI B.

Status: Bachelor

Age & Date of Birth:

Education: Basic Course on Public Relations. Land surveying and Rural Cadaster.

Experience

Present Duties. Years and Months.

Former Duties at the Real Estate Tax Office. Years and Months.

Chief of Division. One year.

Appraisal Inspector. Ten years, 4 months.

Other Duties

Draftsman. 4 yrs.

- - - - -

Name: BIENVENIDO DEOGRACIO CAÑETE

Status: Married

Age & Date of Birth: 39 years old. 

Education: High School

Experience

Present Duties. Years and Months.

Former Duties at the Real Estate Tax Office. Years and Months.

Chief, Account Current Department - 8 months

Cadaster Inspector - 1 year, 6 months

Chief, Accounting Documents - Revaluation Department - 3 years.

Chief of Division, Branch Department - 5 years.

Chief of Plane Surveying Department - 4 years, 6 months

Other Duties

Name: MARTIN ANDRES PETRAYO VILLALBA

Status: Married

Age & Date of Birth: [REDACTED]

Education: Public Accountant. Special Courses on Organization & Methods. Public Accounting and Fiscal Control and a Course on Administration for Development.

Experience

Present Duties. Years and Months.

Former Duties at the Real Estate Tax Office. Years and Months.

Cashier - 3 years and 9 months  
Chief, Statistics Sections - 2 years

Other Duties

- - - - -

Name: ANGEL TEOFILO FERNANDEZ

Status: Bachelor

Age & Date of Birth: 27 years old. [REDACTED]

Education: 2nd Course - Mathematics

Experience

Present Duties. Years and Months.

Former Duties at the Real Estate Tax Office. Years and Months.

Responsible for the Mechanized Department  
Secretary - (typist) 1 year  
Mechanized Department - 2 years  
Statistics - 2 years (typist)  
Accounts Current Department

Other Duties

Name: CAYO CEFERINO ROJAS ACUNA

Status: Married

Age & Date of Birth: [REDACTED]

Education: Public Accountant

Experience:

Present Duties. Years and Months.

Former Duties at the Real Estate Tax Office. Years and Months.

Chief, Statistics Department - 2 years, 8 months

Calculator - 3 years

Chief, Calculation Section - 9 years

Chief, Duty Free Tax Department - 2 years, 9 months

Other Duties

- - - - -

Name: PEDRO ANTONIO CARRERA B.

Status: Married

Age & Date of Birth: 36 years old. [REDACTED]

Education: Public Accountant

Experience

Present Duties. Years and Months.

Former Duties at the Real Estate Tax Office. Years and Months

Chief, Duty Free Tax Office and Rental Department - 2 yrs., 10 mos.

Chief, Statistics Section - 4 months

Chief, Account Current Department (Rural) - 4 years

Chief, Account Current Department (Capital) - 3 years

Other Duties

Calculator - 4 years

Responsible for Calculating Machines - 3 years

Responsible for Tickets - 4 years

- - - - -

Name: FABIO ACOSTA RUIZ DIAZ

Status: Married

Age & Date of Birth: [REDACTED]

Education: University Degree. Lic. in Public Relations. Law School Student.

Experience

Present Duties. Years and Months.

Former Duties at the Real Estate Tax Office. Years and Months.

Chief, Actualization Department - 1 year, 2 months  
Chief, Census Department - 4 years, 1 month  
Chief, Account Current Department - 2 years, 4 months (Capital)  
Chief, Account Current Department - 5 years, 1 month (Rural).  
Responsible for Accounting Machine - 3 years  
Assistant - 1 year

Other Duties

- - - - -

Name: ANUNCIO DE JESUS ZARATE

Status: Married

Age & Date of Birth: 37 years old. [REDACTED]

Education: High School. Lic. Mathematics.

Experience

Present Duties. Years and Months.

Former Duties at the Real Estate Tax Office. Years and Months.

Chief, Census Department - 10 months  
Chief, Inspectors Department - 1 year, 4 months  
Assistant to Surveying Department - 2 years  
Assistant to Branch Department - 2 years  
Assistant to the General Secretary - 9 years, 3 months

Other Duties

Math Professor in several Official and Private Schools.

Name: MARCIANO FACIEL OMBICOA

Status: Bachelor

Age & Date of Birth: 28 years old. [REDACTED]

Education: High School (2nd Year - Cond.); Administration & Accounting School; Public Relations; Auditing, Cadaster and Public Relations.

Experience

Present Duties. Years and Months.

Former Duties at the Real Estate Tax Office. Years and Months.

Deputy Chief, Accounting Department - 1 year, 8 months  
Cashier Office - 1 year, 1 month

Other Duties

- - - - -

### THE PROPERTY TAX SYSTEM

The basic property tax law was established by Decree No. 51 of 24 December 1951. Decree No. 51 makes provisions for establishing a cadaster by districts and for establishing values on rural properties based on soil classifications, and for including buildings and other improvements in the value of urban properties. However, lacking the means for establishing a cadaster and for determining property values according to the above criteria, the property tax, outside of Asuncion, has become essentially a land tax, with rural land values assigned by districts (counties) and urban land values determined by category of town (size) and by class of streets.

Property values can be adjusted every five years. In the proposed project area, the rural land values were last adjusted (by districts) in 1972 and the urban land values in 1969. However, if the value of a property increases due to undeclared changes in area (or improvements if they are included) adjustments can be made to the tax for three prior years if the taxes are paid up-to-date and for a period of up to ten years if the taxes are not current.

In addition to a direct tax of 10 mills (1%) on the determined land value, rural properties in the Oriente Region pay a road tax if they are within 25 kilometers of a road and an excess size tax if they are larger than 5,000 hectares.

In addition to the normal class of exemptions (eg government, municipal and public lands, churches, public hospitals and clinics, embassies, etc.), the law provides for the following special exemptions:

1. For wounded veterans of the Chaco War, or their widows, a tax deduction of G/5,000 per year.
2. For veterans of the Chaco War, or their widows, a tax deduction of G/2,500 per year.

(In these cases, the taxpayer must own, and live on, the property and must present a legal certificate each year from the local judicial authorities in order to apply for the deduction.)

3. For the recipient owners of rural properties sold by the IBR (the agrarian reform agency), a total tax exemption for the first five years following the first payment on the property. (Copies of the IBR contract are forwarded to the local Property Tax Office).

4. For the owners of rural properties of less than 10 hectares, an exemption from property tax provided they live on the property and cultivate more than 50% of the land. (According to the law, the owners must present a certificate each year from the local authorities in order to apply for the exemption. However, this requirement is not being enforced.)

The tax system is basically an "in rem" system in that:

1. Each taxable property is billed separately.
2. In the case of joint ownerships, any one of the owners can be held liable for the tax.
3. Foreclosure for back taxes, after a delinquency period of ten years, can take place with proper notification to the owner or to the local municipality, followed by foreclosure notices in the local newspaper for ten consecutive days each month for three months.

TAX RATES AND LAND VALUES

- A. Basic tax rate: 10 mills (1%) of determined value.
- B. Land values of urban properties established in 1965.
  - 1. In first category: cities
    - a. ₱ 60 per sq. meter - paved streets
    - b. ₱ 40 per sq. meter - improved streets
    - c. ₱ 30 per sq. meter - dirt streets
  - 2. In second category: towns
    - a. ₱ 40 per sq. meter - paved streets
    - b. ₱ 30 per sq. meter - improved streets
    - c. ₱ 20 per sq. meter - dirt streets
  - 3. In third category: small towns
    - a. ₱ 20 per sq. meters - paved streets
    - b. ₱ 15 per sq. meter - improved streets
    - c. ₱ 10 per sq. meter - dirt streets

Note: General classification of categories:

- 1. Cities - over 500 urban lots
- 2. Towns - over 250 urban lots
- 3. Small towns - less than 250 urban lots.

B. Land Values of Rural Properties Established by Districts in 1972.

Department	Minimum Value per Hectare	Maximum Value per Hectare
1. Concepcion	800	1,500
2. San Pedro	800	1,200
3. Cordillera	1,200	3,000
4. Guaira	1,500	2,000
5. Caaguazu	700	1,500
6. Caazapa	1,200	1,300
7. Itapua	1,200	1,800
8. Misiones	1,200	2,500
9. Paraguari	1,200	2,500
10. Alto Parana	800	1,000
11. Central	2,500	7,500
12. Neembucu	600	2,000
13. Amambay	1,000	2,000

Note: Application of values:

For 1972: 80% of determined value  
 For 1973: 90% of determined value  
 For 1974: 100% of determined value.

