
SECTION V PROJECT DESIGN

General agreement exists in both the public and private sectors that a major reform of the Guatemalan land registry is needed. Interested groups holding this view include FUNDACEN and various external funding sources such as USAID.

There is also considerable interest by these groups in improving the land database for a wide variety of land issues for a number of land resource areas. These include data needed for improved land markets, the environment, resettlement of refugees, and land taxation.

Many of these land issues are related to one another, at least as to the data requirements that must be met to develop solutions. For this reason, we recommend that a broad-based MPLIS be designed that is capable of serving the needs of a wide variety of land information users.

We are not suggesting that the entire system be developed and implemented at the present time. Rather, the system should be implemented in phases over a period of years. The project design should therefore provide for two things: (1) the inclusion of the major land files and decision processes in Guatemala, and (2) the phased development of the system in a logical, consistent manner over a period of years.

We also suggest that the "layer" (sometimes called a "module") of the MPLIS that incorporates land title record improvement be one of the first targets for the revised system. This report and earlier efforts clearly document the need to deal with the reform of the land title system in an expeditious manner. Further, simply straightening out the current records prior to entering any data will be a tremendous task.

A. SPECIFICITY OF THE MPLIS PLAN

The MPLIS plan should include sufficient detail to support both development and evaluation of the system over time. Therefore, a set of goals for the system should be developed at the outset. Further, specific objectives should be developed for each goal to facilitate monitoring of progress in system development and operation. These objectives may include certain expected payoffs that can be measured without undue difficulty. Goals and objectives should include a temporal dimension as well—what is expected in the short term, what is expected in the longer term, and how are these short-term and long-term periods defined in terms of months or years.

It is difficult to overemphasize the importance of a plan that is both sufficiently specific and includes the basis for ongoing evaluation as the project proceeds. These attributes will help ensure that the MPLIS plan is comprehensive and complete. The capability to monitor

progress through an ongoing evaluation program will also help ensure the support that is necessary to sustain the development and operation of the MPLIS over the long run.

Some goals in the MPLIS plan will likely be of a general nature, such as providing backup copies of documents in the title registry. Detailed goals and objectives should also be included. For instance, what type of document backup system will be developed? Both microfilm and computer-stored document imaging have been suggested in the past. Ultimately, the needs of all users and how these needs can best be met through an integrated information system should be used to determine specific document storage system attributes.

Finally, while specificity is a desirable virtue of an MPLIS plan, there is also a need for flexibility as the project develops. Needs will change: new needs will be determined; technology will improve, both as to capability and speed of carrying out a task. Therefore, the system design should be specific enough so that goals and objectives are easily identified, but at the same time flexible enough to permit these goals and objectives to be reached using the most current, most effective means possible.

B. PROJECT DESIGN TEAM NEEDED

A project design team is needed to develop a design for the Guatemala MPLIS. The complexity of such systems requires that a variety of people with a variety of skills be included in the design effort. This approach is supported by our experience in other countries, including Costa Rica, Saint Lucia, and Trinidad and Tobago.

It is also important that individuals from the governmental and private sectors in Guatemala be included in the initial MPLIS design efforts. Although the expertise of individuals from outside the country is important, it should be leavened with the inclusion of nationals with an interest and knowledge of land information system improvement. Our visit and interviews in January of 1992 suggest that there are numerous individuals who could and would welcome the opportunity to participate in such an endeavor.

1. Makeup of Project Design Team

Several areas of experience and expertise are needed for a well-rounded MPLIS project design team. These should include, but not be limited to, the following:

a. General Design of MPLIS Systems

The MPLIS design team should include one or more members who have experience in the design, implementation, and operation of land information systems. Experience in determining what MPLIS systems can and cannot do, what functions to include, and how to integrate a diverse team of land information system users to ensure successful implementation are all critical skills.

Land Tenure Center members David Moyer and Stephen Ventura have experience in these areas that would be useful in developing the Guatemalan MPLIS. (See Annex B for biographical data on proposed design team members.)

b. Attorneys

Team members with knowledge of the legal system, including Guatemalan law are necessary. Familiarity with the current land title system will be helpful, as well as the ability to analyze the constitution, current statutes, and other legal regulations that affect land titles and land title registry activities. Similar skills will be needed as to land taxation, land use, surveying and mapping, and natural resources. Legal skills are needed not only to evaluate the current situation, but also to develop possible changes for the legal system. This could include various aspects of drafting, passage, and implementation of statutory and constitutional provisions.

