

*Memorandum*

TO : Mr. Frank B. Kimball  
Director  
USAID/Honduras

FROM : Eric R. Zallman  
Capital Development Office  
USAID/Honduras

SUBJECT: Status of Loan No. 522-T-024:  
National Cadaster Program

DATE: March 31, 1976

I. Summary and ConclusionsA. Summary

1. The Cadaster Demonstration Project may be completed within six months. Field work is complete, and all mapping activities except one (detailed resources maps) have been started. Assuming that the mapping is completed within the next six months, the Project will have cost roughly \$1.8 million (\$900,000 of A.I.D. Grant funds, \$100,000 of A.I.D. Loan funds, and \$800,000 of GOH counterpart funds). This is 63% higher than the original budget of \$1,102,200 (\$685,000 A.I.D. Grant and \$517,200 GOH counterpart). It will have taken 52 months instead of the 36 months originally anticipated.
2. The Demonstration Project disclosed that roughly 55% more properties existed in the Project area than had been estimated at the time of signing the Grant Agreement, a finding being used in the detailed planning of the National Cadaster Project.
3. The National Cadaster Project is just beginning. The detailed Work Plan is in preparation, copying of property registry inscriptions has started, and a canvassing of GOH agencies to catalog existing data on natural resources has been carried out.
4. The first staffing and procurement steps have been taken. Vehicles have been ordered; training has started; technical assistance, aerial photography and photo inspection services have been contracted; and key positions in the Cadaster Office have been filled. Consultants in property mapping and registry, natural resources, and computer services are on board.
5. Rapid changes in Project leadership (5 Directors or Interim Directors in less than a year) have impeded the progress of the Project. Key decisions have not been taken on time, work procedures and relationships have



been unstable, and coordination with other GOH agencies has not been achieved. The current Director, Ing. Julio Zepeda, appears to have some permanence. He is competent administrator who understands the Project.

6. The arrival of the Berger consultant group in early March has given new impetus to the Project. As a result of their analysis of the Project changes in mapping techniques are being proposed which are expected to achieve cost reductions and significantly shorten the time needed for Project execution. The consultants are also beginning to define the Data Use Plan required prior to disbursements (except for TA) for the Natural Resources Activity.

#### B. Conclusions:

1. After a labored start, the National Project is beginning to move. The key elements - trained personnel, Consultants, vehicles, management - are in place. The Work Plan should provide the focus for a well organized, high level of activity.

2. The problems encountered in carrying out the Demonstration Project have served as a basis for improving aspects of the technical design of the National Project. However, the CDP's main value has been in testing the capability of GOH institutions and the political climate for a nation-wide effort.

3. The cost of the National Project, as presently defined, will exceed the budget presently available. The extent of underfunding will become much clearer when the detailed Work Plan is presented by the Berger consultants. At that time, some replanning of outputs will be needed and the Project purpose may require some modification. A likely result may be significant reduction in the scope of the Natural Resources Inventory.

## II. Project Plan

### A. Project Purposes

The National Cadaster Project has three principal purposes:

1. To establish a legal and efficient procedure for land titling, through a mapping inventory and modernization of the property registry system;
2. To establish an efficient property tax administration system; and

3. To carry out a natural resources inventory.

The Project includes completion of the work initiated under the Grant funded Cadaster Demonstration Project (CDP). The National Cadaster Project (NCP) will be completed in 71,746 sq. km. (out of approximately 115,000 kms. in the country) covering 10 departments (out of 18 in the country).

B. Specific Outputs (during the Loan funded portion of the Project)

1. Property Mapping and Registration

a. Take aerial photography that has adequate precision for property mapping for the entire country. 1/

b. Prepare: property maps covering the Project area (65% of the country), which utilizing the aerial photography identify a minimum of 123,000 rural properties (1:10,000 scale); insert and annex maps of mini-fundio areas; maps of at least 39,000 urban properties (at various scales from 1:500 to 1:2,000); and related index maps. Maps covering approximately 120,000 urban properties (at scales 1:500 and 1:1,000) are expected to be made available through cadasters previously carried out by the local governments of Tegucigalpa and San Pedro Sula, together with municipal maps that BANMA is expected to finance during the calendar years 1975-77.

c. Canvass, reconcile, and verify the land tenancy of the properties mapped.

d. Construct, equip, and staff 7 to 10 regional property registry offices (which will replace the 25 existing offices).

e. Construct an addition to the IGN offices in Comayaguela.

f. Develop a program and work plan for the personnel trained during the Project to maintain the data collected and to complete the cadaster in the areas of the country not covered by the National Cadaster Program after Loan funds disbursements are completed.

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1/ While the CAP calls for taking new photography, the Consultant group believes that existing photography is adequate for large portions of the country for preparation of the orthophoto maps. The orthophoto maps will permit significant reduction of the time needed for Project completion.

## 2. Property Tax Administration

a. Valuations utilizing mass appraisal techniques for 164,000 rural properties and 53,000 urban properties (including the Cadaster Demonstration area).

b. Tax bills for above properties prepared in Ministry of Finance and distributed to Municipalities.

c. Legal dispositions for enforcement of tax collections improved (in compliance with Section 3.02 of Loan Agreement), and adequate collection procedures established.