C. Road Tax - Applied to Rural Properties within 25 Kilometers of a Road.

1. All weather road: 6 mills of determined value
2. Improved road: 4 mills of determined value
3. Dirt road: 2 mills of determined value

D. Additional Tax on Rural Properties Exceeding 5,000 Hectares.  
(Tax Rate Applied to Determined Land Value)

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From	To	Rate
5,000 Hectares	10,000 Hectares	3 mills
10,000 Hectares	20,000 Hectares	5 mills
20,000 Hectares	30,000 Hectares	7 mills
30,000 Hectares	40,000 Hectares	9 mills
40,000 Hectares	50,000 Hectares	11 mills
50,000 Hectares	70,000 Hectares	13 mills
70,000 Hectares	100,000 Hectares	15 mills
100,000 Hectares	150,000 Hectares	17 mills
150,000 Hectares	200,000 Hectares	19 mills
200,000 Hectares	- Hectares	20 mills

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**SUMMARY OF TOTAL PROPERTY TAXES COLLECTED IN 1972**

		<b>CURRENT YEAR TAXES</b>	<b>PRIOR YEAR TAXES</b>	<b>TOTAL TAXES</b>	<b>% OF TOTAL</b>	<b>% OF REGION</b>
<b>* TOTALS</b>		<b>381,065,253</b>	<b>129,655,408</b>	<b>510,720,661</b>	<b>100.0%</b>	
Capital		188,226,488	56,515,116	244,741,604	48.0%	
Comercial		66,564,504	4,275,202	70,839,706		
Urban		93,792,680	37,621,691	131,414,371		
Sub-Urban		27,869,304	14,618,223	42,487,527		
Interior		192,838,765	73,140,292	265,979,057		
Region Oriental		136,366,250	58,018,484	194,384,734	38.1%	
I.	Dpto. Concepcion	15,351,577	5,504,894	20,856,471		100.0%
II.	" San Pedro	11,657,489	4,958,086	16,615,575		10.7%
III.	" Cordillera	6,062,920	4,237,559	10,300,479		8.5%
IV.	" Guaira	2,454,051	1,477,703	3,931,754		5.3%
V.	" Caaguazu	16,025,470	9,905,321	25,930,791		2.0%
VI.	" Caazapa	7,098,998	3,537,768	10,636,766		13.3%
VII.	" Itapua	13,294,550	6,485,590	19,780,140		5.5%
VIII.	" Misiones	8,478,353	2,628,644	11,107,097		10.2%
IX.	" Paraguari	9,934,175	3,779,618	13,713,793		5.7%
X.	" Alto Parana	18,247,930	2,796,172	21,044,102		7.1%
XI.	" Central	11,342,494	8,500,316	19,842,810		10.8%
XII.	" Neembucu	6,470,908	1,992,328	8,463,236		10.2%
XIII.	" Amambay	9,947,235	2,214,485	12,161,720		4.4%
Region Occidental		56,472,515	15,121,808	71,594,323	13.9%	
XIV.	" Villa Hayes	54,291,218	12,358,875	66,650,093		
XV.	" Boqueron	1,259,611	1,992,401	3,252,012		
XVI.	" Olimpo	921,686	770,532	1,692,218		

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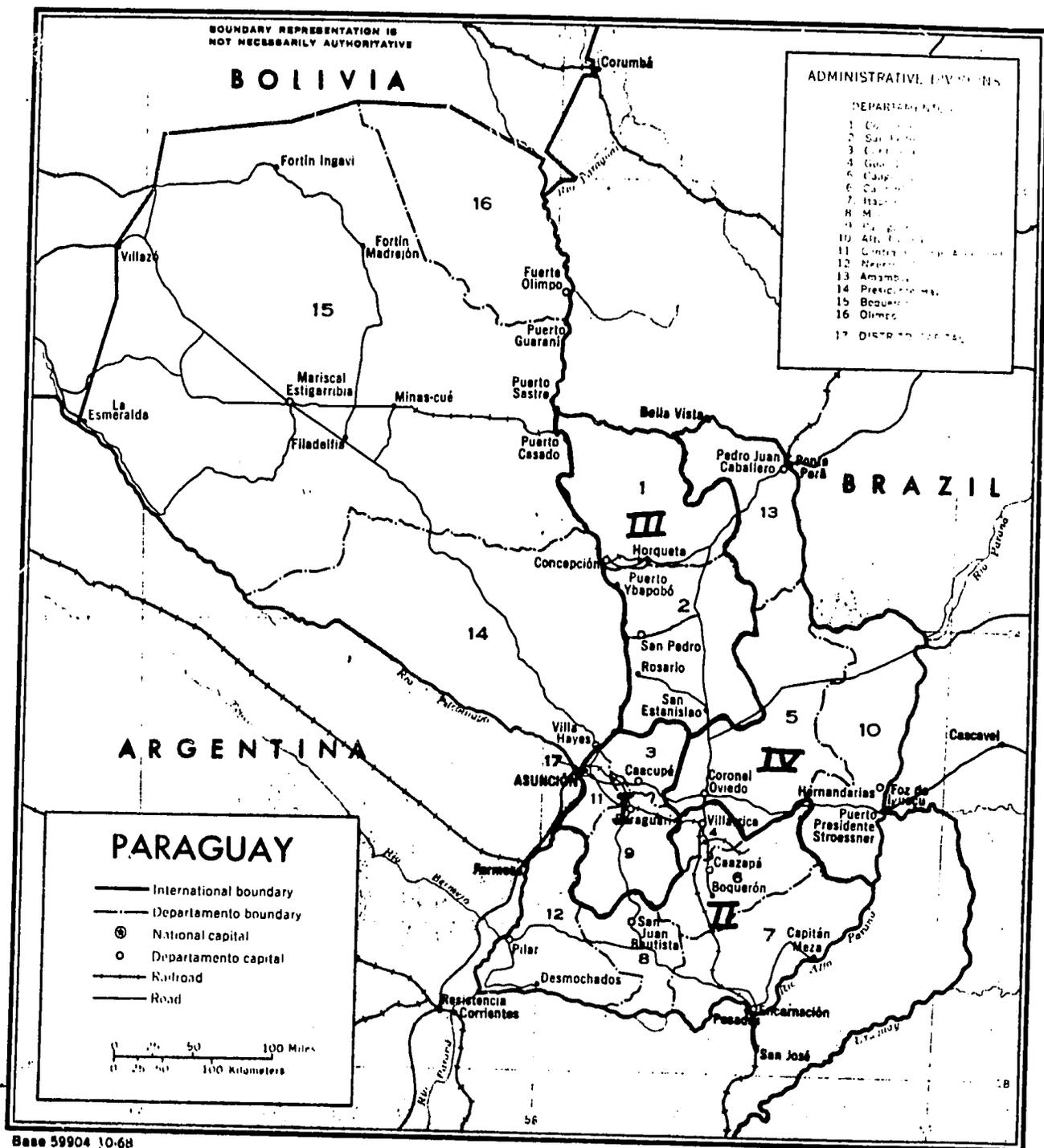
COMPARISON OF PROPERTY TAX COLLECTION  
DURING JAN. FEB. AND MARCH FOR 1971, 1972 AND 1973

	1971		1972		1973	
<b>Asuncion (urban)</b>						
Current tax	117,733		127,722		139,459	
Back taxes	14,950		15,224		17,603	
Fines	1,180		1,203		1,355	
Total	133,863	78.1%	144,149	73.1%	158,397	67.6%
(Percent increase over prior year)			7.7%		11.0%	
<b>Rural</b>						
Current tax	19,255		24,914		46,971	
Back taxes	8,231		16,160		16,610	
Fines	630		1,198		874	
Total	28,116	16.4%	42,272	21.4%	64,455	27.5%
(Percent increase over prior year)			50.3%		52.3%	
<b>Other urban</b>						
Current tax	6,747		7,097		7,928	
Back taxes	2,489		<del>3,426</del> 178		3,277	
Fines	91		178		203	
Total	9,327	5.5%	10,701	5.5%	11,408	4.9%
(Percent increase over prior year)			14.7%		6.6%	
<b>GRAND TOTAL</b>	<b>171,306</b>	<b>100.0%</b>	<b>197,122</b>	<b>100.0%</b>	<b>234,260</b>	<b>100.0%</b>
(Percent increase over prior year)			15.1%		18.8%	

Note: Amounts x 1,000

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ZONES OF COMPARATIVE TAX COLLECTION



SUMMARY OF 1972 TOTAL TAX COLLECTION  
IN PROJECT AREA

		CURRENT TAX		BACK TAXES		TOTAL TAX	
3		6,066		4,231		10,297	
9		9,936		3,782		13,718	
11		11,352		8,533		19,885	
	AREA I	27,354	20.1%	16,546	28.6%	43,900	22.6%
4		2,454		1,475		3,929	
6		7,099		3,239		10,338	
7		13,304		6,473		19,777	
8		8,456		2,629		11,085	
12		6,386		2,107		8,493	
	AREA II	37,699	27.6%	15,923	27.6%	53,622	27.6%
1		15,354		5,531		20,885	
2		11,721		4,983		16,704	
	AREA III	27,075	19.9%	10,514	18.2%	37,589	19.4%
5		16,025		9,904		25,929	
10		18,248		2,796		21,044	
13		9,947		2,101		12,048	
	AREA IV	44,220	32.4%	14,801	25.6%	59,021	30.4%
		136,348	100.0%	57,784	100.0%	194,132	100.0%

NOTE: Amounts X 1,000

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SUMMARY OF 1972 URBAN TAX COLLECTION IN PROJECT AREA

	Current Tax		Back Taxes		Total Tax	
3	Cordillera	1,026		1,149		2,175
9	Paraguari	599		545		1,144
11	Central	7,206		5,381		12,587
	Area I	8,831	61.7%	7,075	64.7%	15,906
		(55.5%)		(44.5%)		(100.0%)
4	Guaíta	856		699		1,555
6	Caazapa	86		116		202
7	Itapua	1,229		1,163		2,392
8	Misiones	283		222		505
12	Ñeembucu	1,898		217		2,115
	Area II	4,352	30.4%	2,417	22.2%	6,769
		(64.3%)		(35.7%)		(100.0%)
1	Concepcion	602		917		1,519
2	San Pedro	104		71		175
	Area III	706	4.9%	988	9.0%	1,694
		(41.7%)		(58.3%)		(100.0%)
5	Caaguazu	242		246		488
10	Alto Parana	0		0		0
13	Amambay	201		204		405
	Area IV	443	3.0%	450	4.1%	893
		(49.6%)		(50.4%)		(100.0%)
	TOTALS	14,322	100.0%	10,930	100.0%	25,252
						100.0%