In the legal area, especially as related to the land registry reform aspects of the MPLIS system, it is important that the team include both Guatemalan nationals as well as foreign advisors. Members of the Registry Reform Commission currently working on some aspects of land registry reform should provide a good pool of expertise within the country from which to draw.

Steven Hendrix and John Bruce of the Land Tenure Center, both trained as attorneys, are well suited as advisors on legal matters. Hendrix's experience in Guatemala and other Latin American countries would also be a valuable asset. (See Annex B.)

c. Hardware, Software, and Programming

Although not absolutely imperative, it is likely that an MPLIS capable of providing the support needed for land records and issues in Guatemala will be an automated one. Therefore, knowledge and experience of hardware, vendor programs (software), and custom programming are important. For instance, although it is not expected that members of this team would actually prepare any custom computer programs, an understanding of the programs needed, the skills necessary to prepare such programs, and knowledge of where such programming skills might be obtained (especially within Guatemala) would all be useful.

The design team should also include persons with a knowledge of currently available computer hardware suitable for supporting the proposed MPLIS system. Evaluation and recommendations of hardware should include such factors as reliability of the software, ease of repair, access to personnel and parts to make repairs, and ease of shifting to other platforms in the future. The latter point is critical since changes in hardware (and implementation of new versions or different software) can be expected to occur periodically. Therefore, the design should include plans to make such changes, and do so with the least amount of disruption for managers and users of the system.

Land Tenure Center members Stephen Ventura and Alan Vonderohe are well suited to provide guidance in this area.

d. Knowledge and Experience with a Variety of Land-Related Issues

Land title registry reform is the central focus of this report. However, we have also noted many other issues related to land titles and ownership which need attention. In fact, many of the land issues in Guatemala are so closely related and intertwined that the only way to address them effectively is in an integrated manner. Therefore, the design team must include members who are familiar with land issues and the relationships among them.

It is not expected that the design team will be equally knowledgeable about all land-related issues, however, team members should be familiar with many of the following:

- **Natural Resources Management.** Improved natural resources management is critical to Guatemala as it struggles to improve its internal economy, expand foreign trade, and increase the efficiency of agricultural production. An MPLIS will provide resource inventories to facilitate development and use of these resources. Improved accuracy and security of land boundaries will also help protect and improve many natural resources.
- **Agricultural Production.** Increased production can improve the internal economy and provide needed foreign exchange. Ways to realize such improvements and still protect fragile areas such as the Peten are possible using MPLIS technology.
- **Security of Tenure.** Security of tenure is important to all land owners in Guatemala. Such security will lead to increased agricultural production, increased investment in land improvements, and better, less expensive land transfers.
- **More Efficient Land Markets.** Land registry reform will help. However, ways need to be found to provide land market access to family and communal lands.
- **Taxation.** Property taxation policies and procedures are in need of reform. Such reforms would lead to a broader base for taxation, as well as help ensure the equitable treatment of all property taxpayers.
- **Reduced Cost of Land Record Processes.** Costs related to land transfer, determining taxes owed, and so forth are now relatively high. These costs can be reduced with the use of an MPLIS. Lower costs will in turn lead to greater access and use of the land record system generally.

David Stanfield, Susana Lastarria-Cornhiel, Ronald Strohlic, and Steven Hendrix of the Land Tenure Center are well versed in these issues.

We estimate that a design team with 4 to 5 advisors will be needed, in addition to a similar number of in-country members.

2. Level of Effort

We estimate that the design team will need to spend 4 to 8 weeks in Guatemala, meeting with individuals and groups who will build, operate, and use the proposed MPLIS system. Additional data will be collected as to the current system and scope of challenges. Task lists will be developed and attempts made to reach consensus on the priority order in which these tasks will be addressed. In all of these steps, the Guatemalan members of the design team will play an integral role.

Following the in-country phase, an additional 3 to 4 months (at half time for team members) will be required to finish the project design. At the end of that time a project design document, suitable for use in developing financial support for system implementation, will be delivered to the agencies that funded the system design.