## 3. Natural Resources Inventory

Less than semi-detailed and reconnaissance studies of natural resources including:

a. Rainfall and evapotranspiration maps, general watershed maps, 12 monthly mean, one yearly mean maps at 1:250,000 covering Project area.

b. Depth to ground water, surface water resources, and total water and water quality maps at 1:50,000 (or 1:250,000 depending on region).

c. Basic soils, interpretative soils and land capability, forest and vegetation, actual land use (possibly combined with forest and range vegetation), and potential land use maps at 1:50,000 (possibly at 1:20,000 depending on region).

d. Reports, tables, statistical data covering areas described in a, b; and c above.

## C. Project Administration

To be carried out by the National Cadaster Office, a dependency of the National Planning Council (CSPE), with overall policy direction and guidance from a Consejo Directivo having representatives from the Planning Council; the Ministries of Natural Resources, Communications and Public Works, Finance and Public Credit; and INA. Important specialized services are to be provided by IGN (in the areas of mapping and aerial photography) and the Ministry of Finance and Public Credit (data processing and property assessment).

Coordination with COMDEFOR in the contracting of aerial photography is expected to help reduce costs.

III. Work Accomplished to Date

Activities under the NCP have started, but there are no outputs to date.  
Work accomplished under the CDP:

	<u>Planned</u>	<u>Completed</u>	<u>In Process</u>	<u>Not Started</u>
1. Urban Maps (1:500) replanned	2,800 59	-0-	-0-	59
2. Rural Property Maps (1:10,000)	245	114	40	91
3. Minifundio Annex Maps (varying scales) replanned	400 281	-0- 281	-0- -0-	-0- -0-
4. Resources Maps - General (1:250,000)	31	-0-	31	-0-
5. Resources Maps - Detailed (1:20,000)	296	-0-	-0-	296
6. Resources Reports	5	4 (draft)	1 (draft)	-0-
7. Property Ownership Records (Cards) - Urban	11,600	13,976	-0-	-0-
8. Property Ownership Records (Cards) - Rural	24,044	31,872	-0-	-0-
9. Property Ownership Records (Cards) - Minifundios	-0-	9,129	-0-	-0-

The detailed status of each of these items, the reasons why they have not been carried out as planned (if this is the case), and the actions needed to complete the planned outputs are discussed in Phil Lucas' memo entitled Status Report - Demonstration Project (Annex A). In summary, property ownership records have been initially recorded (although they have not been kept up to date or completely processed by computer) and the maps are in various stages of preparation with both compilation and drafting proceeding very slowly. Key decisions have yet to be taken on the drafting of the detailed resources maps: the scale must be determined, as well as whether

black and white or color reproduction is desired. A recent shortage of materials slowed the final drafting of all the maps just as production was reaching 25% of the planned output levels (in terms of maps per day). The maps, in final form, may be completed within six months.

One of the purposes of the CDP was to develop an efficient methodology for carrying out the NCP. The degree to which the end was achieved is discussed in the attached memo by Phil Lucas (Annex B). In summary, as a result of the experience gained, the mapping procedures have been greatly simplified, improved procedures for property reconciliation have been instituted, and sample resources data have been made available to other GOH agencies to assist them in better defining their data needs (and to assist Cadaster in developing a plan for data use to meet the Loan Condition Precedent to Disbursement governing the Natural Resources Activity - Section 3.03(a) ). The tax assessment procedures have not been fully developed and they have not been field tested. The tax billing and accounting systems are in the earliest stages of installation (only under the BANMA program - covering 24 development poles and subpoles). As the creation of the Ministry of Finance Office of Property Tax Administration (to provide tax bills and TA to the municipalities in collection of taxes) is a relatively recent creation (1975 - it still exists only on paper) no output had been expected from that office under the CDP.

While no outputs are yet visible from the NCP, first-stage goods and services are arriving. Vehicles have been ordered and are due for delivery in April 1976; training has been initiated; technical assistance, aerial photography and photo inspection services have been contracted; and key positions in the Cadaster Office have been filled with competent personnel. The Chief Consultant and experts in property mapping and registry, natural resources, and computer services are on board.

#### IV. Next Steps

The Cadaster Project is just beginning to plan for 1976 (in detailed form) and subsequent years (in more general form). Some activities are related to contractual obligations established in the Loan Agreement. A detailed list of pending contractual obligations is attached as Annex C. The most important of these activities are: (a) satisfying the Conditions Precedent described in Sections 3.02 and 3.03 (Assessment and Natural Resources Activities, respectively); and (b) preparing the detailed Work Plan required by Section 5.02 (under preparation at present by the Louis Berger Inc. Consultant group headed by Bernard Shechter). These and other activities and issues are discussed below.

A. Improved Property Registry System

1. Legal Base

a. Background

The Cadaster's legal department with expert assistance from Oscar Salas (Loan-funded consultant) has completed a draft package of proposed legal reforms including a Cadaster Law, a reform of the Property Registry Law, and a reform of the Civil Code. This package will attempt to: (1) resolve certain legal contradictions between the Agrarian Reform Law (Decree-Law 170) and the Property Registry Law (Decree-Law 171), both of December 30, 1974; (2) establish legal dispositions to enable implementation and proper maintenance of the new registry system; and (3) create an administrative body - a permanent cadaster office separate from the Supreme Court - to carry out the maintenance function. The volume and contents of the proposed law suggest that the legal base needed to permit the effective carrying out of this activity does not exist. I am still trying to get a definitive opinion on the extent to which the contents of the proposed package are absolutely necessary, strongly desirable, or simply useful in achieving the Project purpose, and the degree to which they differ from existing legislation. If any part of the package is absolutely necessary, the question becomes whether the Property Registry Activity, or parts of it, should continue without passage of the new legislation.

