

PN AAT-851

Quantitative Data Collection and Analysis

in USAID/Panama

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Prepared under contract number OTR-0091-0-00-2314-02 for PPC/PDPR/RD

April 6, 1983

MEMORANDUM

TO: USAID/Panama, Mr. Benjamin Severn
FROM: PPC/PDPR/RD, Joan Atherton 
SUBJECT: Preliminary Report by Dr. Chris Hermann on USAID/Panama's
Data Collection and Utilization

Attached is a first draft of Dr. Hermann's report on mission collection and use of non-financial quantitative information in Panama. I want to emphasize that this is a very preliminary draft, complete with uncorrected typos. Dr. Hermann was anxious that you receive a copy as soon as possible. I do plan to clean the report (not a major editorial overhaul), and would appreciate your comments before I do so. Please note that this copy is not for distribution until it is edited, after which I shall be forwarding multiple copies to you for distribution.

Executive Summary

This report concerns USAID/Panama's current support for the collection and analysis of quantitative data to 1) meet program and project information needs and 2) to develop the capacities of GOP ministries to use quantitative data for administrative and planning purposes. Information for this report was obtained from interviews with twenty-two USAID/Panama staff and contractors. This report is one in a series of six which will be used to develop a typology of USAID mission capacity for in-house data use and for facilitating data use in host country ministries. The main findings of the report are as follows:

1) USAID/Panama has supported various data collection and analysis activities when necessary; however, the mission has been most successful in actually using data in the employment generation component of its program. It has made much less effective use of data in the area of agriculture and rural development. Use of quantitative data in mission activities has been limited by: a) insufficient work time for data related activities; b) a lack of staff with quantitative skills; c) limited GOP capacity and interest for data collection in certain areas; d) little encouragement or support by senior management for data use; and e) the lack of automated data processing equipment in the mission. This situation is changing: a) the current mission director generally supports improved economic analysis for mission activities; b) current projects will generate data useful for

GOP and mission planning if they proceed as planned; and c) the mission is considering upgrading its word processing system to enable data processing as well.

2) the mission has supported several key studies concerning employment and labor force problems and has used the findings of these studies to formulate its Employment Strategy and design the Employment Planning and Generation project. EPG activities will produce several important data bases which will greatly assist the GOP in its efforts to generate new employment through increased domestic and international investment in Panama and better utilization of human resources. There are plans to coordinate data related activities between EPG and the Entrepreneurial Development project. The Agency and USAID/Panama need to promote greater coordination of data use such as this.

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3) Data use for/agriculture and rural development component of USAID/Panama's program has been adversely affected by a) indecision and inconsistency about the mission's involvement with agricultural development; b) inaction on the part of the GOP and USAID/Panama to update or revise the 1973 Agriculture Sector Assessment; c) the limited capacity for independent data collection and analysis by the Ministry of Agriculture and other GOP ministries; and d) the inability of agriculture and rural development projects to collect and analyze data as planned. On the other hand, if current agriculture and natural resource projects proceed as planned, much needed basic data in the

areas of resources management, agriculture technology adaptation and extension services will become available.

4) Limited GOP capacities for independent collection and analysis of quantitative data have affected data use by USAID/Panama. Mission have staff/relatively good access to data held by the GOP; however, the quality and comprehensiveness of certain data sets is problematic. The mission has found that GOP ministries tend not to fully analyze available data and that some of their analyses are misleading or inaccurate. GOP ministries ^{are} affected by a) inadequate staffing and funding for data related activities; b) too few trained staff; c) a lack of automated data processing equipment; d) their inability to retain staff who have received training; e) poor use of trained staff and f) changes in GOP administrations. USAID/Panama's current projects will attempt to improve GOP ministry capacities for more effective use of quantitative data.

Table of Contents

Overview	1 - 5
1. Employment Generation	5 - 16
2. Agriculture and Rural Development	16 - 38
2.1 Recent Factors Affecting Agricultural Data Collection	16 - 21
2.2 Agricultural Technology Development	21 - 24
2.3 Integrated Rural Development	24 - 27
2.4 Watershed Management	27 - 30
2.5 Rural Growth and Service Centers	31 - 34
2.6 Rural Access Roads	34 - 35
2.7 Managed Fish Production	35 - 37
2.8 Guaymi Area Development	37 - 38
3. Human Resource Development and the Regional Housing Office	38 - 40
4. GOP Capacities for Data Related Activities	40 - 45
5. Conclusion	45 - 47

USAID/Panama

Overview

USAID/Panama is one of the smaller Latin American missions. Its U.S. direct hire staff has been reduced from thirty-four to seventeen over the past several years. The mission's current annual budget is \$11 million. The scale of USAID/Panama's operations can be viewed as proportional to the size and development needs of Panama. The total population of Panama is approximately two million and the standard of living is much higher than that of other countries where USAID is active. On the other hand, in terms of foreign policy objectives, Panama is of strategic importance to the U.S. both politically and militarily. The country has escaped the violence which affects neighboring Central American countries and represents an area of political and economic stability in a turbulent region. The economic and social development Panama has achieved constitutes a sound basis for more sustained growth. Furthermore, despite Panama's progress over the last decade, the country now faces a severe problem in generating sufficient employment for its expanding urban population. Failure to do so could have serious destabilizing effects on the country. At the same time, agricultural production must be maintained at levels adequate to meet domestic demand for basic food supplies. USAID/Panama, therefore, must use its limited manpower and resources all the more effectively to meet these objectives. Better program planning and project design will be necessary and accurate, timely data for applied analysis should / assist

the mission. This combination of factors, therefore, makes USAID/Panama an important example of one part of the spectrum of USAID mission capacity and need for improved or expanded data use.

USAID/Panama's program is divided into two main components: employment generation and agriculture/rural development. The mission's principal involvement with data collection and analysis is, therefore, concentrated in these two areas. Because of the progress Panama has made in providing basic human services, the mission has substantially reduced its support for population, nutrition, health and education projects. Further improvements in these areas is now primarily the responsibility of the GOP. The mission will only provide support and coordination for centrally funded USAID/Washington projects and give assistance to PVOs and other local organizations active in these areas. The mission's current human resource development efforts (which involve data use) focus on employment training. As a result, a major area of data related activities (i.e., population, health, etc.) has been eliminated from USAID/Panama's responsibilities.