Note: Amounts x 1,000

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**SUMMARY OF 1972 RURAL TAX COLLECTION  
IN PROJECT AREA**

	CURRENT TAX		BACK TAXES		TOTAL TAX	
3 Cordillera	5,040		3,082		8,122	
9 Paraguari	9,337		3,237		12,574	
11 Central	4,146		3,152		7,298	
AREA I	18,523	15.2%	9,471	20.1%	27,994	16.5%
	(66.2%)		(33.8%)		(100.0%)	
4 Guaira	1,598		776		2,374	
6 Caazapa	7,013		3,423		10,436	
7 Itapua	12,075		5,310		17,385	
8 Misiones	8,173		2,407		10,580	
12 Neembucu	4,488		1,890		6,378	
AREA II	33,347	27.3%	13,806	29.3%	47,153	27.9%
	(70.7%)		(29.3%)		(100.0%)	
1 Concepcion	14,752		4,614		19,366	
2 San Pedro	11,617		4,912		16,529	
AREA III	26,369	21.6%	9,526	20.2%	35,895	21.2%
	(73.5%)		(26.5%)		(100.0%)	
5 Caaguazu	15,783		9,658		25,441	
10 Alta Parana	18,248		2,796		21,044	
13 Amambay	9,746		1,897		11,643	
AREA IV	43,777	35.9%	14,351	30.4%	58,128	34.4%
	(75.3%)		(24.7%)		(100.0%)	
TOTAL	122,016	100.0%	47,154	100.0%	169,170	100.0%
	(72.1%)		(27.9%)		(100.0%)	

NOTE: Amounts X 1,000

**SUMMARY OF AREA I (CORDILLERA, PARAGUARI, CENTRAL)**  
**(10% OF PROJECT AREA)**

	<b>URBAN</b>	<b>RURAL</b>	<b>TOTAL</b>
1. Population	42.2%	34.6%	30.4%
2. Taxpayers	78.4%	54.6%	--
3. Properties	52.3%	37.0%	44.6%
4. Tax 1972	61.7%	15.2%	--
5. No. of Receipts	79.0%	52.1%	62.7%

SUMMARY OF 1972 TAX PAYERS AND TAX RECEIPTS

	Urban Properties				Rural Properties			
	a.	b.	c.	d.	a.	b.	c.	d.
1 Concepcion	716	46	762	1,544	657	51	708	1,056
2 San Pedro	175	2	177	279	1,955	109	2,064	3,136
3 Cordillera	*1,683	58	1,741	3,363	5,646	154	5,800	9,815
4 Guaira	699	63	762	1,437	1,333	137	1,470	2,298
5 Caaguazu	282	8	290	566	2,161	73	2,234	3,717
6 Caazapa	63	-	63	116	1,517	117	1,634	2,475
7 Itapua	1,173	122	1,295	2,710	5,031	322	5,353	9,343
8 Misiones	212	11	223	403	1,500	58	1,558	2,421
9 Paraguari	*1,051	104	1,155	2,352	4,998	172	5,170	8,056
10 Alto Parana	-	-	-	-	925	27	952	1,273
11 Central	*12,900	298	13,198	27,297	9,892	137	10,029	15,535
12 Neembucu	687	55	742	1,028	2,556	186	2,742	3,671
13 Amambay	310	12	322	685	683	43	726	1,359
<b>TOTALS</b>	<b>19,951</b>	<b>779</b>	<b>20,730</b>	<b>41,780</b>	<b>38,171</b>	<b>1,586</b>	<b>40,440</b>	<b>64,155</b>
Total of Zone I *	15,634	460	16,094	33,012	20,854	463	20,999	33,406
% of Zone I	78.4%	59.0%	77.6%	79.0%	54.6%	29.2%	51.9%	52.1%
Total tax receipts paid				105,935				
Total from Zone I				66,418				
% from Zone I				62.7%				

- a. Taxpayers paying 1972 tax.
- b. Taxpayers paying tax for prior years, but not 1972 tax.
- c. Total No. of taxpayers
- d. Total No. of receipts paid.

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RURAL PROPERTIES

COMPARISON BY DEPARTMENT

	EST. NO. OF PROP.	PROP. ON TAX ROLLS	DIFF.	% DIFF.
I. Concepcion	14,052	5,780	+ 8,272	+ 143
II. San Pedro	20,333	8,731	+ 11,602	+ 132
III. La Cordillera	28,758	31,446	- 2,688	- 09
IV. Guaira	17,001	10,997	+ 6,004	+ 54
V. Caaguazu	25,628	12,143	+ 13,485	+ 111
VI. Caazapa	15,090	9,890	+ 5,200	+ 52
VII. Itapua	27,029	27,802	- 773	- 03
VIII. Misiones	8,256	6,518	+ 1,738	+ 26
IX. Paraguari	31,736	26,738	+ 4,998	+ 18
X. Alto Parana	13,493	4,728	+ 8,765	+ 185
XI. Central	31,989	52,866	- 20,877	- 40
XII. Neembucu	9,512	10,191	- 679	- 07
XIII. Amambay	7,283	2,949	+ 4,334	+ 146
TOTAL	250,160	210,780	+ 39,380	

SUMMARY OF AREAS AND ESTIMATED NUMBER OF RURAL PROPERTIES

		Area Sq. Km	% of Area	Esta No. of Prop.	% of Prop.
3	Cordillera	4,918		28,760	
9	Paraguari	8,525		31,740	
11	Central	2,380		31,990	
	Area I	15,853	9.9%	92,490	37.0%
4	Guaira	3,202		17,000	
6	Caazapa	9,496		15,090	
7	Itapua	16,525		27,030	
8	Misiones	7,835		8,250	
12	Ñeembucu	13,868		9,510	
	Area II	50,926	31.9%	76,880	30.6%
1	Concepcion	18,051		14,050	
2	San Pedro	20,002		20,330	
	Area III	38,053	23.8%	34,380	13.6%
5	Caaguazu	21,613		25,630	
10	Alto Parana	20,247		13,490	
13	Amambay	12,933		7,920	
	Area IV	54,793	34.4%	47,040	18.8%
	<b>TOTAL</b>	<b>159,625</b>	<b>100.0%</b>	<b>250,160</b>	<b>100.0%</b>
	Area I and Area II combined		41.8%		67.6%

SUMMARY COMPARISON: NUMBER OF RURAL PROPERTIES ON TAX ROLLS

AND NUMBER OF TAXPAYERS PAYING 1972 RURAL TAX

		Prop. on Tax Rolls	% on Rolls	1972 Taxpayers	% of Taxpayers
3	Cordillera	31,446		5,646	
9	Paraguari	24,216		4,998	
11	Central	55,388		9,892	
	Area I	111,050	52.7%	20,536	52.9%
4	Guaira	10,997		1,333	
6	Caazapa	9,890		1,517	
7	Itapua	27,802		5,031	
8	Misiones	6,518		1,500	
12	Ñeembucu	10,191		2,556	
	Area II	65,398	31.0%	11,937	30.7%
1	Concepcion	5,780		657	
2	San Pedro	8,713		1,955	
	Area III	14,493	6.9%	2,612	6.7%
5	Caaguazu	12,143		2,161	
10	Alto Parana	4,728		925	
12	Amambay	2,949		683	
	Area IV	19,820	9.4%	3,769	9.7%
	TOTAL	210,799	100.0%	38,854	100.0%
			83.7%		83.6%

**SUMMARY OF ESTIMATED INCREASE IN RURAL PROPERTY TAX  
(G/ x 1,000) BASED ON AREA**

	DIRECT TAX	ROAD TAX	ADDITIONAL TAX	ESTIMATED TOTAL CURRENT TAX	EQUIV.* 1974 TAX	INCREASE	% INCREASE
3 Cordillera	8,119	4,060	---	12,179	6,300	5,879	93.3%
9 Paraguari	15,493	6,197	1,550	23,240	11,671	11,569	99.1%
11 Central	8,270	4,135	---	12,405	5,182	7,223	139.4%
<b>AREA I</b>	<b>31,882</b>	<b>14,392</b>	<b>1,550</b>	<b>47,824</b>	<b>23,153</b>	<b>24,671</b>	<b>106.6%</b>
4 Guaira	4,998	1,500	500	6,998	1,998	5,000	250.2%
6 Caazapa	11,510	3,453	1,150	16,113	8,766	7,347	83.8%
7 Itapua	25,906	7,770	2,600	36,276	15,094	21,182	140.3%
8 Misiones	10,542	5,270	1,050	16,862	10,215	6,647	65.0%
12 Neembucu	9,122	1,824	900	11,846	5,610	6,236	111.1%
<b>AREA II</b>	<b>62,078</b>	<b>19,817</b>	<b>6,200</b>	<b>88,095</b>	<b>41,683</b>	<b>46,412</b>	<b>111.3%</b>
1 Concepcion	23,620	4,724	3,540	31,884	18,440	13,444	72.9%
2 San Pedro	20,002	4,000	3,000	27,002	14,521	12,481	86.0%
<b>AREA III</b>	<b>43,622</b>	<b>8,724</b>	<b>6,540</b>	<b>58,886</b>	<b>32,961</b>	<b>25,925</b>	<b>78.7%</b>
5 Caaguazu	21,295	6,390	4,260	31,945	19,728	12,217	61.9%
10 Alta Parana	19,181	5,754	3,840	28,775	22,810	5,965	26.2%
13 Amambay	16,903	3,380	3,380	23,663	12,182	11,481	94.2%
<b>AREA IV</b>	<b>57,379</b>	<b>15,524</b>	<b>11,480</b>	<b>84,383</b>	<b>54,720</b>	<b>29,663</b>	<b>54.2%</b>
	194,961	58,457	25,770	279,188	152,517	126,671	83.0%
	1,547.3	463.9	204.5	2,215.7	1,210.4	1,005.3	