The Cadaster Project is well aware of the difficulty in getting legislation considered by the Council of State. Lic. Corleto has offered to try to reserve a spot in the Council schedule for consideration of any needed legislation. My own opinion, based on experience, is that the proposed package will have to be simplified a great deal before it will stand any chance of consideration and approval by the Council of State.

b. Action Indicated

Careful review of the proposed package; determination of which reforms are essential and which are merely desirable; condense the package to one law of 20 to 30 Articles, and put much of the draft package into regulations; present a package to the Council of State that can be discussed and approved in one session.

c. Steps Taken to Date

Lic. Zepeda, the Cadaster Director, is fully aware of the problem. He has requested José Blas Henriquez, a lawyer in the Ministry of Natural Resources

who was heavily involved in the drafting and approval of the Property Registry Law in 1974, to begin the review indicated above. During his TDY visit in April Joaquín Marquez will review the legal package and inform the Mission of the desirability and necessity of legislative action by the GOH prior to carrying out each of the steps in the Property Registry Activity.

## 2. Field Collection of Data for Property and Resource Mapping

### a. Background

No work has been started on this activity as of yet. Assuming a satisfactory solution of the Legal Base question, field work should begin on mapping sometime in June.<sup>1/</sup> Before this two major tasks must be accomplished.

First, the aerial photography for the first priority area (north coast, beginning in the Sula Valley) must be taken. The company that won the aerial photography contract awarded in March, 1975 (Aerofoto Mexicana) took black and white photography of the first priority area last year.<sup>2/</sup>

However, 85% of the photography was rejected by Inspector John Long. The acceptable photographs have little value as they are of scattered areas, and it will be easier and cheaper to refly the entire area instead of having to adjust the old photos to fit within the flight lines that are used when the area is reflight. Aerofoto Mexicana has agreed to refly the area at no additional cost. They have been contacted (March 11, 1976), but have not yet arrived as of the date of this report to make good. Should they not deliver as promised, initial Project efforts will shift to an area of lesser priority. This will be possible as KLM is taking black/white infrared photography of a large portion of the country for COHDEFOR using similar specifications and the same photo Inspector under the Cadaster Loan funded contract.<sup>3/</sup> COHDEFOR is paying for the photography and will provide it to the NCP at no cost. The photographs taken by COHDEFOR will be available to the Cadaster Project starting in about two weeks.

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<sup>1/</sup> Collection of data from secondary sources (not field collection) has been initiated for the natural resources survey, particularly in water.

<sup>2/</sup> Black and white photography is needed for property mapping. Infrared photography, needed for resources mapping, is to be taken by IGN using the aircraft recently purchased by the Cadaster Project.

<sup>3/</sup> Black and white infrared photography can serve for property mapping and completing certain types of resource data.

Second, copying of the existing civil registries should be started in the near future. This is necessary to enable quicker, more precise delineation of properties and capture of ownership data in the field. (Ed note: This was one of the lessons learned from the CDP, where the computer lists of inscriptions were not, in most cases, made available to field workers, which made the field activities much more cumbersome than necessary). It would be most efficient to begin copying the inscriptions in the areas where the field work will be started and prepare computer lists ahead of time for use of field workers. For maximum efficiency, property delineation should be started first in the areas where both the aerial photography and computer lists of titles are available. It was my understanding that the inscription copying would be directed in the field by the group of young lawyers that work in the Project's legal section, who would train and direct registry personnel. However, the only Project personnel with real experience in this area work in the Territorial Administration Department. Lic. Zepeda may wish to consider an internal administrative rearrangement to improve utilization of existing manpower.

b. Actions Indicated:

Inform the Mexicans of a final date for getting started. If they do not comply, cancel their contract and work out some arrangement for either: (1) a new aerial photography bid for next flying season (Feb-April, 1977), and either begin field work in the area where KLM has taken photography or develop some special procedure for sole source contracting of another firm (perhaps negotiating directly with the second or third place qualifiers from the original 1975 bidding) to fly the first priority area in the remaining flying days (April) of the current season; or (2) go ahead as planned using older photography available in IGN (this photography will be adequate for property mapping except in rapidly developing areas); or (3) arrange with COHDEFOR to have KLM take the needed photography. Under this third alternative, the GOH would have to finance the procurement with counterpart funds, as KLM is not of eligible origin for A.I.D. Loan financing. If the mapping procedure proposed by the consultants is approved by the Cadaster Project (discussed in Section 3 below) then the need for new photography may be minimized and alternative (3) might become the cheapest way of obtaining the additional photographs needed.

Finalize, with advice of consultants, the Project administrative structure and the responsibilities for field work. Train supervisors and then hire and train crews for copying registries. Initiate indexing and copying of registry inscriptions, and prepare computer lists of titles. Contract, per the Work Plan being prepared by the Consultants, for orthophoto maps and for the supervision of the orthophoto mapping contract (the Berger group is proposing to handle this under a contract amendment).

c. Steps Taken to Date

Ing. Zepeda is aware of these problems. The Mexicans were informed by cable and telephone that if they do not begin work by March 25, their contract is cancelled.<sup>1/</sup>

3. Finalize Mapping Procedures

a. Background

The Berger group has now completed a preliminary analysis of the mapping techniques used in the Cadaster Demonstration Project. Those current techniques which are time-consuming, costly, and cumbersome can be changed. The chief consultant and the mapping advisor are analyzing an alternative technique that could result in: some reduction in costs and a significant reduction in the time required for completing the mapping; and a better relationship of resources data to specific properties.