Even taking into consideration the scale of USAID/Panama's operations, in past years the mission has provided only minimal support for data related activities. In comparison to USAID/Honduras, for example, USAID/Panama has been far less persistent and less systematic in its efforts to develop data bases and GOP capacities

for data use. Major constraints to greater involvement with data collection and analysis and better use of quantitative data in mission activities have included: 1) insufficient work time due to heavy involvement with project implementation problems; 2) a lack of quantitative skills among mission staff; 3) the limited capacity of the GOP ministries for independent data collection and analysis which has been exacerbated by a rapid secession of administrations; little encouragement or support for analytic work by previous mission directors; and 5) no access to automated equipment suitable for data processing. Recent changes indicate that improvements will be made because 1) the current mission director supports better economic analysis for mission activities; 2) projects currently underway will, if successful, improve GOP capacities for data related activities; and 3) the mission will probably upgrade its Wang word processor (probably through the purchase of a microcomputer) which will make in-house data processing possible.

In regard to the two main components of USAID/Panama's program, the mission has made very effective use of quantitative analyses concerning employment and labor demand. USAID/Panama developed its current employment generation projects using information obtained from ILO/PREALC's employment study, INCAE's private sector study, an analysis of income distribution (done by Allan Brohel for the Workforce Development Project, 1978) and projections of employment

requirements under varying economic growth rates and labor-intensities of production (i.e., a sensitivity analysis done by Guillermo Chapman). Employment generation projects will develop important data bases and improve the capacity of GOP ministries to use quantitative data for policy analysis.

The mission has not been as successful in using data and analysis to formulate an effective agriculture strategy. In part this is the result of uncertainty (or inconsistency) about the mission's involvement with agricultural development. A decision was made at one point to de-emphasize the agriculture component of the program which was later modified. The Canal Treaty further encouraged the mission to concentrate more on private sector development. Though agriculture remains a second area of concentration, neither the mission nor the GOP has developed a comprehensive sector strategy. For various reasons, an update or follow-up to the 1973 Agriculture Sector Assessment was not conducted. In the interim, data bases have degenerated. The situation has been complicated by changes in GOP administrations which have affected ministry staffing and operations. Furthermore, the Ministry of Agriculture (MIDA) has little capacity for independent data collection and analysis. For example, MIDA has been counting on obtaining basic data from the census which was conducted two years ago but which has not been made available (as of November 1982). The GOP for its part has not

been particularly interested in developing a coherent sector strategy. Another contributing factor has been that some projects which might have produced useful data, such as the Rural Growth and Service Centers project, have encountered problems which will interfere with if not eliminate planned data collection and analysis. On the other hand, several current projects, such as Watershed Management, have the potential for generating some very important data. In short, if USAID/Panama plans to maintain the agriculture component of its program, it should consider giving greater attention to improving agricultural data bases and upgrading the analytic capabilities of GOP ministries involved with agriculture.

1. Employment Generation

Perhaps the single most important domestic problem Panama currently faces is generating sufficient employment for its growing labor force. Because no employment survey has been conducted since 1979, the current level of unemployment can only be roughly estimated. USAID/Panama economists suggest that unemployment is presently in excess of fifteen percent and other evidence indicates that rates are as high as thirty-five percent in some parts of the country. It is likely that unemployment will increase if current economic conditions prevail. For example, it is estimated that the labor force is growing twice as fast as the creation of new jobs (i.e., 16,000 new workers annually for 8,000 new jobs). The problem is

particularly acute in the metropolitan areas. Even official government figures estimate that seventy-five percent of the unemployed are located in urban areas. The problem takes on added importance in light of projections of continued urbanization which will raise Panama's urban population from fifty-seven percent of the total to seventy-one percent by the end of the century.

USAID/Panama's 1981 Employment Strategy paper estimated that with present EAP (economically active population) and labor intensity rates, even a very favorable seven percent annual growth in GDP will not reduce unemployment to acceptable levels. The severity of Panama's unemployment problem is in part due to the economic recession of the 1970's. However, unsound, politically motivated economic policies of the GOP antagonistic toward the private sector were a contributing factor. As domestic growth lagged in the mid-70's, public investment had to be cut. Only recently has private investment begun to offset this decrease in public spending. Obviously, prolonged economic growth is necessary to cope with Panama's rising unemployment.

Panama will need to stimulate domestic private investment as well as attract new international investment. A key element for the GOP will be establishing a positive mutually beneficial relationship with the private sector. GOP policies will have to become more sensitive to and supportive of the needs of the private sector to over-

come the distrust and animosity created in the 1970's, Panama must maintain a suitable political environment which demonstrates to the international business community that it is a safe place for investment. Efforts must be made to increase the labor intensity of Panama's economy so as to provide more jobs for its labor force. To accomplish these goals, the GOP will require much better information about labor supply and demand, future labor requirements, conditions affecting small and medium sized businesses, the banking system and credit supply, and other related issues than is currently available. Such information will be essential for planning domestic improvements as well as attracting foreign investors to Panama.

USAID/Panama is assisting the GOP in developing these necessary information systems and the analytic capacity to use them through the Employment Planning and Generation project (EPG). The purpose of the project is to strengthen the GOP's institutional capacity to analyze, develop and evaluate economic policies which will stimulate private investment and labor intensive types of production. As a result of improved planning and policy analysis, the project is expected to contribute to increasing the overall level of employment, raising worker productivity and providing greater employment opportunities for the poor. These goals are central to USAID/Panama's employment strategy as well. To generate additional employment, EPG will also provide information useful for attracting international

investors to Panama. However, productivity of workers must be increased to compensate for the higher wage structure of the country.

One component of EPG is the development of an employment policy analysis and research system (PARS). One USAID/Panama staff reported that at present the GOP's economic policy analysis is done in a chaotic crisis management fashion. The principal reason for this is the Ministries of Commerce, Labor and Planning all lack adequate numbers of technically trained staff. Even the Controller's Office which functions as a central information storage/clearing-house is years behind its workload in some areas. Complicating the manpower problem is a lack of automated data processing equipment. Consequently, much of the ministries' information handling activities are done manually. PARS is a direct attempt to begin to reverse this situation. PARS will consist of a technical administrative unit which will conduct special studies and provide information to an employment development commission consisting of GOP policy-makers and representatives of the private sector. Consultants will provide technical assistance to the administrative unit. A major goal of PARS is to bring together government officials and private business men to facilitate a better understanding of each other's concerns about employment. It is hoped that this exchange will lead to policies which are more acceptable to the private sector and are more effective in stimulating private investment.

PARS staff will receive training to enable them to conduct necessary studies. The types of studies PARS is expected to undertake include analysis of current employment potentials, possible domestic production substitution for imported goods, future market development, labor intensification of Panama's industries, increasing the number of small scale enterprises and expanding export markets particularly for labor intensive goods.