\$/E x 1,000

NOTE: \* 125% of 1972 Tax

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**SUMMARY COMPARISON OF ESTIMATED NUMBER OF  
RURAL PROPERTIES OVER 10 HECTARES AND NUMBER  
OF TAXPAYERS PAYING RURAL TAX**

	PROP ON TAX ROLLS	PROP 10 HAS	% 10 HAS	EST.NO OF PROP	EST. 10 HAS	ACTIVE TAXPAYERS		
3	Cordillera	31,446	5,851	18.6%	28,760	5,349	5,646	100.0%
9	Paraguai	24,216	6,451	26.6%	31,740	8,442	4,998	59.2%
11	Central	55,388	3,694	6.7%	31,990	2,143	9,892	100.0%
	<u>AREA I</u>	<u>111,050</u>	<u>15,996</u>	<u>14.4%</u>	<u>92,490</u>	<u>15,934</u>	<u>4,998</u>	<u>59.2%</u>
4	Guaira	10,997	3,701	33.7%	17,000	5,729	1,333	23.2%
6	Caazapa	9,890	4,232	42.7%	15,090	6,443	1,517	23.5%
7	Itapua	27,802	12,753	45.9%	27,030	12,406	5,031	40.6%
8	Misiones	10,191	2,802	43.0%	8,250	3,547	1,500	42.2%
12	Neembucu	10,997	3,950	38.8%	9,510	3,690	2,556	69.2%
	<u>AREA II</u>	<u>65,398</u>	<u>27,438</u>	<u>42.0%</u>	<u>76,880</u>	<u>31,815</u>	<u>11,937</u>	<u>37.5%</u>
1	Concepcion	5,780	2,059	35.6%	14,050	5,002	657	13.1%
2	San Pedro	8,713	4,931	56.4%	20,330	11,466	1,955	17.1%
	<u>AREA III</u>	<u>14,493</u>	<u>6,990</u>	<u>48.2%</u>	<u>34,380</u>	<u>16,468</u>	<u>2,612</u>	<u>15.9%</u>
5	Caaguazu	12,143	6,223	51.2%	25,630	13,122	2,161	16.5%
10	Alta Parana	4,728	2,713	34.1%	13,490	4,600	925	20.0%
12	Amambay	2,949	1,813	61.5%	7,290	4,483	683	15.2%
	<u>AREA IV</u>	<u>19,820</u>	<u>10,749</u>	<u>54.2%</u>	<u>47,040</u>	<u>22,205</u>	<u>3,769</u>	<u>17.0%</u>

SUMMARY COMPARISON: NUMBER OF URBAN CADASTERED PROPERTIES  
AND NUMBER OF TAXPAYERS PAYING 1972 URBAN TAX.

		Urban Properties Cadastered	% of Total	1972 Taxpayers	% of Total
3	Cordillera	18,443		1,683	
9	Paraguari	6,170		1,051	
11	Central	82,360		12,900	
	Area I	106,973	60.5%	<del>15,651</del> (14.6%)	78.4%
4	Guaira	14,580		699	
6	Caazapa	1,095		63	
7	Itapua	19,097		1,173	
8	Misiones	3,211		212	
12	Ñeembucu	1,890		687	
	Area II	39,873	22.5%	2,834 (7.1%)	14.2%
1	Concepcion	13,370		716	
2	San Pedro	3,806		175	
	Area III	17,176	19.7%	891 (5.2%)	4.5%
5	Caaguazu	9,142		282	
10	Alto Parana	0		0	
13	Amambay	3,812		310	
	Area IV	12,954	7.3%	592 (4.6%)	3.0%
TOTALS		176,976	100.0%	19,951 (11.3%)	100.0%

ESTIMATED INCREASE IN DIRECT TAXES

	Total Receipts 1972 Taxpayers	% of Funds - Current Tax	Estimated Properties Paying 1972 Tax	80% of Estimated Number of Properties	Estimated Increase Taxable Properties	Weighted Factor	Current * 1972 Tax Collection	Estimated* Potential Tax	Estimated * Increase	
3	Cordillera	3,363								
9	Paraguari	2,352								
11	Central Area I	27,297 33,012	55.5%	18,322	107,032	88,710	3.6	8,831	31,790	22,959
4	Guaira	1,437								
6	Caazapa	116								
7	Itapua	2,710								
8	Misiones	403								
12	Ñeembucu Area II	1,028 5,694	64.3%	3,661	56,408	52,747	9.6	4,352	41,780	37,428
1	Concepcion	1,544								
2	San Pedro Area III	279 1,823	41.7%	760	20,488	19,728	13.0	706	9,180	8,474
5	Caaguazu	566								
10	Alto Parana	0								
13	Amambay Area IV	685 1,251	49.6%	620	20,744	20,124	13.0	443	5,760	5,317
<b>TOTAL</b>				23,363	204,672	181,309	-	14,322	88,510	74,188

Note: \* Amounts x 1,000

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APPENDIX B  
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	AREA I	AREA II	AREA III	AREA IV	TOTAL	% OF TOTAL
POTENTIAL URBAN TAX (IN \$/E)	31,790	41,780	9,180	5,760	88,510	24.1%
% OF TOTAL	35.9%	47.2%	10.4%	6.5%	(702.5) 100.0%	
POTENTIAL RURAL TAX (IN \$/E)	47,824	88,095	58,886	84,383	279,188	75.9%
% OF TOTAL	17.1%	31.6%	21.1%	30.2%	(2,215.8) 100.0%	
TOTAL POTENTIAL TAX (IN \$/E)	79,614	129,875	68,066	90,143	367,698	100.0%
% OF TOTAL	21.7%	35.3%	18.5%	24.5%	(2,918.3) 100.0%	

	CURRENT 1972 TAX	EQUIV. 1974 TAX	ESTIMATED POTENTIAL TAX	ESTIMATED INCREASE	PER CENT INCREASE
URBAN	14,322	14,322	88,510	74,188	518%
RURAL	122,016	152,517	279,188	126,671	83%
TOTAL	136,338	166,839	367,698 (IN \$/E)	200,859 (1,594)	120%

(NOTE: Amounts X 1,000)

SUMMARY INCREASE IN TAXES-1975 TO 1984

MUNICIPALITY		INCREASE DIRECT TAX	YEAR	TOTAL INCREASE PER YEAR	BACK	TOTAL INCREASE PER YEAR	TOTAL TAX INCREASE PER YEAR	IN \$/E	ACCUM. IN \$/E
					TAX 20% RURAL PER YEAR				
Alto Parana	R	5,965							
	U	1,855	1975		1,193				
Guaira and Caaguazu	R	17,217		7,820		1,193	9,013	71,530	71,530
	U	10,535	1976		3,443				
Caazapa and Itapua	R	28,529		25,572		4,636	10,208	319,110	390,640
	U	10,090	1977		5,706				
Misiones and Neembucu	R	18,883		74,191		10,342	74,533	670,900	1,061,540
	U	3,857	1978		2,557				
Concepcion, San Pedro and Amambay	R	37,406		90,931		12,919	103,850	824,210	1,855,750
	U	9,049	1979		7,471				
Cordillera, Central and Paraguari	R	24,573		137,086		20,400	157,786	1,252,270	3,138,020
	U	38,000	1980		4,934				
				204,157		24,241	224,998	1,785,700	4,923,720
			1981						
			1982			20,698	221,555	1,756,370	6,682,090
			1983			14,992	215,849	1,713,090	8,395,180
			1984			12,415	213,272	1,692,630	10,087,810
						4,934	205,791	1,633,260	11,721,070
			TOTAL	1,350,185		126,670	1,476,855	11,721,070	

(Local Currency amounts X 1,000)

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APPLICATION OF CADASTRAL PROJECT  
FOR LAND REGISTRATION

CADASTER: The two essential elements of a cadaster are:  
(i) an unambiguous definition of all parcels of land within a determined area, which is usually an administrative sub-division of a country; and  
(ii) a related descriptive register which contains, in respect to each parcel of land, details of effecting rights of ownership or other status of possession.

In this context, there are two possible types of land registers, namely, registers of deeds and registers of title.