The possible cost reductions that could be achieved through the use of more advanced mapping techniques are especially important since 54.2% more properties were found to exist in the CDP area than were first estimated. If this pattern holds true for the NCP, this would imply a cost 50% higher than that budgeted for the Property Mapping activity. Furthermore, the overall Project budget may be unrealistic, as the cost estimates in the CAP were based on 1972 prices. Given all these factors, the Project is underfunded. The extent of underfunding is being analyzed by the consultant group.

The two major alternatives that will be contrasted in presenting the matter for consideration of the Cadaster Director and the Consejo Directivo will be: (i) carrying out the NCP using the procedures followed under the CDP, with modifications to improve efficiency and eliminate unnecessary steps; and (ii) introducing a computer-assisted interactive graphics system through which orthophoto maps delineated in the field to show property boundaries would be converted to digital records for subsequent output in hard copy-maps and related data. The property boundaries and related data would be recorded on computer disk through a digitizer - design station which permits the boundaries of each property to be located by precise grid coordinates and recorded on computer disk. This combination of data inputs will permit subsequent computer mapping (on a plotter), area

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<sup>1/</sup> Somewhat unclear at this point is the status of Aerofoto's bill for approximately \$18,000 for acceptable photography taken in 1975 if they fail to reply as promised at no additional cost.

calculations, and integration of resources and property data collected with reference to the same or a compatible grid system. This technique permits up-to-date maintenance of the property mapping with a small trained staff.

An institutional problem may be posed if the latter technique is chosen, as it would drastically alter IGN's role in the Project. But according to the consultants this would not result in any overall personnel reductions from present levels during the life of the Project since IGN staff will be involved in various aspects which would absorb their current (and somewhat expanded) capacity.

b. Action Indicated

Berger group - Complete analysis of alternatives for mapping. Cadaster office - Review alternatives, determine procedures to be followed. (This decision should be taken well in advance of the completion of the Work Plan to allow its impact to be incorporated into that document).

B. Tax Administration System

1. Legal Base

a. Background

In December 1973, A.I.D. brought David Rodriguez, a Clapp and Mayne Consultant, to Tegucigalpa to assist the GOH in preparing a new property tax law. Rodriguez left a draft law for discussion upon his departure. A year later, in December 1974, the Loan Agreement was signed. The property tax law had not been acted on, and a condition precedent requiring improved property tax legislation was included in the Loan Agreement after specific approval by Gen. Lopez and Minister Acosta (Finance). The GOH contended in a letter dated November 20, 1974 that the legal base for adequate property tax administration already existed. An A.I.D. reply (never formally delivered) detailing why it could not accept the existing legislation in satisfaction of the condition precedent was drafted by Joaquin Marquez of A.I.D.'s General Counsel Office and was discussed in draft form with Minister Acosta. The Minister indicated that he would further review the draft law prepared by Rodriguez to determine the desirability of presenting it to the Council of State. After the change in Government of April, 1975, the new Minister of Finance (Zavala) contracted a lawyer who studied the matter further and prepared a much more detailed analysis of the Government's legal base for property tax administration. A draft memo prepared by this lawyer, Lic. Rojas C., was discussed with the Capital Development Office in an informal meeting held around August of 1975. The Ministry was encouraged to present the memo officially so that A.I.D. would have a basis on which

to ask for a return visit by Marquez. The memo was never presented officially, but R. Lanza/CD carried it to Marquez on his way to a training program in February, 1976. Marquez TDY is planned for the week of April 5 at which time it is hoped that representatives of the Ministry of Finance, the Cadaster Project, and A.I.D. can hash out an agreeable solution to the legislative condition precedent of Section 3.02 of the Loan Agreement, which remains unmet as of this date.

b. Actions Indicated

Minister Zavala and Subsecretary Pineda Mejía should be filled in completely by Lic. Zepeda and the advisors he may choose on this situation, and should designate a high level team to get this problem worked out with Marquez.

2. Tax Appraisal Office; Tax Appraisal System

a. Background

The executive decree creating the National Cadaster Office also created an office in the Ministry of Finance to carry out the Tax Assessment part of the Project. To my knowledge this office exists on paper only. Upon resolution of the legal base problem posed above, this office should begin its operations. Significant work in systems design and tax appraisal procedures will be necessary prior to carrying out the en masse appraisals.

b. Actions Indicated

The following should be initiated now: (i) review the 1976 GOH budget to determine if adequate resources have been made available with which to hire the initial complement of personnel for the office; and (ii) an RFP should be drafted for consultant services in property appraisal and property tax systems. After the legislative problem is resolved, the following actions can be taken: (iii) select and train the tax appraisal office staff; (iv) develop or update the necessary appraisal methodology; (v) develop the administrative systems to provide the computer software necessary to turn out the computer prepared tax bills and to ensure collection of the property tax; and (vi) provide the necessary TA to the municipalities in tax collection.

The details of how tax bills will be delivered to property owners (except for those in cities or towns having previously installed a tax billing system) are still unresolved. Tax collections, even with the strongest legal dispositions possible, will still be difficult to carry out efficiently. Attention to these matters now will save time and expense later on.

### C. Natural Resources Inventory

The greatest unresolved questions are in the area of the Natural Resources Inventory. No clear method or strategy for analyzing user data needs and determining to what extent they can/should be satisfied through the NCP has been determined. An administrative problem has been created for the NCP as the monies advanced from the Central Government have been spent in large part on this activity. Since the Condition Precedent to using Loan funds for the Natural Resources Inventory is the presentation of an acceptable plan for the use of the data (Section 3.03), the Cadaster cannot be reimbursed yet for the funds already spent. This is hampering the entire operation.