A second component of EPG will be the development of a manpower information system to improve the planning capacities of the Ministry of Labor. This will involve improving the ministry's capacity for collection, management, analysis and storage/retrieval of accurate and timely data concerning Panama's labor force. Labor market and manpower studies will provide information to 1) job training institutions to keep them abreast of current and future labor requirements; 2) workers about potential employment opportunities; 3) private investors and public planners and administrators to assist them in coordinating their activities with the existing labor supply. The system will also contain information about employment assistance, such as training support for small businessmen. A statistical profile of the unemployed including their present work skills will be developed which could be of considerable utility. Approximately \$200,000 has been allocated for computerizing the Manpower Information System. When the system becomes operational,

the Ministry of Labor could develop a job placement capacity by matching the unemployment profiles with data on current employment opportunities.

In regard to existing data for the MIS, the authors of the EPG project paper write:

"While these basic data have many weaknesses... a more fundamental weakness is the lack of local capability to completely utilize and analyze existing information. This has resulted in many expensive field surveys when existing data could have been manipulated to provide appropriate results. In addition surveys of manpower requirements have been fragmented and limited to specific occupational, industrial and geographic areas. Global estimates of employment demand have only been made as a result of special surveys, often requiring the assistance of outside experts." (1981:21)

To correct these problems, the project will provide technical assistance to GOP ministries and agencies (about twelve in all) involved with employment issues to coordinate their activities and increase their capacity to fuller utilize available data.

EPG's third component, the Supervised Credit Program, will create a fund within the National Bank of Panama to provide credit to labor

intensive, small and medium sized firms. Recent studies indicate that small Panamanian businessmen operate in a very tight credit market. Current banking practices effectively preclude most small potential borrowers because of high collateral requirements (as much as one hundred percent of the loan) and short repayment periods (typically from six months to no more than three years). The Supervised Credit Program will help ease these constraints by providing credit for small businesses. An initial fund of \$10 million will be used to make small loans available to businessmen. To guarantee that the loans will be used in such a fashion that they will produce additional employment, businesses which are primarily involved with commerce will be required to use the loan for purposes which will generate one new job for each \$10,000 borrowed. For businesses engaged in manufacturing and services, one new job must be produced for each \$5,000 borrowed. The project manager for this part of EPG estimates that a total of 135 loans will be made where one new job will be created for each \$4,800 borrowed. Of course the fund is supposed to be self-sustaining. That is, as loans are repaid, money will be re-lent to new and former borrowers and interest is expected to cover losses due to defaults. In terms of data collection, information about borrowers and their businesses will be used to create a data bank on small and medium scale enterprises. EPG has only recently begun and the loans component has just gotten underway. But it is reasonable to expect that as these

data are collected, they could be useful to the Manpower Information System as well.

Complimenting the Supervised Credit Program is the Entrepreneurial Development project funded through the Human Resource Development office. APEDE, the Panamanian Association of Business Executives, is participating in this project. The purpose of the project is to develop the managerial skills of small businessmen to make them more efficient and productive. A series of courses covering accounting, financial analysis, cost and inventory records, cash flow, marketing, production technology, administration and control, tax reporting, risk assessment and preparation of improvement projects are offered. Assistance is then given to participants to help them implement what they have learned in their own businesses. Though Entrepreneurial Development has been restricted to just the Panama City and Colon areas, USAID/Panama expects to be able to provide additional funding to expand the project to other parts of the country. The mission has engaged a U.S. PVC, Partnership for Productivity, to collect information for the project evaluation. A before-and-after design will be used and baseline information about the businesses of those participating in the project will be collected. The plan is to measure changes in production and productivity resulting from better business management. Panamanians will also be trained so that they will be able to conduct such evaluations independently in the future.

The Entrepreneurial Development project is being coordinated with the Supervised Credit Program. Those who receive management training are given higher priority for obtaining loans. USAID/Panama staff working on these projects report that they want to merge the data each generates for further analysis. For example, it would be important to know whether those businessmen who received training were more successful in utilizing their loans than were those who did not receive training. That is, did their training help them use the loan effectively to increase their productivity, income, number of workers, capital investment, etc. Combining the data sets could assist project monitoring by showing whether those who received training applied for and received loans and vice versa, whether those who received loans also received training. The results of such data use could be of importance to the National Bank. If the data show that training recipients used their loans more effectively, the Bank might require all loans applicants in the future to first participate in the business training program.

USAID/Panama's employment generation activities also support the National Investment Council which will attempt to attract new investment to Panama. The Council will be responsible for promoting and facilitating investment in Panama with the objective of creating new employment. The functions of the Council will by necessity be comprehensive. Market research will determine profitable investment

opportunities consistent with employment generation objectives (e.g., labor intensive production). This information will assist the Council's overseas offices in the U.S., Europe and Japan identify potential investors, such as firms interested in relocating to reduce production costs. After attracting investors to Panama, the Council will provide legal assistance, banking and real estate services for plant location and development, and manpower training. In short, the GOP envisions the Council as a one-step agency to streamline the entire investment process in Panama.

The data and information requirements for the Council to function adequately are substantial. The consultant currently working with the Council states that a broad array of economic and industrial indicators are needed to develop an accurate picture of the investment opportunities and advantages in Panama. Such information will assist the promotion efforts of the Council and will include data on the availability of skilled workers, labor costs, transportation costs of raw materials, government tariffs, quotas and subsidies, credit and banking facilities, employment and migration statistics, terms of trade and measures of national economic performance. Technical assistance will be provided to upgrade staff skills and to develop the data bank. Much of this data will be obtained from GOP ministries which makes efforts to improve their capacities to collect and process such data all the more important.

It should be pointed out that the employment generation component of USAID/Panama's program was developed using information obtained from a number of studies involving data collection and analysis. In terms of the logical use of data and analysis for program and project planning, some mission staff view employment generation as the bright spot in USAID/Panama's operations. This opinion is borne out by interviews with mission staff. It was obvious that these individuals (most of whom were Panamanian) appreciate and understand the utility of quantitative data and analysis as a guide to their activities. It was also apparent that at the planning stage thought was given to coordinating data related activities. Moreover, EPG, Entrepreneurial Development and the National Investment Council will generate additional data which should assist future planning by both the GOP and the mission in this very important area.