DEED REGISTERS. Under a system of registration of deeds it is the deed itself which is registered. Thus, a deed is a record of an isolated transaction and provides evidence that that particular transaction took place, but it is not in itself proof of the legal right of the parties to conduct that transaction and consequently is not evidence of its legality. Before any dealing can be safely effected, the ostensible owner must trace his ownership back to a good root of title.

Where title is registered, this process of tracing ownership back to a good root of title is unnecessary. The land parcel itself forms the unit of registration. Consequently, the register itself is proof of title and its correctness is usually guaranteed by the State.

If, however, under a system of registration of deeds, all deeds are related surely to the parcels of land which they affect, and where steps have been taken to examine deeds before registration to ensure their consistency with previously registered deeds, their legal validity and their bonafides, the system provides security comparable with that provided by registration of title.

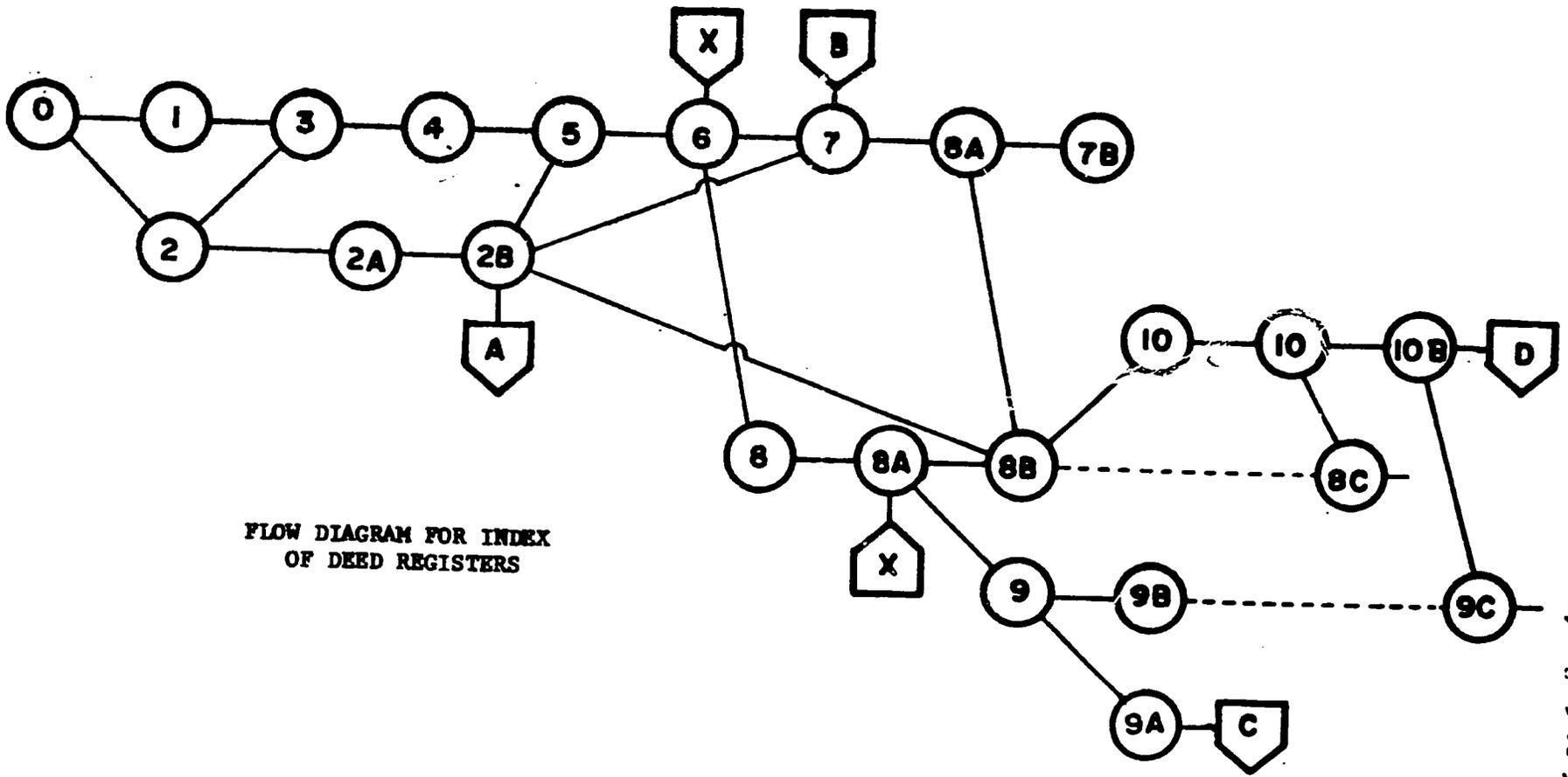
In either system, once the record has been established it must from that moment be continuously maintained if it is to retain its usefulness, and the law must provide for the compulsory registration of any information which affects the parcel definition or the related descriptive record of rights.

Since Paraguay has the basic laws required to establish an effective land register, and since the proposed project requires an index of the owners of the deeds of registered properties in order to properly identify land parcels according to the criteria of ownership or possession, it is proposed to use this index as the essential first step for referencing the cadastral identification of land parcels to the registered deeds. The index would consist of the following:

1. Owner's name
2. Inscription number
3. Cadastral number

The Property Registry has agreed to maintain the index once it is compiled. Therefore, the registry employees will be contracted to compile the index at G/10 for each inscription. Since there are about 500,000 inscriptions, the cost would be G/5.0 million or \$39,685. In addition, the registry office will require 20 index files at \$135 each or \$2,700.

The deed registers which are separated by departments, are located in Asuncion. In order to provide the land owners with a more convenient means to effect transfers, mortgages, etc., these registers should be located in the capital city of each department. Therefore, the GOP Ministry of Justice will be encouraged to consider this possibility.



FLOW DIAGRAM FOR INDEX  
OF DEED REGISTERS

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FLOW DIAGRAM FOR INDEX OF DEED REGISTERS

- 0-2 Design Registry Abstract Form
- 2-3 Print Registry Abstract Form
- 2-2A Design Proprietary Index Card
- 2A-2B Print Proprietary Index Card in Four Colors:
  - a. White for private property
  - b. Pink for municipal (ejido) land
  - c. Green for national land
  - d. Blue for land under agrarian reform
- A Index Cards in Colors Available -----
- 0-1 Negotiate Contract with property registry office for making abstract of current deed inscriptions
- 1-3 Contract Personnel
- 3-4 Train Personnel in Procedures
- 4-5 Compile abstract of current deed inscriptions according to priority by departments
- 2B-5 Index cards available (white)
- 5-6 Prepare (type) index cards using abstract forms (Original and copy)
- X-6 Filing Cabinets available
- 6-7 File original index cards alphabetically by department
- 6-8 Send copy of index card to Cadastral Dept. -----
- A-7 Receive cadastral certificate from property tax office
- 2B-7 Blank index cards available
- 7-7A Prepare index card for change in deed inscription
- 7A-7B File index card, maintaining alphabetical sequence
- 7A-7B Return cadastral certificate with data on current inscription, i.e. notification of change in property data -----
- 8-2A Prepare IBM card for each index card
- 8A-9 Prepare alphabetical lists by districts
- 9 Send lists to Cadastral department
- C Lists available for field verification of ownership of registered land parcels

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- 9-9B File IBM Cards
  - A Filing cabinets available
  - 6A-6B File copy of index card alphabetically by department
  - 7A-7B Receive notification of change in current deed inscription
  - 8A-8B Blank index cards available
  - 9A-10 Prepare index card for change in deed inscription
  - 10-10A Prepare IBM card for new index cards
  - 10A-10B Prepare alphabetical lists each week reflecting changes in districts being surveyed
    - B Lists available for field parties
  - 10A-9C File index card maintaining alphabetical sequence
  - 10A-9C File IBM cards
  - 9C- Prepare lists of districts as required for on site verification of ownership by field parties

~~REF ID: A66484~~

CHECKLIST OF STATUTORY CRITERIA

(Alliance for Progress)

In the right-hand margin, for each item, write answer or, as appropriate, a summary of required discussion. As necessary, reference the section(s) of the Capital Assistance Paper, or other clearly identified and available document, in which the matter is further discussed. This form may be made a part of the Capital Assistance Paper.

The following abbreviations are used:

FAA - Foreign Assistance Act of 1961, as amended.

App. - Foreign Assistance and Related Agencies Appropriations Act, 1971.

MMA - Merchant Marine Act of 1936, as amended.

COUNTRY PERFORMANCE

Progress Towards Country Goals

1. FAA § 208; §.251(b).

A. Describe extent to which country is:

(1) *Making appropriate efforts to increase food production and improve means for food storage and distribution.*

(2) *Creating a favorable climate for foreign and domestic private enterprise and investment.*

(1) The Government of Paraguay has made substantial progress in the implementation of a new integrated agriculture program designed to increase food production. During the period 1970 to 1973 soybean production increased from 45,000 to 95,000 metric tons and rice production from 20,000 to 45,000 metric tons.

(2) The GOP has an investment law (Ley No. 216, Nov. 9, 1970) which offers advantageous terms to foreign investors. The GOP encourages foreign private investors and supports OPIC's investment guarantee programs. A private development bank (COMDESA) has been created with GOP and AID assistance.