#### 1. Alternative Approaches

Determining the data that should be collected will not be easy. There are three distinct approaches:

a. Minimum reconnaissance, perhaps with special studies in key valley areas. The types of data collected would be those outlined under II.B.3. above. The data would be collected perhaps via satellite, traditional photographic interpretation, from existing data, from minimal field reconnaissance, or all of the above, and would be stored on computer records. No attempt would be made to relate the data to individual properties. Formats for data outputs would include maps at very small scale (1:100,000 to 1:500,000) and computer printouts, perhaps disaggregated to the municipio level where boundaries are easily distinguishable. This approach would minimize the amount of resources required.

b. A second approach would be to do a relatively intensive resource inventory in the principal valleys of Honduras-areas which form the prime focus of the GOH development efforts at present and for the foreseeable future.<sup>1/</sup> All secondary data sources as well as intensive field collection of data would be required. Among other things, this would require developing an adequate soils testing capacity within the GOH, which could be expensive. As an alternative, soils testing could be contracted (although this might be even more expensive than developing the GOH capability). Under this approach detailed maps would be produced at relatively large scale (1:20,000, and perhaps 1:50,000 in areas of secondary importance)

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<sup>1/</sup> COHDEFOR is doing extensive inventorying of forest areas. The degree of compatibility and overlap between the Cadaster and COHDEFOR efforts has not been pinned down. It might be possible to incorporate additional data collection for NCP purposes into COHDEFOR's ongoing activities, thus minimizing requirements for Loan funded activities in forest areas.

and detailed reports and statistical data would be prepared. The data would be fully integrated with the property registry data thus permitting relatively precise determination of land use potential with minimal additional field work. This would enable the office of Sector Planning being set up under the Agricultural Sector Program (funded through Loan 522-T-025), to carry out a more in-depth planning effort for agricultural development in these valleys.

c. A third approach would be to orient the data collection, storage and reproductive mechanisms towards satisfying data needs for specific projects the GOH expects to undertake within the next 5, 10, or even 15 years. Under this approach intensive data collection efforts would be undertaken to support pre-feasibility and feasibility studies and to enable alternative site selection on a solid basis. This might require different TA inputs than those currently planned, but this is not foreseen as a major drawback.

## 2. Actions Indicated:

The Resources Department within the Cadaster Office, with the assistance of the consultants, should continue to analyze existing sources of data available both from primary and secondary sources. In a parallel fashion the three alternative approaches suggested above, or others, should be considered and discussed with potential data users. The plan for the use of the data should specify the additional data collection strictly necessary to meet user needs. Progress is being made in attacking the resources component realistically. The comments of the Consultant group on this section of the report illustrate this:

"There is need to accomplish both reconnaissance level resource surveys for certain category components over the entire area and more detailed type surveys for other disciplinary areas in specific areas, such as the valleys. For example, the water resources effort can be limited to river basins and information collected from existing reports, records, measurement stations, together with collection/analysis and minimal field effort to compile output reports and maps at relatively small scale. For soils however, where basic data and lab facilities are lacking, a significantly greater and more detailed effort is required. The outputs for soils need to reflect in sufficient detail to at least relate area or regional conditions vis-a-vis agriculture for the area and region. In turn, if the information is valid, the soil quality will reflect in the property valuation process (through market value). Treatment of vegetation, land use and socio-economic components will be proportionate to scope/depth of other data.

In the matters of Honduran agency use of the end items resulting from the resources inventory work two observations seem pertinent. First, a continuing

effort will be made (before work begins and during progress) to elicit agency needs and priorities, both short-and mid-range. It is believed that once the NCP demonstrates an ability to produce quality information the agencies will levy demands (requirements) more openly and not be over-concerned with perpetuation of their internal staffs (real or proposed). As a goal, the NCP plans to develop a matrix of requirements and priorities to reflect resource component needs, areas, and depth of detail. Second, the establishment of effective methodology and procedures through NCP will serve the established Honduran Government functional agencies through return of trained NCP staff at Project conclusion. Additionally, the important ability to immediately relate the resource data to the same source materials (photos and maps) being used in NCP property work will prove quite beneficial. This is the unique opportunity to do so at minimal cost. Lastly, the ability to record the resource data through computer data capture and manipulation is present in the NCP - this would be infinitely more difficult through fragmented multi-agency efforts or require expensive duplication." (End of Consultant comments).

While it is possible that significant resources data can be provided at little additional cost, as the Consultants assert, I suspect that this activity will have to be significantly curtailed in comparison to the plan included in the CAP. The other activities have higher priority, and will cost much more than originally planned.

Attachments: Annex A - Demonstration Project Status Report

Annex B - Memo to the Files  
Lessons from the Demonstration Project

Annex C - Control de Cumplimiento de Cláusulas  
Contractuales Pendientes para Proyectos  
con Financiamiento Externo

Drafted by:CD:ERZallman:did

Cleared by:CD:CRConnolly:in draft

AD:MVDagata:\_\_\_\_\_

March 8, 1976

DEMONSTRATION PROJECT

STATUS REPORT

Shortages of material and inability to follow through with planning activities and then take decisions continues to delay completion of the Demonstration Project.

Field canvass and compilation activities were completed several months ago, but, processing of the data has taxed the capacity of available physical resources in meeting the projects objectives.

The Projects Objectives (Outputs) are:

- 1.- Rural and Urban Property Maps.
- 2.- Resources Maps and written reports.
- 3.- Property ownership records, investigation of land titles verified with records in the property registry offices.