USAID/Panama's use of data for these activities is noteworthy simply because the Agency's planning and strategy formulation is too frequently not guided by data and analysis. USAID staff (and this is not restricted to USAID/Panama) have described the planning process as little more than an exercise of personal predilection. Apparently it is not unheard of to first design a project or even entire programs and then make a search for data which will support what has already been decided. As one USAID/Panama staffer observed, this kind of "pseudo-planning" contributes to the implementation problems which

arise at the very outset and subsequently consume so much staff time throughout the duration of the project. One hears over and over again about how cost effectiveness should heavily determine the Agency's decisions. That argument is raised to counter suggestions for better data use in the missions - i.e., will the improvement really be cost effective? A better question might be whether it is cost effective not to do so. Is it cost effective not to provide the support necessary to make rational decisions guided by accurate data for project design, for instance? Is it cost effective to devote so much staff time to project implementation problems which are the result of inadequate project design? The Agency needs to take whatever action is necessary to guarantee that data are used in a logical fashion for rational planning just as USAID itself advocates to LDCs.

2. Agriculture and Rural Development

2.1 Recent Factors Affecting Agricultural Data Collection

In the FY84 CDSS, USAID/Panama describes agricultural development in Panama during the last decade as "stagnant", sectoral contribution to growth in GDP as "lackluster" and agricultural production as "inefficient". Panama's poor agricultural performance is clearly evident in the increase in food and fibre imports during the 1970's and the country having the lowest yield per hectare for basic grains in Central America. In part such poor performance is the result of

politically motivated agricultural policies implemented by the GOP. Price controls, export policies, lack of funding and staffing for the Ministry of Agriculture (MIDA), elimination of extension services, a reduction of agricultural research, government run agro-business and a concentration on promoting the asentamientos using capital intensive technology have all contributed to Panama's current agriculture malaise. But just as with industry and commerce, the GOP's antipathy toward strengthening the private sector as the principal mechanism for agriculture and rural development appears to be the root of the problem.

Only recently has the GOP begun to reconsider and abandon some of its earlier agricultural policies. Economic analysis of government run agro-businesses have shown these enterprises to be inefficient. The GOP has discontinued its banana enterprise and is considering restructuring its sugar business. The GOP's efforts to promote the asentamientos has proved equally unsuccessful. Instead of developing economically viable cooperatives, the asentamientos strategy has essentially produced government run farming units which employ capital intensive technologies (completely contradictory to Panama's needs) and which are less efficient than independent small farmers. Consequently, the GOP is now willing to redress its neglect of the private sector and promote the development of small farmers as well as the asentamientos.

Given that the GOP's agriculture policies throughout the 1970's were for the most part inconsistent with USAID's orientation, it is not surprising to find that the agriculture component of USAID/Panama's program has suffered. An unfortunate sequence of events seems to have run counter to formulating and implementing a sound effective agriculture strategy. In the late 1970's, a decision was made to de-emphasize the mission's involvement with agriculture. This decision was subsequently modified. The Canal Treaty also encouraged the mission to concentrate more of its resources on employment generation and less on agricultural development. The ambiguity which surrounded USAID/Panama's commitment to agricultural development did not prevent continuing funding agriculture and rural development; however, the mission/without formulating a coherent sector strategy.

The indecision about a proposed agriculture sector assessment is indicative of the current situation. The mission produced an agriculture sector assessment in 1973 using primarily 1960 and 1970 census data. When the mission began considering an update several years ago, thought was given to what role the GOP should play in the process. For example, should the update cover only those areas defined as important by the GOP or should it be more encompassing.? The GOP, on the other hand, only wanted to develop the planning and policy analysis capability of MIDA. When USAID/Panama suggested an institution building and policy analysis project to Washington, the LAC

Bureau argued that the need for this project was not sufficient to warrant it.

The mission continued discussions about the need for a sector assessment since it was now seven or eight years since the last one (actually the data used in the 1973 Assessment were now at least ten years old). Though the FY84 CDSS refers to a forthcoming agriculture sector review (pg. 20), there are no immediate plans for conducting one. In fact, USAID/Panama's program economist recently argued that another assessment was unnecessary because the problems affecting agriculture are essentially the same as they were in 1973. What was needed instead were specific studies which would produce information useful for project design which would deal with existing problems.

The mission's uncertainty about its future involvement with agricultural development and another sector assessment has been complicated by the lack of genuine interest on the part of the GOP for data collection and analysis in this area. At one point USAID/ Washington offered to form a blue ribbon committee to thoroughly review Panama's agriculture sector and propose strategies to accelerate development. Though the administration which held office at that time expressed interest in the proposal, the succeeding administration which soon replaced it was less supportive and, therefore, no action was taken. MIDA's own very limited capacity for independent data

collection and analysis for policy review and planning adds to the present state of inaction. USAID funded projects have and do attempt to train MIDA's staff for more effective use of quantitative data. However, these efforts have been thwarted by changes in GOP administrations. Some ministry staff who have received training have been reassigned to positions which are unrelated to the skills they acquired. Retaining staff after training is also problematic. Those who have received training too frequently leave government or move to higher paying positions in MIDA or other ministries. According to one USAID/Panama staffer, ministry personnel have been able to escape contractual obligations to the government (i.e., so many years of government service for so many years of training) because of the frequent change in ministry officials and directors.

As a result of these factors, it is not surprising that since the 1973 Agriculture Sector Assessment, agricultural data bases have deteriorated. Agriculture data have become out-of-date and, therefore, less accurate and useful. The GOP and MIDA are anticipating the 1980 - 1981 census to provide essential information. But it has been almost two years since conducting the census and data have still not been released. In fact, this Fall (1982), the release date for agriculture data was postponed to the Spring of 1983. By that time (October - November 1982) the mission had decided against a full sector assessment or update. Some staff thought that there was now no need to

persuade or pressure the Panamanians for an earlier release of the data. According the USAID/Panama staff, project implementation has suffered from the lack of timely data. In some instances, important decisions affecting project implementation have been made in a disconcertingly haphazard fashion.

As mentioned earlier, Panama's current government has begun to reconsider and redirect its position on agriculture and rural development. It has recognized the need to improve the condition of small farmers; to withdraw from economically inefficient government run agro-businesses which compete directly with private sector interests; and to encourage private sector growth to achieve increased agricultural production. As this re-direction in GOP policy evolves, GOP ministries will require more timely socio-economic and agronomic data. They will need to develop their analytic capacities which will necessitate staff training and acquisition of automated data processing equipment. As this occurs, USAID/Panama will have an excellent opportunity for supporting data collection activities and expanding its efforts to upgrade the capacities of GOP ministries to use data effectively.

2.2 Agricultural Technology Development

USAID/Panama has obligated \$7 million for the Agricultural Technology Development project. The primary goal of the project is to increase agricultural productivity, particularly that of small farmers,

through improved agricultural research capabilities. Agricultural productivity has been declining in part because of a lack of support for small independent farmers many of whom practice a slash-and-burn type of agriculture. Their productivity is falling because the amount of new land available to them is decreasing as is the fertility of land they presently occupy. Agricultural research which will adapt appropriate technologies and improved farming practices to the conditions of Panama's small farmers is needed. By increasing land and labor productivity, a commensurate increase in income and employment for small farmers is expected.