~~SECRET~~

(3) *Increasing the public's role in the developmental process.*

(4) (a) *Allocating available budgetary resources to development.*

(b) *Diverting such resources for unnecessary military expenditure (See also Item No. 16 and intervention in affairs of other free and independent nations.) (See also Item No. 14.)*

(5) *Willing to contribute funds to the project or program.*

(6) *Making economic, social, and political reforms such as tax collection improvements and changes in land tenure arrangements, and making progress toward respect for the rule of law, freedom of expression and of the press, and recognizing the importance of individual freedom, initiative, and private enterprise.*

(3) The GOP continues substantial efforts to develop the interior of the country by providing land to colonists, expanding roads, providing electric power to small towns, and by providing agricultural credit.

(4)(a) Paraguay allocates a substantial portion of its national budget to development.

(4)(b) There have been no substantial increases in military expenditures and there is no intervention in other countries' affairs.

(5) The GOP is contributing the equivalent of \$1,200,000 to this project.

(6) The GOP has been making significant improvements in the tax administration area. In the past year a decentralization effort in the tax offices resulted in the first Income Tax audits in the Interior in Paraguay's history; 3 new regional property tax offices were opened and there is a proposal to open 3 new income tax offices. The audits were accompanied by taxpayer information programs. A new collection function was established in the Internal Tax Office. That office accounts for over 50% of Paraguay's total tax revenue. In the Income/Sales Tax Office with no significant revenue charge collection through August 1973 are up over 18% from the same period in 1972.

~~Administrative~~

(7) Adhering to the principles of the Act of Bogota and Charter of Punta del Este.

(7) Paraguay adheres to the principles of the Act of Bogota and the Charter of Punta del Este.

(8) Attempting to repatriate capital invested in other countries by its own citizens.

(8) Not applicable since Paraguay's investment in other countries is negligible.

(9) Otherwise responding to the vital economic, political, and social concerns of its people, and demonstrating a clear determination to take effective self-help measures.

(9) A new Constitution was adopted in November 1967 which increased popular participation in government by providing a popularly elected bi-cameral legislature. Paraguay is contributing, from its own resources, toward agricultural and educational reform activities as well as to essential governmental services in the agricultural and educational sectors. The last two CIAP Sub Committees have established revenue targets, rather than specific tax reform measures for the GOP. Although the GOP failed to meet the CIAP revenue increase targets for 1972, this year the GOP will almost certainly exceed the 1973 revenue targets agreed upon by the May 1973 CIAP, Sub Committee.

B. Are above factors taken into account in the furnishing of the subject assistance?

B. The above factors have been taken into account in the furnishing of subject assistance.

### Treatment of U.S. Citizens

2. FAA § 620(c). If assistance is to government, is the government liable as debtor or unconditional guarantor on any debt to a U.S. citizen for goods or services furnished or ordered where (a) such citizen has exhausted available legal remedies and (b) debt is not denied or contested by such government?

2. No.

~~TOP SECRET (FOUO)~~

3. FAA § 620(e)(1). *If assistance is to a government, has it (including government agencies or subdivisions) taken any action which has the effect of nationalizing, expropriating, or otherwise seizing ownership or control of property of U.S. citizens or entities beneficially owned by them without taking steps to discharge its obligations toward such citizens or entities?*
3. No.
4. FAA § 620(o); Fishermen's Protective Act. § 5. *If country has seized, or imposed any penalty or sanction against, any U.S. fishing vessel on account of its fishing activities in international waters,*
4. Not applicable.
- a. *has any deduction required by Fishermen's Protective Act been made?*
- a. Not applicable.
- b. *has complete denial of assistance been considered by A.I.D. Administrator?*
- b. Not applicable.

~~SECRET~~Relations with U.S. Government and  
Other Nations

5. FAA § 620(d). If assistance is for any productive enterprise which will compete in the United States with United States enterprise, is there an agreement by the recipient country to prevent export to the United States of more than 20% of the enterprise's annual production during the life of the loan?
5. Not applicable.
6. FAA § 620(j). Has the country permitted, or failed to take adequate measures to prevent, the damage or destruction, by mob action, of U.S. property?
6. No.
7. FAA § 620(l). If the country has failed to institute the investment guaranty program for the specific risks of expropriation, in convertibility or confiscation, has the A.I.D. administration within the past year considered denying assistance to such government for this reason?
7. Paraguay has signed a Specific Risk Guarantee Agreement with the U.S.
8. FAA § 620(q). Is the government of the recipient country in default on interest or principal of any A.I.D. loan to the country?
8. Paraguay is not in default on interest or principal on any AID loan covered by this Act.

~~TOP SECRET (S)~~

9. FAA § 620(t). Has the country severed diplomatic relations with the United States? If so, have they been resumed and have new bilateral assistance agreements been negotiated and entered into since such resumption?
9. Not applicable. Paraguay has consistently maintained diplomatic relations with the United States.
10. FAA § 620(u). What is the payment status of the country's U.N. obligations? If the country is in arrears, were such arrearages taken into account by the A.I.D. Administrator in determining the current A.I.D. Operational Year Budget?
10. Paraguay arrears to the UN are below the limits specified in Art. 19 of the UN Charter.
11. FAA § 620(a). Does recipient country furnish assistance to Cuba or fail to take appropriate steps to prevent ships or aircraft under its flag from carrying cargoes to or from Cuba?
11. No.
12. FAA § 620(b). If assistance is to a government, has the Secretary of State determined that it is not controlled by the international Communist movement?
12. The Secretary of State has determined that Paraguay is not controlled by the international communist movement.

~~Article 249(b)(1)(i)(x)~~

13. FAA § 620(f). Is recipient country a Communist country? 13. No.
14. FAA § 620(i). Is recipient country in any way involved in (a) subversion of, or military aggression against, the United States or any country receiving U.S. assistance, or (b) the planning of such subversion or aggression? 14. No.
15. FAA § 620(n). Does recipient country furnish goods to North Viet-Nam or permit ships or aircraft under its flag to carry cargoes to or from North Viet-Nam? 15. No.

Military Expenditures

16. FAA § 620(s). What percentage of country budget is for military expenditures? How much of foreign exchange resources spent on military equipment? How much spent for the purchase of sophisticated weapons systems? (Consideration of these points is to be coordinated with the Bureau for Program and Policy Coordination, Regional Coordinators and Military Assistance Staff (PPC/RC).)
16. For the years 1971-1973, 18.0% of Paraguay's Central Government budget was allocated to its Ministry of Defense. An estimated maximum of \$1.0 million in foreign exchange were spent on military equipment in 1972. No funds were expended on sophisticated weapons systems. AID/W has determined that Paraguay is not devoting an unnecessary percentage of its budget for military purposes.

~~UNCLASSIFIED~~CONDITIONS OF THE LOANGeneral Soundness

17. FAA § 201(d). *Information and conclusion on reasonableness and legality (under laws of country and the United States) of lending and relending terms of the loan.*
17. Terms are legal and reasonable under both U.S. and Paraguayan law.
18. FAA § 251(b)(2); § 251(e). *Information and conclusion on activity's economic and technical soundness. If loan is not made pursuant to a multilateral plan, and the amount of the loan exceeds \$100,000, has country submitted to A.I.D. an application for such funds together with assurances to indicate that funds will be used in an economically and technically sound manner?*
18. The activity is concluded to be economically and technically sound. The application for this loan, plus detailed discussions before and after receipt of the application give sufficient information and assurance that the funds will be used in an economically and technically sound manner.
19. FAA § 251(b). *Information and conclusion on capacity of the country to repay the loan, including reasonableness of repayment prospects.*
19. It is concluded that the Borrower has the capacity to repay and that there is reasonable assurance of repayment.
20. FAA § 611(a)(1). *Prior to signing of loan will there be (a) engineering, financial, and other plans necessary to carry out the assistance and (b) a reasonably firm estimate of the cost to the United States of the assistance?*
- 20.(a) and (b). Not applicable.

~~AID 1240-2 (4-71)~~

21. FAA § 611(a)(2). If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of purposes of loan?
21. Other than the normal legislative approval for the Loan, no further legislative action is required.
22. FAA § 611(e). If loan is for Capital Assistance, and all U.S. assistance to project now exceeds \$1 million, has Mission Director certified the country's capability effectively to maintain and utilize the project?
22. See Annex I, page 1 for Mission Director's Certification.
23. FAA § 251(b). Information and conclusion on availability of financing from other free-world sources, including private sources within the United States.
23. Financing for this project is not available from other free-world sources, including private sources within the U.S. at a reasonable cost.
- Loan's Relationship to Achievement of Country and Regional Goals
24. FAA § 207; § 251(a). Extent to which assistance reflects appropriate emphasis on: (a) encouraging development of democratic, economic, political, and social institutions; (b) self-help in meeting the country's food needs; (c) improving availability of trained manpower in the country; (d) programs designed to meet the country's health needs, or
24. The tax revenues generated by this project will increase the GOP's resources available for economic development programs. The purpose of the project is to improve public administration.