PROPERTY MAPS:

URBAN:

The Urban mapping objective was to produce property maps for 19 Urban centers and compute the lot areas. Production of these maps was originally planned to be done by the Cartographic Institute. When it was determined the Cartographic Institute did not have the capacity to timely prepare these maps. The Cadaster assumed this responsibility. The system of maps designed for Urban properties which would require approximately 2800 maps was found not to be compatible, with the projects needs and production schedules. The system was changed to one that would require an estimated 59 maps and drafting was started, but, was stopped to design a new format. Mapping material had been expended and funds were not available to purchase and additional supply. An order was placed 3/4/76 for an emergency supply.

Urban Maps completed - 0

Urban Maps in Process- 0.

Next Action:

When material is available, start layout and drafting of maps. Heading and legend data can be added when a decision is reached on the design of the format. Urge completion and adoption of the format.

RURAL:

The objective of the rural map component was to produce 245 property maps at a scale of 1 to 10,000 and compute the individual property areas. A responsibility assigned to the Cartographic Institute. Optimum production has never been reached. Passing the maps and enlarged photography back and forth between the Institute and Cadaster to correct errors, close property boundaries, assign the cadaster number, compare and correlate the map data with the property ownership data has delayed production. Problems with block adjustment and control for rectifying the 1:20,000 photography continue to reduce efficiency in the production of rural maps. When it became apparent that the Cartographic Institute did not have the capacity to timely compute property areas, the cadaster started computation of the areas.

STATUS:

Rural Maps completed	114
Rural Maps in process	40

Next Action:

Acquire the 1:60,000 photography control from Panama to continue aerial triangulation and compilation. Attempt to accelerate drafting of maps.

MINIFUNDIOS:

The Minifundio mapping objective was to produce property maps and compute the lot areas for approximately 400 Minifundios. Production responsibility was assigned to the Cartographic Institute. The system designed for mapping the Minifundios is not compatible with project needs but has advanced to such an extent that changing would not be feasible at this time. The system for map-

ping Minifundios can be changed as future maintenance occurs. Drafting of the Minifundios maps, in reality index type annex maps, was stopped to permit design of a new format. The cartographic Institute had completed drafting of 281 of these maps while the Cadaster has completed 9129 of the accompanying individual lot maps and calculated the lot areas.

STATUS:

Minifundio annex maps completed	281.
Minifundio annex maps in process	0.

Next Action:

Resume drafting of annex with map layout and reproduction on map sheets compatible to the 1:10,000 rural maps. Develop and approve map format.

RESOURCES MAPS AND REPORTS:

The objectives of the natural resources survey was to produce 31 general and special maps at a 1:250,000 scale, 296 maps of soil, land use, water, vegetation and prepare written reports on the soils, land use, water and vegetation studies. An accompanying Socio-Economic study report was completed. The 31-1:250,000 maps were delivered to the Cartographic Institute in June of 1975 for drafting and reproduction. Drafting was underway when problems developed on content and format. Decisions were not reached on map legends until January 1976.

Reproduction of the first of these maps was started in January. Minor errors in these maps were discovered by Cadaster and were reported to the Institute for correction. These errors should have been discovered and corrected by the Cadaster before sending the maps to the Institute. Reproduction was suspended when drafting material was expended. An emergency order of material was requested from IAGS Panama 3/3/76.

The 296 maps compiled for land use, soils, water and vegetation at the 1:20,000 scale are in the cadaster files awaiting drafting and reproduction

by the Cartographic Institute when the 1:250,000 maps are completed.

Project Personnel and the project Director were unaware the resources maps were planned to be produced in black and white through Ozalid reproduction. Although the Cartographic Institute has the capability of color reproduction, they do not have the current capacity. The Project Director requested a tentative proposal from Teledyne Geotronics on color reproduction. He then met with the Board of Directors of the Project who agreed on providing the necessary funding. The first proposal submitted by Teledyne Geotronics proposed reducing the scale of the 1:20,000 maps to 1:50,000 scale at a substantial savings in costs over reproduction at the 1:20,000 scale. This stirred considerable controversy with the technicians on the Project, claiming that a great number of smaller units mapped during the project would disappear. In turn, the question was raised, Why was the 20,000 scale used for resources mapping when a 1:50,000 scale would have sufficed for the type of survey that was conducted? Too, the cost benefit ratio of color over black and white reproduction should be weighed before reaching a decision. Action has, at least, been temporarily suspended on contracting the completion of the resources maps in color.

STATUS:

Resources Maps completed	0.
Resources Maps in process	31.
Resources Maps not started	296.

Next Action:

Continue drafting the 1:250,000 maps and reproducing in black and white when material is available.  
Consider reproduction of the general and special maps at the 1:250,000 scale in color and the 1:20,000 maps in black and white.

STATUS:

The written reports on land use, water and vegetation have been completed in draft, but, not published.

The Socio-Economic report is complete, but, not published. Work continues now and then on the draft soils report.

Next Action:

Complete the soils report.

Reproduce a limited quantity of the draft reports and distribute to user agencies for their comments. Include data from these reports in the reports for the National Project as and when written.