The GOP and MID have had a very weak commitment to agricultural research especially if it did not pertain directly to the asentamientos. However, in 1978, IDIAP, the Panamanian Agricultural Research Institute, was created to conduct basic research. The Agricultural Technology project will provide technical assistance and training to IDIAP's staff to upgrade their capacity for agricultural research on the major farming systems of the country - crops (grains, vegetables and fruits), beef and dairy, and combined cropping and beef production. Research to develop and adapt agricultural technologies and farming practices will be carried out in eight areas. IDIAP staff will work directly with small farmers so that their results will reflect actual conditions under which the farmers operate. IDIAP's research will be conducted by a multi-disciplinary team which combines technical

experts with social scientists. CATIE, IICA, IRDC, CIAT, CIF and CIMMYT will assist at various points in the project and the IDB will provide additional financial support. IDIAP's activities are also expected to benefit other USAID funded projects, such as Rural Cooperative Development, Grains and Perishables Marketing, Rural Growth and Service Centers and Watershed Management.

A baseline study to diagnose major constraints to small farmer productivity has been planned. The study will help guide the technology adaptation and development process. Farm level data in the eight pilot areas will be collected on size of holding, current farm systems and cropping patterns, biological and ecological factors, land tenure, access to credit, capital investment and production inputs, farm management practices and marketing. According to the project paper, the final evaluation of the project will involve a replication of the initial baseline study. The evaluation will measure the degree of technological change and increased income resulting from project inputs. It will be necessary to include one or two farming areas outside of the project in both the baseline and evaluation studies to control for overall changes that might have occurred during the course of the project.

As of November 1982, technical assistance from the university team working on the project had begun. Work plans were being developed and an agricultural economist is expected to begin work on collecting

baseline data. It is worth pointing out some of the limitations of the data and information that will be generated by this project. As one consultant noted, the project is focusing on the most productive areas of the country and little or no attention is being given to less developed regions where different conditions might prevail requiring different agricultural technologies than those developed for the eight pilot areas. Furthermore, the selection of the eight project areas was not done randomly meaning that the research findings for these areas are not necessarily generalizable to other parts of the country. On the other hand, if the research capacity of IDIAP is effectively upgraded, then the Panamanians should be able to replicate this project in other areas or on a more comprehensive scale.

2.3 Integrated Rural Development

USAID/Panama has obligated \$9.7 million for the Integrated Rural Development project in the district of Sona. The goal of the project is to increase income and employment and to improve the overall quality of life for the rural poor in one of the least developed sections of the country. Improvements in education, housing, health, sanitary facilities, roads, power and communications are planned. These activities will be solely the responsibility of the GOP.

USAID funds will be used for improving the planning and administrative functions of MIPPE, the Ministry of Planning and Political Economy and for agricultural development. Staff training and technical

assistance will be made available to upgrade the capacity of the National Office of Coordination within MIPPE to plan, coordinate and evaluate the various components of integrated rural development projects. An information system to enable the Office to perform economic, social and agricultural analyses is to be established during the course of the project.

The Integrated Rural Development project in Sona also signals a redefinition by the GOP of the importance of social equity issues which in the past have taken precedence over other concerns often to the detriment of rural economic growth. In the 1970's, the GOP discontinued extension services to independent small farmers and focused its resources instead on the asentamientos. This project will correct that situation by extending agricultural services to small farmers as well as the asentamientos. In short, the GOP has recognized the need to increase the production of small farmers. This group has come under increasing economic pressure in recent years which has forced many to abandon farming. To slow or counteract this trend (eventually slowing rural-urban migration), credit and extension services will be provided to small farmers. To improve their economic situation, the project will identify possible agro-industries which use small farm products and construct roads to facilitate marketing their products.

The World Bank and IDB as well as the GOP and USAID/Panama are

especially interested in the new extension service. The result could serve as a model for a nation-wide extension service. So far, thirty development agents have been trained and assigned to different parts of the district. They are creating a card file system which will eventually include all farmers in the district. On a quarterly basis farm level data are collected by the agents concerning household composition, planting, production, access to credit and other key measures of farm activity. Technical assistance is being provided to supervise the agents' data collection activities. The information they are now gathering could prove invaluable to GOP agencies, such as the National Office of Coordination. An important use of this data will be evaluating whether and^{to} what degree the provision of credit to small and medium farmers contributed to increased farm production. However, the data have not yet been entered into a computerized system. The project manager reported that precisely how these data will be analyzed is still uncertain at this time.

The LOGFRAME for this project specifies that only census data and GOP records will be used for project evaluations. These data are to be used to show the extent to which income, employment and the quality of life have been affected by project inputs. The development impact of the project is to include beneficiary analysis and expected continuation of benefits accruing to farmers from the project (precisely how this prognostication is to be made was not speci-

fied in the project paper). In short, the final evaluation will depend on the availability of data not necessarily generated by the project. Perhaps this is no more risky than the usual formula of baseline and follow-up studies which so often either run afoul or are never conducted at all. On the other hand, the delays in the release of census data by the GOP is disconcerting. The project officer reports that some \$9,000 of project funds have been used thus far for salaries, overtime and incentives(?) to facilitate the release of data on Sona. Yet despite the lack of data specifically cited in the project paper, project implementation proceeds. It would be instructive to monitor this project to determine which implementation problems occurred as a result of operating without obtaining data as planned.

2.4 Watershed Management

USAID/Panama has obligated \$10 million for the Watershed Management project. The goal of the project is to promote more rational use of Panama's natural resources. A major objective of the project is to strengthen the technical, managerial and administrative capacities of GOP agencies responsible for or involved with management of renewable natural resources. A major problem the project will address is the inappropriate use of natural resources by traditional small farmers. Extensive deforestation caused by slash-and-burn farming practices has led to serious soil erosion in certain sections of the

country. After clearing, traditional farmers cultivate the land until soil fertility decreases. At that point, they "sell" their holdings to cattle ranchers and move on to new lands. Subsequent over-grazing by ranchers on land unsuitable for cattle raising leads to further deterioration of the land and to greater soil erosion. This problem is especially serious for Panama because of the limited quality and quantity of agriculturally productive land in the country. Soil erosion also affects downstream water uses, in particular, human/^{water} consumption, electricity generation and the operation of the Canal.

