

PROJECT EVALUATION SUMMARY (PES) - PART I

Report Symbol U-447

1. PROJECT TITLE AGRICULTURAL SECTOR ANALYSIS, PHASE II			2. PROJECT NUMBER 517-55-140-059,1	3. MISSION/AID/W OFFICE Dominican Republic
6. KEY PROJECT IMPLEMENTATION DATES			4. EVALUATION NUMBER (Enter the number maintained by the reporting unit e.g., Country or AID/W Administrative Code, Fiscal Year, Serial No. beginning with No. 1 each FY)	
A. First PRO-AG or Equivalent FY <u>76</u>	B. Final Obligation Expected FY <u>78</u>	C. Final Input Delivery FY <u>78</u>	<input type="checkbox"/> REGULAR EVALUATION <input checked="" type="checkbox"/> SPECIAL EVALUATION 7. PERIOD COVERED BY EVALUATION From (month/yr.) <u>October 1975</u> To (month/yr.) <u>December 1978</u> Date of Evaluation Review <u>Jan. 22-26, 1979</u>	
6. ESTIMATED PROJECT FUNDING			8. ACTION DECISIONS APPROVED BY MISSION OR AID/W OFFICE DIRECTOR <u>1/26/79</u>	
A. Total \$ <u>800,000</u>				
B. U.S. \$ <u>600,000</u>				
A. List decisions and/or unresolved issues; cite those items needing further study. (NOTE: Mission decisions which anticipate AID/W or regional office action should specify type of document, e.g., airgram, SPAR, PIO, which will present detailed request.)			B. NAME OF OFFICER RESPONSIBLE FOR ACTION	C. DATE ACTION TO BE COMPLETED
Prepare a Project Paper for a Mission grant funded second-phase sector analysis project. The project will emphasize internalization of sector analysis capabilities within the SEA through support for SEA's own sector analysis efforts. The project will provide assistance in the following three areas over an approximate 18-month period:			R. Trostle	3/16/79
1.- Analyses of existing data using a wide variety of intermediate level analytical methods. In-country application of computer software packages. Develop closer linkages with farm management level data and utilization.				
2.- Using the sector model for limited additional policy related analyses. Documentation and dissemination of model design and capabilities. Phase out of model activity until GODR institutional capabilities and interest attain sufficient levels.				
3.- Limited assistance to SEA on 1979 farm survey in the areas of data processing and editing.				
Provide for a Mission funded resident advisor to be assigned approximately three-quarter time to the project.			E. Shearer	2/79
Respond to DAEC guidance telegram regarding these decisions.			R. Trostle	Immediately
9. INVENTORY OF DOCUMENTS TO BE REVISED PER ABOVE DECISIONS			10. ALTERNATIVE DECISIONS ON FUTURE OF PROJECT	
<input type="checkbox"/> Project Paper	<input type="checkbox"/> Implementation Plan e.g., CPI Network	<input type="checkbox"/> Other (Specify) _____	A. <input type="checkbox"/> Continue Project Without Change	
<input type="checkbox"/> Financial Plan	<input type="checkbox"/> PIO/T	<input type="checkbox"/> Other (Specify) _____	B. <input type="checkbox"/> Change Project Design and/or	
<input type="checkbox"/> Logical Framework	<input type="checkbox"/> PIO/C	<input type="checkbox"/> Other (Specify) _____	<input type="checkbox"/> Change Implementation Plan	
<input type="checkbox"/> Project Agreement	<input type="checkbox"/> PIO/P	<input type="checkbox"/> Other (Specify) _____	C. <input type="checkbox"/> Discontinue Project	
11. PROJECT OFFICER AND HOST COUNTRY OR OTHER BANKING PARTICIPANTS AS APPROPRIATE (Names and Titles)			12. Mission/AID/W Office Director Approval	
Felipe Manteiga, USAID/DR			Signature <i>P. F. Morris</i>	
William Goodwin, AID/W, IAC/DR			Typed Name	
Ronald Trostle, USAID/DR			Patrick F. Morris	
Rubén Núñez, GODR/SEA			Date	