3. Costs for System Design

Costs will be affected by the level and quality of cooperation by in-country participants. These participants will include personnel from the Government of Guatemala, aid agencies (such as USAID, IDB, and World Bank), and private groups such as the Penny Foundation. At this time, our best estimate for funding required to design the MPLIS is approximately \$180,000. This would include costs for a team of five from the United States, travel, and administrative support by the Land Tenure Center at the University of Wisconsin.

4. Financial Support for Systems Design

An MPLIS will provide substantial benefits to a variety of land information users. Therefore, we believe it is logical for the system design to be funded by a consortium. Potential contributors include the Government of Guatemala (both with general purpose funds and with funds collected for land registry reform, i.e., the Q5 per transfer tax. Use of funds from the registry reform tax is logical since it is assumed that registry reform will be a top priority item in the MPLIS design and development. Other contributors could include USAID, Inter-American Development Bank (IDB), and the World Bank. These agencies all have an interest in improved land information in Guatemala and would likely be involved in subsequent funding of actual system implementation. Therefore, their support in the design stage is logical as well.

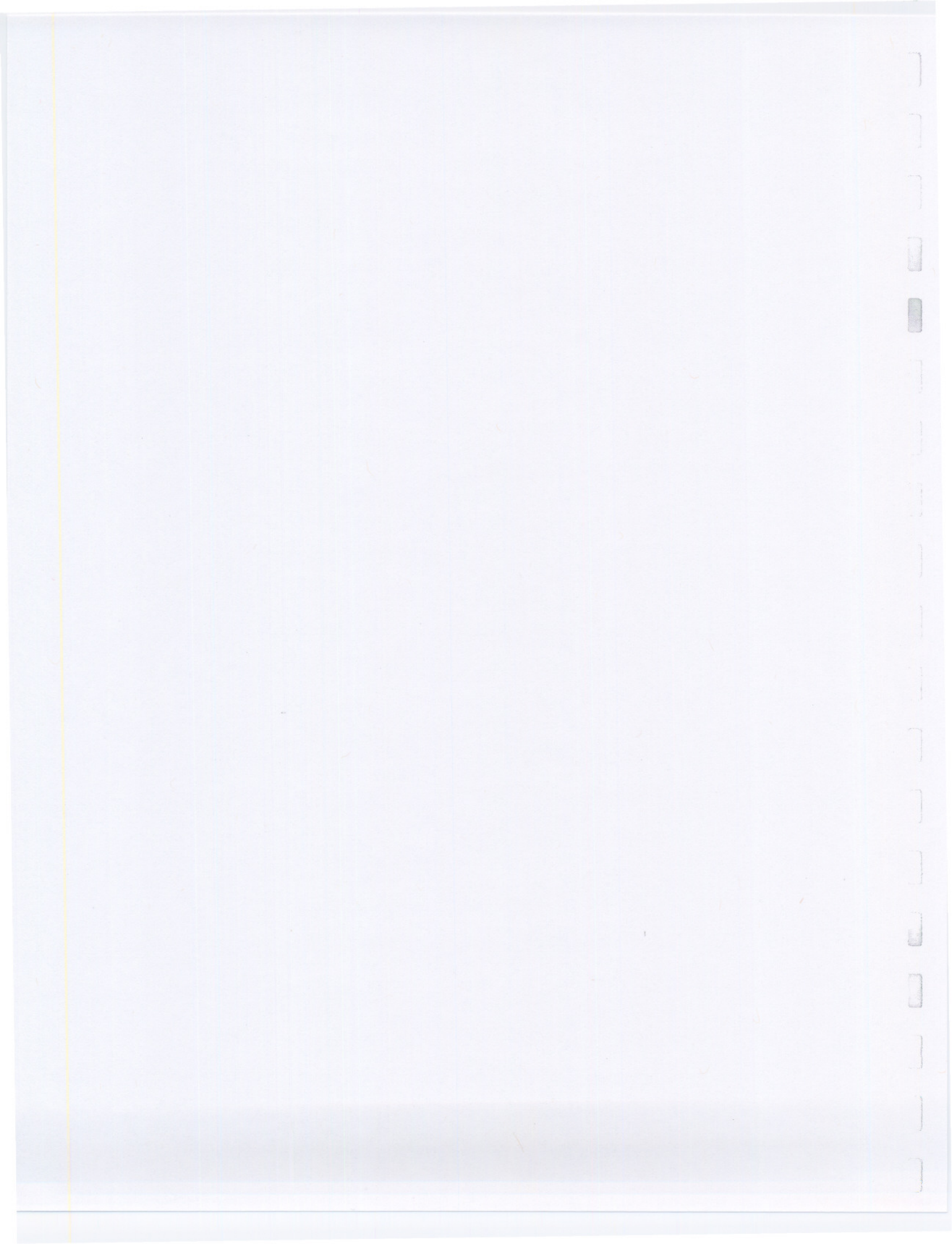
As we noted at the outset of this section, it may be necessary to address short-term, more modest objectives in early stages of land information system improvement in Guatemala. However, it is critical that a comprehensive plan for an MPLIS be prepared before modernization efforts begin. This comprehensive plan will help ensure that early stage efforts will be compatible with and lead to the more complex steps in the process as resources permit and needs require.