Three major watersheds - the Canal drainage, Rio La Villa and Rio Caldera - have been selected for developing improved management programs. RENARE, the Directorate of Renewable Natural Resources, located within MIDA will be the primary implementing agency. The project will emphasize protection and proper management of resources as opposed to re-forestation which is viewed as an appropriate activity for private sector development. Similarly, the project will heighten the awareness of farmers about the importance of proper land management, many of whom are interested in re-forestation of their lands for beautification and limited use. A major objective of the project is to upgrade RENARE's capacity to monitor conditions, design and implement conservation programs and evaluate their effectiveness. At present Renare's information system consists of little more than assigning their staff in a completely unsystematic fashion to gather

general information about conditions in a given location. To improve upon this very informal procedure, the project will attempt to establish a small monitoring system using more rigorously collected, scientifically valid data. Two of RENARE's staff have been trained to interpret remote sensing data. Project funds will also be used to buy a small computer for data processing. Data will be collected to meet specific management objectives - i.e., measurement of erosion rates, silt content, water quality and contaminant levels - in the selected watersheds. Pertinent physical and socio-economic data will also be collected. Such data will be useful to the Geographic Institute, the Hydroelectric Corporation (interested in mapping land resources) and the University of Panama. There is presently no central data bank for information pertaining to natural resource management. But there are plans to develop one managed by the University with terminals located in RENARE and other GCP offices.

The size and sophistication of the monitoring system appropriate for RENARE's and Panama's needs is still under discussion. The USAID project manager is justifiably concerned about the amount and precision of data required by RENARE to accomplish the specific objectives of the current project. He argued that the smallness of Panama should be an important consideration in selecting and developing an appropriate information system. At issue is whether it is cost effective within the framework of the project to acquire more equipment and

provide more training to collect refined data for more sophisticated studies. The question is what decisions affecting the success of the project will actually be made as a result of this. The contractor working with RENARE expressed a somewhat different perspective. Going beyond the confines of the present project, this individual saw a definite need for Panama to have a comprehensive natural resource monitoring system. For example, to promote private sector participation in re-forestation, a coordinated land use system would be needed to encourage investment while safeguarding against ecologically disruptive developments (e.g., construction of logging roads through ecologically fragile areas). Similarly, to protect Panama's shrimp industry, RENARE (or some other GOP agency) needs to monitor mangrove forests and proposed development which would disrupt these indispensable breeding grounds. This does not imply a difference of opinion between the project manager and consultant about the necessity of better data to meet Panama's natural resource planning and management requirements. Rather, it reflects a difference of perspective - the project manager approaches the issue in terms of the on-going project, whereas the consultant looks to Panama's long term information needs. The problem is to strike a balance where project objectives are met without closing off possibilities for further improvements using what the project has accomplished. Admittedly that is easier said than done, but the Watershed Management project seems to be heading toward a workable solution.

2.5 Rural Growth and Service Centers

The Rural Growth and Service Centers project has attempted to stimulate rural economic growth by developing eight selected service centers (i.e., marketing towns) in western and central Panama. USAID/Panama obligated \$10 million for the project which was augmented by an additional \$5.4 million in HIG funds. According to the project paper, the purpose of the project is " ...to set in motion a process..." to increase employment and income for the rural and urban poor in these two regions. The project is an application of central place planning theory. Developing the capacity of key centers to provide essential economic and social services is expected to stimulate local economic growth. The multiplier effects of such growth produce additional employment and raise incomes. These effects encourage the expansion of commerce and industry. The service centers also create markets for small farmers in outlying communities. As the local economy develops, pressure for rural to urban migration is reduced. Ultimately the economy of the entire region develops as an increasing number of communities are drawn into the emerging market system. As a result of this process, local and national economies are more closely integrated thereby reducing economic and social disparities between different sections of the country.

Similar to integrated rural development projects, Rural Growth and Service Centers involves the participation of seven GOP ministries

including the Ministry of Planning which is responsible for coordinating the various project components. The National Finance Corporation (COFINA) was to support the extension or creation of local agro-industries. The Ministry of Commerce provided technical and financial assistance to small businesses and industries to improve the efficiency of their operations. The Ministry of Housing was responsible for overseeing the construction of low income housing. Other project activities included construction of sewer systems, transportation terminals and industrial parks. Some three hundred loans have been made to improve the economic base of the selected service centers. Data about borrowers and the use of the loan will be available for project evaluations. During the course of the project, assistance was provided to GOP ministries to improve their capacities for planning and implementing such projects in the future.

According to USAID/Panama staff, the Rural Growth and Service Centers project has encountered more than the usual share of implementation problems. In fact staff comments about the project suggest that there is a certain sense of relief that the project is coming to a close. The problems which have affected the project go beyond the scope of this report; of particular concern here is the use of quantitative data in the project. To validly measure the development impact that central place theory promises would require extensive

and fairly elaborate data collection and analysis. The project paper states that the final evaluation will involve an assessment of project outputs for which qualitative data will suffice. The proposed goal level evaluation would be more difficult. Before-and-after (project implementation) data would be necessary to estimate the direct and indirect benefits that are expected to accrue to the poor population residing in and around the service centers. At the very least this would require data disaggregated by income level. To demonstrate goal attainment, it would have to be shown for each service center that employment increased, housing and sanitation improved, facilities constructed are being used in an economically productive and efficient manner, that local investment increased and so forth. A third type of evaluation promised by the project paper involved global changes such as improved urban-rural linkages, increased service access, increased employment and more equitable distribution of income. Before-and-after data would be required but now for the region as a whole. But even that would not be enough to be sure that improvements, if they had occurred, are attributable to the project. For example, a comparison with regions outside of the project would be necessary to determine that changes in the project areas are not simply a reflection of changes which occurred nationwide. Even then it would be a leap of faith to say that the project produced a specific "global" change. This type of argument could be

taken to even greater extremes. But that would be unnecessary especially for this project. According to the project manager, the evaluation which will actually be conducted (as opposed to the rather ambitious plans of the project paper) will not demonstrate anything conclusive about the development impact of the project. The point here is certainly not to single out this project for criticism. Rather, here again is one more project which was "to set in motion a process" where data collection and analysis to assist in implementation and evaluation has gone awry. The Agency needs to reconsider the emphasis currently placed on data related activities at the project level. This is particularly important for large, complicated, multi-sectoral projects. USAID needs to recognize the difficulty of measuring "process" and the time required for measurable impact to result from such "process". In essence such projects are being required to produce mini-sector assessments which in a number of instances is proving to be unrealistic. The result is that no worthwhile analyses are done. This issue has been raised in other mission reports and warrants fuller consideration in a following discussion paper.