13. SUMMARY

The Agricultural Sector Analysis (ASA) project being evaluated herein was the first of a two-phase program concept designed to develop within the Secretariat of Agriculture (SEA) the data collection, processing, and analytical capabilities necessary to set feasible and consistent agriculture sector objectives and strategies, and to efficiently allocate resources. Although factors beyond the project's control caused delays and not all of the outputs were obtained, significant progress was made toward the goal. An unplanned effect has been generally increased professionalism within SEA's planning units. The GODR has set more systematic planning as a high priority and the political, organizational and technical environment for it is much improved. SEA has programmed a number of sector analysis activities for the next several years and in the context of the second phase of the ASA Program has discussed the possibility of additional technical assistance with USAID.

14. METHODOLOGY

As stated in the initial project document, dated October 1975, "The project is divided into two phases, or complete 'rounds' of analysis, of 2 1/2 years each. Within the first phase, four separate and sequential activities are contemplated... progressing from rather simple to more complex and powerful analytical structures". The purpose of the current evaluation is to assess the project's progress towards its stated goals after approximately three years of project implementation. During the week of January 21-27, 1979, the evaluation team discussed the project's problems, progress and impacts with a variety of GODR officials and others who have in some way been involved or professionally interested in sectorial planning. The evaluation team also reviewed GODR plans for future sector analysis activities and assessed alternative future directions in the use of intermediate and/or complex analytical methods for additional analysis of existing data and in collecting new data.

Team members were: Hunt Howell and William Goodwin, AID/W; James McGrann, Iowa State University; and Felipe Manteiga and Ronald Trostle, USAID/DR. Key resource people included Dr. Rubén Núñez, GODR; Sandra Rowland, BUCEN; and Robert House, USDA. A list of the principal people with whom the project was reviewed is found in Attachment A.

15. EXTERNAL FACTORS

In addition to the unforeseen rapid turnover of project personnel referred to in Section 21.C, the project suffered from a lack of organizational stability, both within the USG and the GODR. The Latin American Bureau's Sector Analysis Division, which was to provide guidance and oversee project implementation, was abolished a half year after the project was initiated. The resulting vacuum was further magnified when the USDA Sector Analysis Internationalization Group (SAIG) responsible for providing analytical technical assistance, lost and was unable to replace its leader and several staff members. It was not possible to successfully transfer project coordination to USAID/DR because of personnel turnovers in the Mission's limited staff.

GODR agencies associated with the project also underwent structural reorganizations. Initially the project's counterpart agency was the Office of Planning, Coordination and Evaluation (OPCE), which had a limited scope and staff. In 1976 SEAPLAN was established to centralize under one Planning Subsecretary the departments of Planning, External Resources, the Computer Center, and eventually Agriculture Economics. SEAPLAN represented a distinct organizational improvement. However, its operations were drastically reduced during the 1977-78 period of election preparation and change of government. The mid-1978 resignations of a number of officials associated with the project further reduced SEAPLAN activities until the August, 1978 inauguration of the new government.

(Note: A full-time resident technician could have shielded the project from many of these external shocks. See Section 22.A for further comment.)

16. INPUTS (See Attachment B for detailed inputs by activity.)

In general, when project management and coordination was in place either in AID/W or USAID/DR, high quality inputs were provided in sufficient quantities to keep the four designated activities on track and produce a series of beneficial spin-off activities. This was especially evident in the initial project period when AID/W, BUCEN/SEU, USDA/OICD, and USAID/DR personnel were actively involved in the data gathering activities and the subsequent publication of preliminary results. When project coordination was interrupted due to personnel changes or faltering shifts of responsibility to the DR, either the

activity stopped (as in the case of the representative farm model) or the activity continued on a more limited and isolated basis than originally envisioned (e.g., the production of analytical documents and sector model work).

A. Activity #1: Farm Survey

This was principally a BUCEN/SEU effort with support from USDA/OICD. Data collection was performed by Dominican interviewers and supervisors. US personnel inputs were approximately as expected except for editing efforts, which were expanded. Dominican counterpart inputs and institutionalization efforts were minimal in order to meet specified deadlines. Considerable resources were then used to write methodological working documents to fill this gap.