PROPERTY OWNERSHIP RECORDS:

A total of 54,977 property tenancy records have been prepared for the Demonstration Project area. For the Department of Choluteca 36,745 property records have been prepared including:

1.- Urban Properties	<u>9,597</u>
2.- Rural Properties	<u>21,033</u>
3.- Minifundios "	<u>6,115.</u>

For the Department of Valle 18,232 property record have been prepared including:

1.- Urban Properties	<u>4,379</u>
2.- Rural Properties	<u>10,839</u>
3.- Minifundios "	<u>3,014.</u>

Verification of Ownership records, preparation of cross reference lists and mounting of information in computer storage continues, off schedule. Project has been delayed through not having a microfilm camera. When one became available on Loan from IAGS, funds for film were not available. An emergency order of film was placed 3/4/76.

The property tenancy division has programmed completion of their portion of the Demonstration Project by the end of July. This, however, depends on increased production by I.G.N.

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Next Action:

Complete microfilming of the Cholulteca registry, verification of tenancy and mounting in computer storage.

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MAPAS DE RECURSOS

ZONA DEL P. G. D.      Escala: 1:250,000

1. 13 Mapas de Isohitas  
( 1 anual y 12 mensuales).
2. 13 Mapas de Isolíneas de Evapotranspiración  
( 1 anual y 12 mensuales).
3. 1 Mapa general de cuencas.
4. 1 Mapa de clasificación de climas según Koppers.
5. 1 Mapa de zonas con potencial de agua subterránea.
6. 1 Mapa de áreas inundadas durante el mes de Septiembre  
de 1974. (Huracan Fifi).
7. 1 Mapa de caudales mínimos medidos, medidos en rios de la  
zona.

MAPAS DE RECURSOS

Escala: 1:20,000

1. 74 Mapas de Uso actual Agricola
2. 74 " " Factores Ambientales
3. 74 " " Levantamiento de Suelos
4. 74 " " Capacidad de Uso de la tierra.

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ESTIMACION DE TIEMPO PARA LA CULMINACION DEL PROYECTO CATASTRAL DEMONSTRATIVO -  
(NO SE INCLUYE LA ACTUALIZACION)

ACTIVIDADES.-	MARZO	ABRIL	MAYO	JUNIO	JULIO	AGOSTO	SEPT.	OCTUBRE	NOVIEM.	DISEM.
1. CATASTRO AREA RURAL	3 PERSONAS									
2. CB RURAL	3 PERSONAS									
3. Catastro minifundios	1 PERSONA									
4. CB minifundios	2 PERSONAS	3 PERSONAS								
5. PERSEO-VERIFICACION		2 PERSONAS								
6. OPERACION CETI										
7. ESTADIA VICENTE!	4 PERS.									
8. Transcripciones	50 PERSONAS	14 PERSONAS								
9. Revisión Transcripciones	3 PERSONAS									
10. Elaboración fichas por parcela		4 PERSONAS								
11. Microfilm	3 PERS.	5 PERSONAS								
12. OTROS ACTIVIDADES	4 PERSONAS									

"ANEXO D"

# Memorandum

TO : FILES

DATE: 26 de Febrero 1976

FROM : PHILIP U. LUCAS *Philip Lucas*

SUBJECT: LESSONS FROM THE DEMONSTRATION PROJECT.

The C.A.P. describes some administrative and technical experience gained in the Demonstration project that would prove beneficial to the National Project".

1. " Advanced information gathering techniques such as infrared color photography tested in the demonstration project will be used in the National Cadaster to obtain data for the resources inventory at a considerable savings in costs. The ERTS satellite system of photography was also tested and found to be incompatible with the project".

COMMENT:

The infrared color photography concept appears to offer advantages for obtaining data on a large scale with minimum use of surface investigation. The concept looked good enough to sell the idea of purchasing an aircraft for taking this photography. Local capacity for handling and processing this type of photography appears not to exist. Infrared color film is very sensitive, must be stored under refrigeration, and immediately after exposure, must be packed in dry ice and then transported to the U.S. for processing. Consideration should have been given to taking the color photography simultaneously with the mapping photography. Initial cost would be greater, but, a long run savings over the cost of an aircraft, aircraft operations and maintenance. Use of ERTS Satellite Photography should not be entirely ruled out. Limited use could be advantageous in Project Planning, regional studies and study of marginal areas.

2. " As the project progressed it was found that I.G.N. personnel had difficulty applying the advanced mapping techniques used by the Cadaster. These techniques were modified to be consistent with the capabilities of the mapping agency".

COMMENT:

The use of mosaics *and on the photos.* was considered and abandoned. Property is delineated an enlarged photography, then the photography for the rural



maps is rectified before the drafting process is started. This causes an unnecessary shuffling of paper back and forth between the Instituto and Catastro, 5 to 7 times depending on the corrections and approval with neither the Catastro or the Instituto willing to make decisions.

Urban and minifundio properties were mapped using an individual plat survey system. Unnecessary time was wasted striving for an impossible precision that could not be obtained with the facilities available. "Block mapping" as practised, provided some 2800 urban maps to be drafted. While Cadaster Block Mapping techniques will reduce the number to approximately 59 maps and still retain the same standard of accuracy while facilitating the use. Drafting index maps for the minifundios and an individual plat map for each property is a duplication of effort. The scale of the index map can be changed to permit use of geographical cadaster mapping similar to the mapping of Urban property. The use of mosaics would significantly reduce the work involved in field delineation, map processing and the shifting of paper between the Instituto and Catastro.

If mosaics cannot be locally produced (they could), perhaps consideration should be given to contracting this work. This type of action does not constitutionalize a local hondurenean capability, but, a way in which to do the job.

On the Nicaraguan Project at optimum production, it took <sup>with effects</sup> 1  $\frac{1}{2}$  days to produce a mosaic, Teledyne Geotronics can turn one out in 45 minutes.