2.6 Rural Access Roads

USAID/Panama supports a Rural Access Road project which will support the construction of a network of all-weather roads linking farming areas to urban markets. The project assists the Ministry of Public Works to develop its capacity to collect and analyze data

pertaining to farm marketing needs as a guide to their decisions about road improvements or construction. The ministry assigns a team of four staff persons - an economist, an environmental scientist, a social scientist and a civil engineer - to collect necessary data. Approximately fifty percent of the farmers who would benefit from planned road improvements/construction are contacted and data pertaining to farm production is collected. The team also meets with local bank officials, the regional agriculture officer and other government officials to obtain additional information. The data are used to determine the suitability of a particular route and what alternatives are possible. Actual data analysis is very limited and all of it is done manually. USAID/Panama staff report that evaluations of road construction are conducted only after the first year of completion because of the time and expense involved. They occasionally spot check the activities of the ministry team and are of the opinion that the team does a reasonably good job. This system is now three years old and the project officers believe that the quality of data collected by the team continues to improve over time. They also stated that the project would benefit from developing the mission's capacity to provide data processing support.

2.7 Managed Fish Production

USAID/Panama has obligated approximately \$1 million for a pilot project examining the economic feasibility of community managed fish

ponds. The rationale for fish pond construction is that they will improve the diet of the rural population by providing them with an inexpensive source of protein. DINACC, the Department of Aquaculture, located within MIDA is the primary implementing agency. Technical assistance is being provided by Auburn University staff. Twenty new fish ponds will be constructed during the course of the project.

A consumption impact study and economic and financial analyses will be conducted. Data will be collected in the twenty communities where the new ponds will be constructed, in a number of communities with existing ponds and in others without ponds. Household level data will be used to assess the contribution of the fish produced in the ponds to increased protein consumption, the costs to the household, and whether the poorest of the community benefited from the ponds. Community level attributes will be analyzed to identify correlates of successful use of the fish ponds. This information will assist DINACC select the best sites for future pond construction. Data will also be collected on fish production and pond management to determine which management techniques were most effective, whether output was sufficient for the community and whether marketing and distribution operating costs were acceptable. According to the project manager, seventeen of the twenty ponds have been constructed and data collection which started in early 1982 will continue until the end of 1983.

2.8 Guaymi Area Development

USAID/Panama has provided \$500,000 for the Guaymi Area Development project. The Guaymi Indians live in the sierra highlands of the western provinces in Panama. For the most part, they have not benefited from Panama's national development. Many Guaymi live in extreme poverty without adequate health, nutrition, education and agriculture services. Infant mortality is unacceptably high and approximately 85% of the Guaymi are illiterate (which is the exact reverse of the national literacy rate). The goal of the project is to provide basic human services to the Guaymi to improve their overall standard of living. The project will be directed towards establishing government services which address problems identified by the Guaymi in a fashion consistent with their cultural systems. The National Council of Indian Affairs and the Provincial Indian Commissions chaired by MIDA will coordinate project activities. The project will attempt to utilize the resources of other on-going development projects, such as Rural Access Roads, as much as possible.

Baseline data for the project will be collected by the evaluation unit attached to the National Council. These data will be collected by two Guaymi staff persons in each province and will assist in identifying existing problems and appropriate interventions. According to the project paper, data will also be collected for the final evaluation. The LOGFRAME specifies that project goal attainment will be

measured by increases in agricultural production, income, access to health, education and agriculture services and improvement in housing conditions, recreational facilities, nutritional status and Guaymí satisfaction with GOP services. One study has been conducted and planning for a second is underway concerning attitudes toward birth control. It should be pointed out that if the final evaluation is to be as comprehensive as the project paper proposes, a considerable amount of data will be required. Data collected at the start and the conclusion of the project will be necessary to evaluate the effectiveness of GOP services and the improvement in Guaymí living conditions. It is questionable whether these demands are realistic for a project of this size.

3. Human Resource Development and the Regional Housing Office

In conjunction with USAID/Panama's employment generation activities, the Office of Human Resource Development is shifting its focus to work force development projects which will provide job training for un- and under-employed, semi- and unskilled workers. Mission funding for human service projects in health, population, nutrition and education has been cut because conditions in these areas have reached relatively acceptable levels and because the GOP is capable of managing and improving existing programs and service delivery systems. As described earlier, HRD staff are interested in coordinating their training program with the Employment Planning and Generation project. Coordinating HRD activities with the Manpower Information

System, for example, could lead to a GOP job placement service. Similarly, if PARS develops an employment projection capability, HRD could direct its programs to areas where new employment opportunities are anticipated. USAID/Panama and the Agency needs to encourage more of this type of coordinated data use.

The Regional Housing Office located in USAID/Panama has very specialized information needs. Depending on which country is involved, the office obtains data from the World Bank, national censuses or host country ministries. In some instances, special studies are conducted, such as in Costa Rica, to estimate housing supply and demand by income level. The Office also needs information about banking and mortgage services available to potential buyers of project funded housing and of course construction costs for different types of housing. Housing Office staff reported that the quality of data available to them varies by country and subject matter, but that data on actual behavior, such as the amount spent on housing and housing improvements by income level, are difficult to obtain and what exists is not easy to access nor of high quality. Because of its very limited staff size, the office contracts for much of its information services. However, one individual in the Office does have training and experience in data related activities. This individual had worked on the "Study of the Progressive Development of Three Low Cost Housing Projects in Panama". Using little more than simple percentages, ^{the} report

examined the types of improvements made over time by home owners in three different housing developments. Household characteristics such as the length of time of occupancy, family size, employment and income were correlated with housing improvements made since the original purchase.

The staff were of the opinion that the office's activities would benefit from better data use for project design and monitoring. However, one individual thought that less emphasis should be placed on the baseline - follow-up formula for evaluations for housing projects. Not only are such studies expensive and time consuming, but they typically do not allow sufficient time for expected improvements to occur. For example, improved housing is supposed to lead to improved health status. But family health improvements will not become evident quickly nor even by the end of some projects. To actually demonstrate such changes requires accurate longitudinal data as well as controls for other factors which could produce similar effects. Again the issue of measuring processes complicates more fundamental requirements for project evaluation.

4. GOP Capacities for Data Related Activities

Data use for program purposes has been described in conjunction with the two major components of USAID/Panama's development activities: employment generation and agriculture/rural development. The main point to be made about program level data use is that the mission has been much more successful in using the results of quantitative

analyses in its employment generation planning than it has for agriculture and rural development. In this regard, the mission needs to clarify its commitment and strategy for agricultural development and determine what data and analyses will provide useful guidance for this activity.