B. Activity #2: Descriptive Analysis

This phase suffered from the lack of both a proposed resident analyst and a continuous focus. Inputs were originally planned for a single Farm Policy Analysis document, but this evolved into the Statistical Working Documents (SWD) series of data tables published by BUCEN and descriptive analytical documents covering employment, income and production. Even though data were available, USAID/DR guidance and Dominican counterpart analysis time occurred only intermittantly, albeit with good results when it materialized. (See Outputs #17.)

C. Activity #3: Representative Farm Models

A prototype representative farm model was developed in 1976 by the AID/W staff with inputs from Harry Wing, then of FAO. With his transfer to USAID/DR, development continued with testing of different linear programming packages for SEA's Computer Center and subsequent acquisition of the Haverly Linear Programming System. These efforts, together with the analysis of data collected on farm production systems, lapsed with his departure.

D. Activity #4: Agricultural Sector Analysis Model

Work on the ASA model started late and suffered the most from the lack of a resident advisor. GODR economist time was only one-third of the proposed input, although of superior quality. Development shifted to the US where efforts by USDA economists and a BUCEN systems analyst (whose need was not foreseen) produced elaborate results but little DR internalization. Without technical support, professional time was spent on routine tasks.

17. OUTPUTS (See Attachment C for elaboration of outputs.)

A. Activity #1: Farm Survey

The farm survey was taken and completed on schedule. Thoroughly edited primary data are available on magnetic tape files for analysis of employment, income, production, credit, land tenure, and other agriculture sector variables. This is the only comprehensive and consistent data source of its type to be collected, processed, and made available for use in the Dominican Republic. Documentation of all of the data collection and processing techniques employed has been published and distributed both in Spanish and English.

The data have some statistical limitations and some users have experienced difficulties in working with the primary data, in spite of the available documentation.

B. Activity #2: Descriptive Analysis

The original plan was for a single farm policy document to be completed in May 1977. This was not done. Instead, two inter-related groups of publications have evolved. Statistical tables from farm survey data were published in Spanish and distributed in thirteen volumes. Narrative analysis of employment was written and published by Dominicans with USAID assistance in December, 1977, and an analysis of income completed by a US technician should be published by 2/79. Rather than complete one production document, the GODR has decided to produce smaller studies of specific topics. A study of basic grains has been completed and studies of farm machinery, crop yields, and production practices are planned. The statistical tables are often considered to be overabundant and too complex for easy interpretation. The descriptive analyses were scheduled for completion by May, 1977 but have not been produced on schedule leaving a gap in the project's planned outputs.

The USAID Mission has derived several specific studies from the survey data. The ASA survey data has been used by the USAID Mission in the Agricultural Sector Assessment, in drafting the Country Development Strategy Statement (CDSS), in designing the swine fever eradication project, and for input to the USAID Education Division's planning.

C. Activity #3: Representative Farm Models

A prototype representative farm model was developed from FAO data for the Cibao region involving alternative production techniques

and allowing for saving and borrowing functions. With Harry Wing's departure, this activity ceased when GODR technicians were incapable of continuing this effort and AID/W interest shifted to the ASA model.

D. Activity #4: Agricultural Sector Analysis Model

A document describing model methodology was released in English in December 1977. Subsequent model structural changes have not been documented for general distribution, and planned policy analyses have not been completed due primarily to a lack of appropriate personnel for this activity.

Outputs in the 1975 PP did not specify the need nor the benefits of intermediate products of the modeling process. Such outputs include: (1) analysis of policy areas in which interdependence of variables is important; (2) LP economics courses for SEA staff, related educational materials, and small scale training models; (3) data generation and evaluation for production activities, income and price elasticities, production and consumption estimates, availability of credit, labor and land, and import/export prices and transportation costs.

18. PURPOSES

The approved project purposes were to:

"1) Provide a profile of small and large farmers suitable for use in later phases of the analysis, for designing assistance activities, and for other kinds of policy analysis (Activity #1).