~~ANNEX III~~

29. FAA § 281(b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civic education and training in skills required for effective participation in governmental and political processes essential to self-government.
29. The Loan Financed Project is designed to be carried out with the country's intellectual and technical resources, with minimum foreign technical assistance. The results of the project will encourage institutional development in the Property Tax Office, the Property Registry Office, and other governmental offices dealing with the country's land resources.
30. FAA § 601(a). Information and conclusions whether loan will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture, and commerce; and (f) strengthen free labor unions.
30. (a) Not directly.  
 (b) Not directly.  
 (c) Establishes the basis for agricultural extension credit, and will facilitate the obtaining of mortgages on properties.  
 (d) Discourages the monopolistic practice of having exceedingly large rural landholdings by applying an "excess size" (over 5,000 hectares) tax at progressive rates.  
 (e) Improves technical efficiency in the mapping, cadastral and property tax activities.  
 (f) Not directly.
31. FAA § 619. If assistance is for newly independent country; is it furnished through multilateral organizations or plans to the maximum extent appropriate?
31. Not applicable.
32. FAA § 251(h). Information and conclusion on whether the activity is consistent with the findings and recommendations of the Inter-American Committee for the Alliance for Progress in its annual review of national development activities.
32. This loan is consistent with the recommendations of the May 1973 CIAP Sub-Committee on Paraguay which reiterated the need for the GOP to adopt measures that restructure its tax system; broaden its tax base, making it more equitable; and establish sources of financing which will permit the execution of development projects.

~~XXXXXXXXXXXX~~

33. FAA § 251(g). *Information and conclusion on use of loan to assist in promoting the cooperative movement in Latin America.*
33. Not applicable.
34. FAA § 209; § 251(b)(8). *Information and conclusion whether assistance will encourage regional development programs, and contribute to the economic and political integration of Latin America.*
34. Not applicable.

Loan's Effect on U.S. and A.I.D. Program

35. FAA § 251(b)(4); § 102. *Information and conclusion on possible effects of loan on U.S. economy, with special reference to areas of substantial labor surplus, and extent to which U.S. commodities and assistance are furnished in a manner consistent with improving the U.S. balance of payments position.*
35. The effect on the U.S. economy will be negligible. It is expected that U.S. suppliers will furnish the bulk of goods and services required by the project.
36. FAA § 601(b). *Information and conclusion on how the loan will encourage U.S. private trade and investment abroad and how it will encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).*
36. Not applicable.

~~Sub 240-20(4-77)x~~

37. FAA § 601(d). If a capital project, are engineering and professional services of U.S. firms and their affiliates used to the maximum extent consistent with the national interest?
37. Not applicable.
38. FAA § 602. Information and conclusion whether U.S. small business will participate equitably in the furnishing of goods and services financed by the loan.
38. U.S. small business will participate equitably on the dollar procurement of equipment and materials.
39. FAA § 620(h). Will the loan promote or assist the foreign aid projects or activities of the Communist-Bloc countries?
39. No.
40. FAA § 621. If Technical Assistance is financed by the loan, information and conclusion whether such assistance will be furnished to the fullest extent practicable as goods and professional and other services from private enterprise on a contract basis. If the facilities of other Federal agencies will be utilized, information and conclusion on whether they are particularly suitable, are not competitive with private enterprise, and can be made available without undue interference with domestic programs.
40. The project proposes to utilize the services of technical personnel from the Regional Development Office of OAS (RDO-OAS) and from the Inter-American Geodetic Survey (IMA-IAGS). Both agencies have offices in-country that can provide administrative, logistical and technical backstopping for their personnel. Due to the nature of the bilingual technical assistance requirements, this proposal is not considered to be competitive with any private enterprise from domestic sources.

~~AI Doc 1240 sub (4071)~~

41. FAA § 252(a). Total amount of money under loan which is going directly to private enterprise, is going to intermediate credit institutions or other borrowers for use by private enterprise, is being used to finance imports from private sources, or is otherwise being used to finance procurements from private sources.

41. Approximately \$160,000 in services and \$585,000 in goods financed under this loan will be procured from private sources.

Loan's Compliance with Specific Requirements

42. FAA § 201(d). Is interest rate of loan at least 2% per annum during grace period and at least 3% per annum thereafter?

42. Yes.

43. FAA § 608(a). Information on measures to be taken to utilize U.S. Government excess personal property in lieu of the procurement of new items.

43. U.S. Government owned excess property will be purchased as is feasible.

44. FAA § 604(a). Will all commodity procurement financed under the loan be from the United States except as otherwise determined by the President?

44. Commodities purchased with loan funds will have their source and origin in the U.S. and other eligible countries.

45. FAA § 604(b). What provision is made to prevent financing commodity procurement in bulk at prices higher than adjusted U.S. market price?

45. Competitive bidding procedures will be used for the procurement of all commodities.

~~AD 1340-2(4-71)~~

46. FAA § 604(d). If the cooperating country discriminates against U.S. marine insurance companies, will loan agreement require that marine insurance be placed in the United States on commodities financed by the loan? 46. Yes.
47. FAA § 604(e). If offshore procurement of agricultural commodity or product is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity? 47. Not applicable.
48. FAA § 611(b); App. § 101. If loan finances water or water-related land resource construction project or program, is there a benefit-cost computation made, insofar as practicable, in accordance with the procedures set forth in the Memorandum of the President dated May 15, 1962? 48. Not applicable.
49. FAA § 611(o). If contracts for construction are to be financed, what provision will be made that they be let on a competitive basis to maximum extent practicable? 49. Not applicable.
50. FAA § 620(g). What provision is there against use of subject assistance to compensate owners for expropriated or nationalized property? 50. No loan funds will be used to compensate owners for expropriated or nationalized property.

~~Attachment 2000000000~~

51. FAA § 612(b); § 636(h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the United States are utilized to meet the cost of contractual and other services.
51. The GOP is making a substantial local currency contribution to the project. No U.S. owned foreign currencies are available for this project.
52. App. § 104. Will any loan funds be used to pay pensions, etc., for military personnel?
52. No.
53. App. § 106. If loan is for capital project, is there provision for A.I.D. approval of all contractors and contract terms?
53. Yes.
54. App. § 108. Will any loan funds be used to pay U.N. assessments?
54. No.
55. App. § 109. Compliance with regulations on employment of U.S. and local personnel for funds obligated after April 30, 1964 (A.I.D. Regulation 7).
55. Will comply
56. FAA § 636(i). Will any loan funds be used to finance purchase, long-term lease, or exchange of motor vehicle manufactured outside the United States, or any guaranty of such a transaction?
56. No.

~~Atto 1349-2064-711x~~

57. App. § 401. Will any loan funds be used for publicity or propaganda purposes with the United States not authorized by the Congress?
57. No.
58. FAA § 620(k). If construction of productive enterprise, will aggregate value of assistance to be furnished by the United States exceed \$100 million?
58. Not applicable.
59. FAA § 612(d). Does the United States own excess foreign currency and, if so, what arrangements have been made for its release?
59. There is no U.S. owned excess Paraguayan currency.
60. MMA § 901.b. Compliance with requirement that at least 50 per centum of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed with funds made available under this loan shall be transported on privately owned U.S.-flag commercial vessels to the extent that such vessels are available at fair and reasonable rates.
60. This provision will be included in the Loan Agreement.

December 20, 1973

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LOAN AUTHORIZATION

Provided from: Alliance for Progress Funds

PARAGUAY: Cadastral Survey and Property  
Tax Improvement

Pursuant to the authority vested in the Deputy U.S. Coordinator, Alliance for Progress, by the Foreign Assistance Act of 1961, as amended, and the delegations of authority issued thereunder, I hereby authorize the establishment of a loan ("Loan") pursuant to Part I, Chapter 2, Title VI, Alliance for Progress, of said Act, to the Republic of Paraguay ("Borrower") of not to exceed two million three hundred thousand United States Dollars (\$2,300,000) to assist in financing the United States dollar and local currency costs of a project of cadastral survey and property tax improvement in eastern Paraguay ("Project"), this loan to be subject to the following terms and conditions:

1. Interest and Terms of Repayment. Borrower shall repay the Loan to the Agency for International Development ("A.I.D.") in United States Dollars within forty (40) years from the first disbursement under the Loan, including a grace period of not to exceed ten (10) years. Borrower shall pay to A.I.D. in United States Dollars on the outstanding balance of the Loan interest at the rate of two (2) percent per annum during the grace period and three (3) percent per annum thereafter.
2. Other Terms and Conditions.
  - (a) Goods, services (except for ocean shipping) and marine insurance financed under the Loan shall have their source and origin in Paraguay and countries included in A.I.D. Geographic Code 941. Marine insurance may be financed under the Loan only if it is obtained on a competitive basis and any claims thereunder are payable in convertible currencies. Ocean shipping financed under the Loan shall be procured in any country included in A.I.D. Geographic Code 941.
  - (b) United States Dollars utilized under the Loan to finance local currency costs shall be made available pursuant to procedures satisfactory to A.I.D.
  - (c) The Loan shall be subject to such other terms and conditions as A.I.D. may deem advisable.