ENDNOTES

1. According to Schweigert, "the apparently 'low productivity of labor' in agriculture...is accounted for by the fact that the agricultural sector contains within it a large subsistence component" (Schweigert 1990, p. 22). Schweigert claims that this subsistence component is often not included in measurements of GDP, while agricultural labor, often measured as full time, is in fact largely seasonal and temporary.
2. The Gini coefficient is a measure of the concentration of goods or resources. In the case of land, it is calculated based on the percentage of land held in categories of farm by farm size. The coefficient ranges from one to zero—zero representing theoretically complete equality and one theoretically complete inequality of the distribution.
3. Sub-family farms are those with less than seven hectares of land.
4. A *manzana* is a measurement of land equivalent to 0.7 hectares.
5. This is a function of several factors. General largeholder opposition to land market programs stems from fears of renewed attempts at land reform. More specifically, *latifundistas* do not like having *campesinos* as neighbors, whom they consider to be thieves. More importantly, in the event of a confiscatory agrarian reform, farms bordered (as those populated or rented) by *campesinos* are considered more likely to be targets of reform and expropriation.
6. A *quintal* is a measure of weight equivalent to one hundred pounds.

ANNEX A

LIST OF PERSONS INTERVIEWED



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The following is a partial list of the persons interviewed, along with their affiliation. All meetings were held in Guatemala City.

Attorney Marco Antonio Castro Hernandez	Property registrar (1/22, 1/24)
Attorney Virgilio Reyna	Chief assistant and attorney for property registry (1/22, 1/24, 1/28)
Attorney Glayds Anabella Morfin Mansilla	Attorney and member of the National Commission for Registry Reform (1/23)
Attorney Alfonso Carrillo Castillo	Attorney and notary, president of the National Bar Association (the "Colegio de Abogados") and member of the National Commission for Registry Reform (Comisión Nacional de Reforma Registral) (1/23)
Jorge Rafael Recinos Acevedo	Director general of the Registry of Intellectual Property and author of a Bar Association proposal for modernization (1/23)
Rodolfo Cardenas Villagran	Attorney, notary, and former mercantile registrar (1/23)
Ernesto R. Viteri E.	Attorney, member of Board of Directors of the Commission for Registry Reform, and personal advisor to the president of the Republic (1/27)
Attorney Carlos Enrique Ortega T.	President of the Instituto Nacional de Transformación Agraria (INTA) (1/27)
Engineer Agr. Jose Guillermo Gonzalez Mencos	Second vice president of INTA (1/27)
Engineer Rene Gonzalez	Subdirector técnico of the Instituto Geográfico Nacional (IGN) (1/28)

Engineer Edgar Antonio Bram H.	Head of the Cadastre Division of IGN (1/28)
Rachel Laush	Presbyterian Church USA, assigned to Centro Evangélico de Estudios Pastorales en Centroamerica (CEDEPCA) (1/29)
Terry Brown	USAID Mission director
Steve Wingert	USAID Mission deputy director
Gordon Straub and Paul Novick	Office of Rural Development in USAID/Guatemala
Rod Tsuji	Penny Foundation Project
Alfred Naketsuma and Keith Kline	Environmental Project in USAID/Guatemala
Elizabeth Warfield	Fiscalization Project in USAID/Guatemala
David S. Hoelscher	Economics and Trade Office in USAID/Guatemala
Michael Alban	PDSO in USAID/Guatemala

ANNEX B

BIOGRAPHICAL DATA ON PROPOSED DESIGN TEAM