2) Compare income, production and employment absorption performance of farm groups of different sizes and in different regions of the country, and identify correlations between good and bad performance and factors which might be influenced by program and policy decisions (Activity #2).

3) Illuminate issues relating to farm management and farming systems (Activity #3). Examples would include farmer response to new varieties, technologies, price and interest rate changes, programs which reduce resource constraints, etc.

4) Make available tools for determining resource allocation patterns and policies appropriate for achieving pre-established objectives such as income levels and distribution, production and

employment levels (consistent at the sector level) and for quantifying the trade-offs between objectives (Activity #4).

5) Strengthen GODR medium and long-run agricultural planning capacity (all activities)."

EOPS included timely outputs, actual use of data and analytical tools, assessment of output usefulness by GODR and AID policy makers, and Dominican institutionalization of sector analysis processes.

Problems in the input-output linkages (especially the lack of a resident advisor) exacerbated the output-purpose linkage. Elaborate farm level cross-sectional data are available and some descriptive documents published, but policy issues and implications and program development are spotty. Sophisticated linear programming techniques were emphasized while simpler, perhaps more appropriate types of analysis were neglected. Significant progress has been made in SEA's agricultural planning capabilities even though efforts for internalization in the DR were at times deemphasized for the sake of completing outputs by US personnel.

19. GOAL

The project's goal is:

"Use by the GODR, AID and other donors of the analytical techniques developed as part of this project to set objectives and strategies for the agricultural sector which are feasible and consistent, and to allocate resources and utilize policy instruments in a manner consistent with achievement of these objectives and strategies."

Although not all of the designated outputs of the project have been achieved, there has been significant progress towards the project's goal. The Planning Department of the Secretariat of Agriculture (SEA) is now functioning in a much more professional manner. Its increased data processing and analytical capacities have been used by SEA to improve its current operations and to rationalize the planning process. Examples of this include the Medium Term Plan, the "Plan Operativo" for 1979, the quarterly production surveys, quick planning and processing of a unified personnel/payroll system for SEA, and improved quantitative and qualitative statements by the GODR regarding the agricultural sector.

20. BENEFICIARIES

Two groups were to be beneficiaries of this project. First, the project was to focus directly upon improving the capabilities of SFA personnel to use data and analytical tools to better set the objectives and formulate strategies for GODR programs in the agricultural sector. Second, the project was expected to increase small farm, labor intensive production among rural families through improved resource allocation. This would result in a more equal income distribution and reduce under- and unemployment of rural labor.

Evidence of the ASA project's impact on the planning group is noted in the 1978 Agricultural Sector Assessment draft:

"Dominican agricultural planning and policy analysis activities... have demonstrated considerable progress. In comparison to three years ago when practically no planning capability existed, a competent agricultural planning and policy unit that is producing useful preliminary planning information now is in operation. Although progress has been considerable, much still needs to be accomplished and long-term external assistance will be required to maintain the momentum."

SEA's own commitment to the AID target group has recently been expressed in speeches by the Secretary of Agriculture and is also documented in the objectives set forth in SEA's "Plan Operativo".

- Increase income distribution and reduce poor family indebtedness;
- modify land holdings to insure minimal levels of income and food consumption;
- increase labor utilization by 25%;
- increase the supply of domestic production for basic consumption.

The 1975-76 Survey conducted in this project provides the first comprehensive data on the farm population in the Dominican Republic. The proposed 1979 Survey will provide a point of comparison to measure the impact of GODR and AID-assisted projects in the target group.

A legitimate criticism of the project's impact on the intended beneficiaries is the limited dissemination of project results. With the first phase of the project completed there are needs to: (a) filter

information to the rest of the SEA organization, especially through interaction with the Economic Analysis and Extension units; (b) provide for a more extensive use of project outputs by program implementing agencies; and (c) reach out to rural target groups via simple publications, radio programs, rural centers, etc.

21. UNPLANNED EFFECTS

A. The data processing and analysis capability of SEA's Computer Center has greatly increased. This is due in part to the heavy demands of the ANSE Project, the AID Ag. Sector Loan's inputs into the center, and various training programs for its staff. Other GODR agencies are increasingly requesting the software packages introduced by the project.