3. " A central computerized system capable of calculating and competing taxes and user fees and municipal inhabitants was devised by Cadaster personnel. This system will utilize information produced by the Cadaster to establish the data base".

COMMENT:

Not tested. Appears feasible, but, could prove to be illegal if contested.

4. " A computerized central property registry was also designed by Cadaster personnel. This system will provide a central file of all properties in the country to support the registry's branch Offices".

COMMENT:

This component is sound. Has been delayed by correlation of data within the registry's and correlation and verification of data of

the registry's and field canvass. Again problems in making decisions for fear of error.

There has not been any maintenance of data. Erroneous belief that regulatory provisions are necessary for maintenance.

5. " A Cadaster coordinating committee composed of the heads of the National Planning Council, the Ministry of Natural Resources, The Ministry of Public Works, The National Agrarian Institute, and the Ministry of Finance was organized to facilitate the projects implementation. This committee coordinates the project inputs of the organizations named above and is programmed to continue this activity for the National Cadaster."

COMMENT:

Has been functioning very well at the Ministry level. The Coordination at the Directorate or operations level could be improved.

6. " Two draft laws reforming the property registry and the property tax administration have resulted from project activity. Various G.O.H. agencies are currently reviewing the drafts".

COMMENT:

A scaled down version of the property registry law was passed. The Folio Real System of property registry is being implemented. Regulating provisions are still awaiting action. The Property tax draft law was tabled. Little activity by the G.O.H. in evidence relative to property tax administration.

7. ADDITIONAL COMMENTS:

A. National Resources Survey.

The natural resources survey sector of the Project got off to a bad start through the G.O.H. not furnishing needed personnel in quality and quantity. The Consultants did not give sufficient indoctrination to personnel on the end results expected from the survey. Why the decision to map at a 1:20,000 scale is not really known. Reference is made that the 1:20,000 maps would support the property valuation activity. This is a rather rare concept used by the natural resources survey proponents to promote natural resources surveys in conjunction with Cadaster projects.

Personnel working on the project did not know the final maps were to be produced in black and white. They had visions of color maps. Production of color resources maps have been sold to the Board of Directors. The costs involved in production will more than triple over the method of reproduction originally planned. Reproduction of color maps could be done by the Instituto, but, the costs are calculated to be substantially greater than if contracted.

b. SOCIO-ECONOMICO:

The back-ground for the Socio-economico study conducted during the Demonstration Project is not clear. A sampling was made and some rather meaningless data developed or I am unable to understand the meaning. The equation used for forming and grouping the samples, perhaps is good, but, I fail to see where the growing of corn and beans, as universal subsistence crop, on a particular soil at a certain geographical coordinate provides significant socio-economic data.

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A. CONTROL DE CUMPLIMIENTO DE CLAUSULAS CONTRACTUALES PENDIENTES PARA  
PROYECTOS CON FINANCIAMIENTO EXTERNO.

PROYECTO Catastro Nacional FECHA DE INFORMACION 2 de marzo de 1976  
 ENTIDAD FINANCIERA A.I.D. PRESTAMO No. 522-T-024 ASISTENCIA TECNICA No. \_\_\_\_\_  
 FECHA DE CONVENIO 31 de diciembre de 1974 MONTO DE CONVENIO \$6,000,000 CONTRAPARTE NACIONAL \$2,200,000  
 ORGANO EJECUTOR \_\_\_\_\_ ENCARGADO PRESTAMO Jim Bleidner COORDINADOR GOB. \_\_\_\_\_  
 ESTADO ACTUAL CONVENIO: CONDICIONES PREVIAS  EN EJECUCION

CLAUSULA NUMERO	DESCRIPCION	FECHA VENCIMIENTO		REQUISITOS PENDIENTES	Fecha Probable Cumplimiento	ACCIONES A TOMAR
		Original	Prorrogado			
3.02	Property Tax Legislation	no terminal date		Resolve legal difference	30/6/76	Submit legislation to A.I.D.
3.03	Data Use Plan	no terminal date		Evaluate User needs	15/4/76	Submit Plan to A.I.D.
4.11	Monthly report	30/1/76	-		?	Submit Monthly Report to A.I.D.
4.11	" "	20/2/76	-		?	" " " " "
5.01	A.I.D. approval of Project Director	no terminal date			15/3/76	Submit Curriculum Vitae to A.I.D.
5.02	Cadaster Work Plan	11/12/75	30/6/76	Consultant submit plan to Cadaster		Submit Work Plan to A.I.D.
5.03	Building Construction	31/12/75	31/12/76	Finalize contract	30/4/76	Inform A.I.D. when construction initiated
5.04	Annual Evaluation	31/12/75	15/2/76	Extension requested; A.I.D. to approve.	15/4/76	Combine Evaluation with 5.02 Work Plan
6.06	Contract approvals	no terminal date		Submit request for loan financing of Aerofoto Mexicana and John Long contracts		
5.05	Contract approvals	no terminal date		Submit Amendments #1 and #2 of John Long contract to A.I.D. for approval		
6.05	Bid Document approvals	no terminal date		Prepare Bid Document for equipment.		Submit to A.I.D. for approval
7.02	Lempira Disbursement Schedule	no terminal date		Submit planned Lempira disbursement schedule by Activity (as requested by Implementation Letter No. 13).		
9.02	Notification of Representatives	no terminal date		Send letter designating Zepeda as "Authorized Representative" and informing A.I.D. that Merriam is no longer an "Authorized Representative".		

Preparado por: Eric R. ZallmanAprobado por: Jim Bleidner

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