Like other USAID missions, the limited capacity of GOP ministries to collect accurate data and process it in a reasonable period of time has created problems for USAID/Panama. Panama is far from data poor; however, major improvements need to be made. First, GOP ministries need more automated equipment to expedite data processing and reporting. The 1980 census offers a good example. Two years after conducting the census a complete copy of the data is not available. Agricultural data will not be released until Spring 1983 assuming the date is not postponed again. According to mission staff, the census office is understaffed and much of the work is done manually. Retaining skilled staff especially at middle levels is also a common problem for GOP ministries. After receiving training, many leave the ministry to take higher paying jobs outside of government or seek better government positions in other ministries. The problem will persist until salaries are increased and the GOP strictly enforces contractual obligations for employee training. Staff turnover due to changes in GOP administrations further undercuts ministry capabilities. For example, when the mission was considering an agriculture

sector assessment, some staff thought that working with the Ministry of Planning would be preferable to dealing with MIDA, which had become too narrowly focused and has little capacity for data collection. MIPPE was thought to be more powerful and competent at conducting applied research. However, an internal power struggle resulted in a change of ministry directors. Only recently has MIPPE gotten back on track. Perhaps in the long run, working more closely with MIPPE will prove to be more fruitful. Needless to say, these are matters over which the mission has little control, but it does caution against becoming overly reliant on the GOP for data.

Access to data held by the GOP is generally reported to be good but determining exactly what data are available is sometimes difficult. A consultant for the Cooperative Marketing project reported that an inventory of available data on cooperatives would have been helpful. In this case, access to some very useful data held by the Cooperative Agriculture Office was obtained only through a personal contact. The quality of data collected by the GOP is a more serious problem. Mission staff report that macro-economic and census data tend to be of higher quality than sample survey data collected by GOP ministries. The availability of data corresponding to the necessary level of disaggregation is also problematic. For example, for the Cooperative Marketing project, projections were needed of the demand for capital that would result from project activities, such as supporting cooper-

atives' efforts to produce new marketable commodities. This required data on the cooperatives' current production of marketable commodities as well as their capacity to use additional credit. Some data were obtained from the financial statements of the cooperatives (which the consultant reported to be sound by local standards). But estimates of the total market for a specific commodity and how much of that market could be acquired by the cooperatives had to be made using available GOP data. The consultant found that much of the data were national aggregate statistics, not timely and not broken down by usable categories, such as by region or province. In lieu of the actual data, certain categoric distributions simply had to be assumed. The resulting estimates of costs and credit demand are tenuous but at least they are based on some data. According to the consultant, estimating benefits and returns produced by the project involved, for the most part, making educated guesses because there were no relevant data available. Such problems are hardly unique to Panama or USAID/Panama. It means that the mission will have to support data collection efforts to obtain necessary information for project design as it has done for employment generation and as it will have to do if agriculture is to remain a major component of the program.

Not only are some GOP data bases weak (or non-existent), but analysis of data by GOP ministries is sometimes of questionable accuracy. For example, the program office found GOP estimates of unemployment to be deficient. By underestimating the economically active pop-

ulation and over-estimating the discouraged workers (i.e., those who have stopped looking for employment), underemployment figures were adjusted downward. In re-analyzing the data with more realistic labor force estimates, the mission calculated underemployment to be significantly higher than the GOP/ As pointed out earlier in conjunction with the EPG project, GOP ministries do not fully analyze available data. For example, one mission staffer on his own initiative has been conducting simple analyses of agricultural data. Findings about the necessary level of production to meet minimum nutritional and caloric requirements and the effects of mechanization on specific crops are passed to ministry officials or published in local newspapers as a means of supplementing and assisting the Ministry of Agriculture.

In light of the GOP's limited data collection and analysis capabilities, the mission might consider developing an in-house data bank based on its Wang equipment (either by upgrading the system or by acquiring a microcomputer). The details of establishing and maintaining such a system go beyond the limits of this report. However, mission staff were quite interested in this possibility when asked. They saw a data bank in the mission as a possible solution to some of the problems they have encountered as well as a means for assisting them in various activities. Three benefits that would result from a data bank are 1) it would be one way of coping with the instability and lack of capacity and interest on the GOP side; 2) mission staff,

contractors and even GOP ministry staff would in time have easier access to key data bases and 3) the mission would have a greater capacity to perform in-house analyses either for mission activities or for the GOP.

5. Conclusion

The main points of this report have been the following:

1) Though USAID/Panama has supported a variety of data collection and analysis activities, the mission has been most successful in using quantitative data for the employment generation component of its program. Mission use of quantitative data has been limited by the following: a) insufficient work time for data related activities; b) a lack of quantitative skills on the part of mission staff; c) limited GOP capacity and interest for data collection and analysis in certain areas; d) little encouragement or support by senior management for data related activities; and e) no access to automated equipment suitable for data processing. This situation appears to be changing because: a) the current mission director supports improved economic analysis for mission activities; b) current projects promise to produce some very useful information in key areas; and c) the mission is considering supplementing its word processor system for data processing.

2) The mission effectively used the results of several studies pertaining to employment and labor force problems to formulate its Employment Strategy and design the Employment Planning and Generation project. EPG will produce much useful data which will assist the GOP in its efforts to generate new employment through increased domestic and international investment in Panama. Most noteworthy is the thought being given to coordinating data related activities between EPG and the Entrepreneurial Development project.

3) Data use for agriculture and rural development has been adversely affected by the following factors: a) indecision about the degree of USAID/Panama's involvement with agricultural development; b) inaction on the part of the GOP and the mission to update or revise the 1973 Agriculture Sector Assessment; c) the limited capacity of GOP ministries to keep agricultural data bases complete and timely; and d) the inability of agriculture and rural development projects to collect data as planned. However, if current agriculture and natural resource projects proceed as planned, much needed basic data for future planning in the areas of resource management, agriculture technology adaptation and extension services will become available.

4) Limited GOP capacities for independent data collection and analysis have affected USAID/Panama's use of quantitative data for mission activities. Access to GOP held data is reported to be good; however, the quality and comprehensiveness of some data is problematic.

The mission has found that GOP ministries tend not to fully analyze available data and that some of their analyses can be misleading or inaccurate. Panama is affected by the same problems other LDCs suffer: a) inadequate funding and staffing of key offices involved with data collection and analysis; b) inadequately trained staff; c) an inability to keep staff in positions for which they were trained; d) trained staff leaving government service for better paying jobs in the private sector; e) poor use of trained staff; f) a lack of automated data processing equipment and g) changes in GOP administrations which have caused staff turnover in various line ministries. USAID/Panama's current projects will attempt to improve the capacity of GOP ministries and agencies for more effective use of quantitative data.

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