B. The quarterly area and production surveys, initiated in 1973, had not been processed until recently. The assistance provided by BUCEN under ASA's aegis, helped improve data collection and processing so that as of January 1979 the results are being published as a timely source of agricultural information.

C. The project's chronic personnel turnover, although detrimental to its implementation, placed in key decision making positions personnel who applied sector analysis experience to their new jobs. The outward and upward movement of personnel had a negative impact on project continuity but was a net plus for the Subsecretariat in terms of its professionalization.

In an effort to identify and recruit well trained people for its own staff, the project occasionally fulfilled a "talent search" function for the SEA. In a number of cases the project could not retain the identified professionals because the SEA used them for other high priority needs which required analytical skills.

The project has resulted in the promotion of Dominican professional women --first to positions of more professional responsibility-- and in some cases, to key executive positions. One of ANSE's project coordinators became the first woman in any of the agricultural agencies to rise to the rank of Deputy Director.

D. Specific tasks in which ASA personnel staff and alumni have participated include the writing of the sector medium term plan, the development of the "Plan Operativo", and the unification of the SEA's personnel and payroll system.

E. The project established an environment favorable for the conceptualization and initiation of a comprehensive resource inventory system (CRIES) project in SEA.

F. The project staff played a decisive role in the conceptual formulation of the "Consumption Effects of Agricultural Policies" project (CEAP), initiated by AID/W's Office of Nutrition.

G. The survey data will be the basis for a National Science Foundation sponsored study of the Dominican fertilizer distribution system.

22. LESSONS LEARNED

A. Project Leadership

Continuity of project leadership is very important. Lack of project leadership resulted in a lack of focus, uncoordinated execution, a difficult transition of responsibilities to the DR, and ultimately a year's loss for beginning preparation of Phase II. This project would have progressed more smoothly and rapidly if there had been a full-time resident technician instead of a part-time liaison to shield it from changes in AID and GODR organizational structures, personalities, and guidance, and to assist both donor and Dominican technicians in the identification of and response to problems. Ultimately the continuity of leadership must be in the host country institution, but a project may be well advanced before this is possible. Until the host institution is capable of assuming leadership, a resident advisor can play many useful roles: provide conceptual and technical guidance; provide stability and evidence of donor commitment; diplomatically exert constant pressure on host country institutions to allocate resources to the project; avert impending crises and respond quickly to those which are unavoidable; and manage TDY technical backstopping in relation to the project objectives and to host country capabilities and needs.

B. Assessment of Institutional Capacity

More time should be spent by the project design team in assessing proposed counterpart's absorptive capacity and tailoring the project to their needs and capabilities. Although this is related to the issue of the scope and magnitude of the projects' objectives as discussed in Section 23, it is more directly related to estimates of the amount and quality of technical assistance which will be needed. Managers of existing projects in the same general area should be fully consulted so that (1) efforts are as complementary as possible; and

(2) these managers become supporters of the project rather than detractors. Analysis of institutional capability, particularly of those institutions with which the donor has not worked previously, takes considerable time (which project design teams usually do not have). Ideally Missions should provide more support to design teams in the institutional diagnosis; however, they rarely have sufficient independent information about proposed counterparts to know whether the design team has done an adequate job.

23. SPECIAL COMMENTS AND REMARKS

A. Scope and Magnitude of Objectives

The project evaluation raises the issue of whether it is better to fully realize a set of limited objectives or only partially realize a set of more lofty objectives. The experience of the first phase of this project was the latter of these two alternatives. From a simplistic perspective it is preferable to fully realize all your objectives; however, if they are too unambitious the net contribution of the project to the larger institutional environment may be very limited. Host country personnel may be more inspired (and flattered) by an ambitious project and therefore commit more of their resources to it. On the other hand, failure to achieve more ambitious goals can be an embittering and frustrating experience for both the host country and the donor organization.