\_\_\_\_\_  
Deputy U.S. Coordinator

\_\_\_\_\_  
Date



Department of State

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December 20, 1973 UNCLASSIFIED AID-DLC/P-2016

CDO ANNEX V Page 1 of 1

TELEGRAM

OFFICIAL USE ONLY

ACTION: CDO

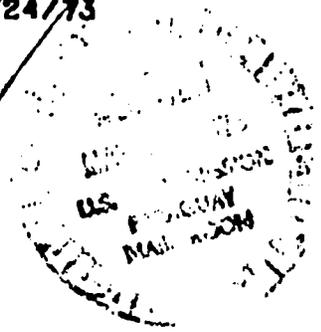
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Classification

5/24/73

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E.O. 11652: N/A

SUBJ: IRR CADASTRAL SURVEY LOAN

MAY 11TH DAEC MEETING APPROVED MISSION PROCEEDING WITH INTENSIVE REVIEW OF CADASTRAL SURVEY LOAN. THE FOLLOWING MATTERS SHOULD BE SPECIFICALLY ADDRESSED IN THE CAP:

1. THE RATIONALE FOR THE LOAN SHOULD BE PRESENTED IN THE CONTEXT OF ALTERNATIVE ASSISTANCE PROJECTS WHICH WOULD HELP INCREASE GOP REVENUE COLLECTION. THE CAP SHOULD OUTLINE THESE ALTERNATIVES AND EXPLAIN WHY LOAN FUNDS DIRECTED TOWARD THE PROPOSED PROJECT RATHER THAN THE ALTERNATIVES WILL RESULT IN A HIGHER INVESTMENT YIELD.
2. A CLOSE SCRUTINY OF THE DOLLAR COMPONENT OF THE PROJECT IS RECOMMENDED. FOR EXAMPLE, IT IS EXPECTED THAT THE VEHICLE REQUIREMENTS WILL BE DISCUSSED IN TERMS OF (A) WHETHER MOTOR BIKES MIGHT EQUALLY SERVE THE PURPOSE, PARTICULARLY IN THE URBAN AREAS, AND (B) THE NUMBER OF ACTUAL AREAS OF SIMULTANEOUS ACTIVITY. A FURTHER PROCUREMENT PROPOSAL WHICH SHOULD BE EXAMINED THOROUGHLY CONCERNS AERIAL PHOTOGRAPHY. CAP SHOULD FULLY JUSTIFY ANY DECISION TO UTILIZE COMMERCIAL FIRMS IN LIEU OF RELIANCE, IN WHOLE OR IN PART, ON THE CAPABILITIES AVAILABLE UNDER THE BASIC MAPPING PROGRAM OF THE MINISTRY OF DEFENSE.
3. CONVERSELY, A THOROUGH ANALYSIS ALSO SHOULD BE MADE OF THE PROPOSED LOCAL CURRENCY FINANCING, PARTICULARLY IN JUSTIFICATION OF THE FINANCING OF PER DIEM.
4. THE INTENSIVE REVIEW SHOULD CONSIDER THE FEASIBILITY OF THE GOP ADOPTING SOME NATIONAL REFERENCE SYSTEM FOR LAND BOUNDARY IDENTIFICATION. AT A MINIMUM, CERTAIN MERIDIAN OF LONGITUDE MIGHT BE ESTABLISHED IN URBAN AREAS TO WHICH THE CADASTERS COULD BE REFERENCED AND LATER TIED INTO A NATIONAL LAND REFERENCE SYSTEM. STEPS IN THIS DIRECTION MIGHT BE BUILT INTO THE LOAN THROUGH GOP COVENANTS. SER/ENGR WILL SHORTLY FORWARD SEVERAL TECHNICAL CONSIDERATIONS FOR POSSIBLE DISCUSSIONS IN THE CAP.
5. AUTHORITY TO CONDUCT INTENSIVE REVIEW FOR THIS PROPOSED LOAN EXPIRES JUNE 1, 1974. RUSH

10-10-73  
SUFFICIENT

PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

(INSTRUCTION: THIS IS AN OPTIONAL FORM WHICH CAN BE USED AS AN AID TO ORGANIZING DATA FOR THE PAR REPORT. IT NEED NOT BE RETAINED OR SUBMITTED.)

Life of Project:  
From FY 1974 to FY 1978  
Total U.S. Funding \$2,300,000  
Date Prepared: October 23, 1973

Project Title & Number: CADASTRAL SURVEY AND PROPERTY TAX IMPROVEMENT LOAN

PAGE 1

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS								
<p>Program or Sector Goal: The broader objective to which this project contributes:</p> <p><b>To increase Paraguay's Real Property Tax Collections.</b></p>	<p>Measures of Goal Achievement:</p> <p>Increment to Property Tax Receipts: (000 \$s.)</p> <table data-bbox="580 517 828 627"> <tr> <td>1975</td> <td>9.013</td> </tr> <tr> <td>1976</td> <td>40.208</td> </tr> <tr> <td>1977</td> <td>84.533</td> </tr> <tr> <td>1978</td> <td>103.850</td> </tr> </table>	1975	9.013	1976	40.208	1977	84.533	1978	103.850	<p>Review of Real Property Tax Office records.</p>	<p>Assumptions for achieving goal targets:</p> <p>GOP will do what is necessary to collect taxes owed that have been identified under this project.</p>
1975	9.013										
1976	40.208										
1977	84.533										
1978	103.850										

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December 20, 1973

PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

Life of Project: \_\_\_\_\_  
From FY 1974 to FY 1978  
Total U.S. Funding: \$2,300,000  
Date Prepared: October 23, 1973

Project Title & Number: CADASTRAL SURVEY AND PROPERTY TAX IMPROVEMENT LOAN

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Project Purpose:</p> <p>To provide the Real Property Tax Office (RPTO) with the basic elements required to carry out and to institutionalize a functional and more equitable property tax assessment and collection program.</p>	<p>Conditions that will indicate purpose has been achieved: End of project status.</p> <ol style="list-style-type: none"> <li>1. A new modernized property tax billing system incorporating 250,160 rural and 225,840 urban properties.</li> <li>2. Capacity of the RPTO to record and maintain taxable properties on its rolls.</li> <li>3. A decentralized Real Property Tax administration mechanism with 12 regional offices in the interior of the country.</li> <li>4. Improved GOP capability for planning and executing a wide variety of development programs involving land resources through the availability of basic information on land distribution, tenure and use.</li> <li>5. Transfer of property facilitated through more positive title identification.</li> <li>6. A centralized land surveying system established, combining the cadastral surveying activities of the RPTO with the land surveying activities of the Ministry of Public Works and the Agrarian Reform Agency. (No special input required).</li> </ol>	<ol style="list-style-type: none"> <li>1. Review of RPTO records.</li> <li>2. id. id.</li> <li>3. id. id.</li> <li>4. Review of National Planning Secretariat plans.</li> <li>5. Review of General Property Register records.</li> <li>6. Review of RPTO records.</li> </ol>	<p>Assumptions for achieving purpose:</p> <ol style="list-style-type: none"> <li>1. The GOP will provide sufficient resources to staff and maintain departmental cadaster offices. Each office should open as cadastral activities begin in the Department.</li> </ol>

PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

Life of Project:  
From FY 1974 to FY 1978  
Total U.S. Funding \$2,300,000  
Date Prepared: October 23, 1974

Project Title & Number: CADASTRAL SURVEY AND PROPERTY TAX IMPROVEMENT LOAN

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Outputs:	Magnitude of Outputs:		Assumptions for achieving outputs:
1. Maps from aerial photography	1. 53,000 sq. kilometers of new photography at 1:30,000 scale at the end of the first year of operation.	1. Review of Real Property Tax Office records. Review of project progress reports.	
2. Cadastral plans	2. 1,380 plans at 1:20,000 scale by project completion.	2. id. id.	
3. Taxable properties identified and on tax rolls.	3. 1974 - 20,240 properties 1975 - 121,440 " 1976 - 101,200 " 1977 - 161,920 " 1978 - 101,200 " BOP 506,000 "	3. id. id.	
4. Valuation records completed using basic cadastral data.	4. Records completed for 506,000 properties by project completion.	4. id. id.	
5. IBM cards punched for billing purposes.	5. Cards punched for 506,000 properties by project completion.	5. id. id.	
6. Delinquent taxpayers visited.	6. Targets will be determined after field collection is established.	6. id. id.	
7. Property owner index to the property deed inscriptions.	7. Index completed for all the properties registered.	7. Review of General Property Register records.	
8. Trained personnel added to the RPTO.	8. At least 65 by 1978.	8. Review of RPTO records.	

PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

Life of Project:  
From FY 1974 to FY 1978  
Total U.S. Funding \$2,300,000  
Date Prepared: October 25, 1973

Project Title & Number: CADASTRAL SURVEY AND PROPERTY TAX IMPROVEMENT LOAN

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Inputs:	Implementation Target (Type and Quantity)		Assumptions for providing inputs:
<u>AID</u>			
a. Aerial Photography	Rent of aircraft, photos \$ 160,000	Review of Project Records	
b. Vehicles	30 vehicles \$ 170,000	Review of Project Records	
c. Technical Assistance	42 man-months \$ 150,000	Review of AID Records	
d. Equipment	Technical Office \$ 294,000	Review of Project Records	
e. Materials	Punch cards, parts, etc. \$ 121,000	Review of Project Records	
f. Operation Costs	Personnel and other \$ 1,286,000	Review of Project Records	
g. Registry Index	Personnel and other \$ 40,000	Review of Project Records	
h. Contingency	\$ 74,000	Review of Project Records	
<u>GOP</u>			
a. Salaries	\$ 895,000	Review of Project Records	
b. Dept. Tax Offices	\$ 134,000	Review of Project Records	
c. Social Security	\$ 71,000	Review of Project Records	
d. Vehicle Insurance	\$ 19,000	Review of Project Records	
e. Facilities	\$ 16,000	Review of Project Records	
f. Contingencies	\$ 65,000	Review of Project Records	