Objectives somewhat beyond the apparent grasp of the host country personnel may be appropriate if the following conditions are met: (1) donor project management is fully capable of providing continuous technical and morale support regarding the objectives and methodologies proposed to achieve them; (2) there is a strong probability of attracting to the host country project staff individuals who are competent to grasp these concepts and methodologies, even though such persons are not on board at the outset; and (3) project management has the flexibility to exploit unforeseen opportunities (e.g., unplanned intermediate products, institutional linkages, etc.).

If internalization of new techniques is an objective, then a further requirement is that host country national staff be substantively involved in all phases of the work. Otherwise, when it comes time to plan a subsequent effort, expectations may be raised to unreasonable levels due to host country personnel lacking familiarity with input levels and methodologies required. This can lead to underestimation of task difficulty and subsequent failures which may (1) set back such activities as agriculture sector planning; or (2) damage the credibility of trained nationals.

B. Farm Level Data and Analyses

Greater emphasis on farm level economic analysis would be useful in understanding the small farmer problem and in formulating agricultural policy to assist the small farmer. One of the planned outputs not realized in Phase I or the Sector Analysis Project was the representative farm level models. Given a significant respondent error from surveying small DR farmers who have complex production systems and the limited amount of farm record data information available, it is important to develop alternative sources of information to use to cross-check, support and interpret survey data. Integration of other data sources into sector analysis efforts will also lead to increased feedback and utilization of the information.

High pay-offs, in terms of improved sector analysis efforts and policy formulation, would be expected from the following areas of in-depth study of farmers in the context of the farm household decision-making process: (1) the interaction between the farm business and the farm household, i.e., the household not only as a provider of labor and off-farm earned cash flow, but also as a consumer of farm production and products purchased off the farm; (2) the response that the small farm makes to different policy instruments; (3) a greater effort to quantify and understand the production, resource, nutritional, and income constraints facing the small farmer.

To achieve effective results in policy formulation for the small farmer, SEA's Sector Analysis Division needs a more direct contact with the small farmer. In planning follow-on sector analysis work, the SEA and USAID should seek ways of increasing the link with the small farmer by incorporating farm management analytical methods into sectoral analysis activities. (See Attachment D for further comments regarding this topic.)

C. Role of AID in Sector Planning

Some thought should be given to the appropriateness of medium and long-range sector planning programs within AID and the feasibility of supporting large-scale analytical efforts such as Agricultural Sector Models. Given the typical need of Mission and regional AID personnel for more short term products, these activities might better be handled through institutions with longer time horizons and with provisions for programmed intermediate products that increase the project's visibility and credibility.

PRINCIPAL PERSONS INVOLVED IN REVIEW

GODR

SEA:

- Lic. José E. Lois Malkún, Subsecretario de Planificación
- Lic. Joaquín Nolasco, Director, Div. de Economía Agropecuaria
- David Alvarado, Sub-Director, Depto. Economía Agropecuaria
- Vitalino Pena M., Estadístico, Depto. Economía Agropecuaria
- Dr. Rubén Núñez, Director, Depto. Información Estadística y Cómputos (Asesor, ANSE)
- Lic. Magaly de Mitchell, Sub-Director, Depto. de Planificación (former coordinator ANSE)
- Lic. Marino Chanlatte, Sub-Director Depto. Información Estadística y Cómputos (former coordinator ANSE)
- Lic. Gerardo Taveras, Proyecto Análisis Sectorial (ANSE)
- Lic. Elba Musalem, Técnico, Proyecto Análisis Sectorial (ANSE)
- Lic. José Ricardo Roque, Técnico, Proyecto Análisis Sectorial (ANSE)
- Idalia de Cepeda, Técnico, Proyecto Análisis Sectorial (ANSE)
- Carlos Capellán, Estadístico, Proyecto Análisis Sectorial (ANSE)
- Lic. Esteban Herreros, Asesor, Centro de Cómputos
- Carlos Ruiz, Director Centro de Cómputos
- Marcos César Justo, Jefe Div. Administración Rural
- Teófilo Suriel, Jefe, Div. Estudios Económicos

OTHER:

- Lic. Flavio Machicado, Former Asesor de Planificación (FAO)
- Lic. Horacio Stagnio, IICA
- Lic. Jerry La Gra, IICA

USAID:

- Patrick F. Morris, Director
- Irwin A. Levy, Deputy Director
- John Clary, Chief Program Div.
- Frank Miller, Acting Chief, Capital Development Div.
- Eric B. Shearer, Chief Agriculture Division
- Rafael Rosario, Deputy Chief, Agriculture Div.
- *- Ronald Trostle, Agriculture Division
- *- Felipe Manteiga, Agriculture Division
- Gary Kempf, Agriculture Division
- Joe Hill, Controller

USDA:

- Robert House, OICD/DP
- Dr. Elizabeth Erickson, OICD/DP
- *- Dr. James McGrann, Consultant, Iowa State University
- Dr. Terry Roe, Consultant, University of Minnesota

AID/W:

- *- Dr. Hunt Howell, PPC/PIAS (former coordinator, ASA)
- *- William Goodwin, LAC/DR/RD

BUCEN/ISPC/SEU:

- Beverley Carlson, Chief, General Surveys Branch
- Sandra Rowland, Statistician, General Surveys Branch

* Members of evaluation team.

DETAILS OF ACTIVITY #1 INPUTS
Person-months for Farm Survey

	Proposed		Actual	
	US	DR	US	DR
1. Sample Design	3	1	3 3/4	1
2. Questionnaire Preparation	3 1/2	1	4	2
3. Field Manual Preparation	3	1	3 1/2	1/2
4. Processing Plan	6	2	5	0
5. Pre-test Questionnaire	2	2	1/2	1
6. Final Preparation for Field Work of Main Survey	3	1	1 3/4	1
7. Interviewer Training	1/2	1	1 1/2	1/2
8. Field Work <u>a/</u>	1	3	1	2
9. Office Preparation for Processing	1	3	1 1/2	3
10. Key punch Questionnaire	1/4	0	1/4	0
11. Edit	7	5	16	1/2
Total	30 1/4	20	38 1/4	11 1/2

a/ Does not include time of interviewers and supervisors.

DETAILS OF ACTIVITY #2 INPUTS
Person-months for Descriptive Analyses

	Proposed		Actual	
	US	DR	US	DR
1. Statistical & Methodological Working Documents				
a. Table Specifications	2 1/4	1	16	1/2
b. Write Methodology	0	0	7	0
c. Computer Processing	4	2 1/2	19	0
d. Translation	1	0	3	3
e. Proofing & Publication	2	1	4	3
Total	9 1/4	4 1/2	49	6 1/2
2. Analytical Documents				
a. Income			4	0
b. Employment	9	10	2	6
c. Production			2	2
Total	9	10	8	8

DETAILS OF ACTIVITY #3 INPUTS
Person-months for Representative Farm Models

	Proposed		Actual	
	US	DR	US	DR
1. Definition of Region & Farm Size Breakdowns	1/5	1/2	1/2	0
2. Determine & Discuss with GODR Structure of the Model	2	1	1/4	0
3. Collect Secondary Source Data for First Model	4	1	2	0
4. Organize Data into Farm Suitable for Entry into Model	2	0	3	0
5. Test & Debug Model	2 1/2	1	7 1/2	0
6. Perform Limited Policy Simulations with Model	3	3	NA	NA
7. Write Working Document in First Model	2	2	NA	NA
8. Repeat Steps 2-5 on Remaining 5 Models	16	12	NA	NA
9. Tests of Some Hypotheses Drawn from Farm Policy Analysis & Elsewhere	4 1/2	5	NA	NA
10. Write Reports on Structure & Conclusions	4	6	NA	NA
Total	40 1/5	31 1/2	13 1/4	0

NA = Not applicable because it was decided that work would not continue.

DETAILS OF ACTIVITY #4 INPUTS
Person-months for Agricultural Sector Model

	Planned 1975 PP	Actual			
		CY 1977	CY 1978	Total	
Personnel Specified in 1975 PP	GODR Economists	24	3	5	8
	AID Economists	14	} 21	} 17	} 38
	AID TDY Econ.	12			
	Consultant	11			
	AID Programmer	5			
	GODR Programmer	5	2.5	2.5	5
	Systems Analyst	0	9	10	19
	Total	71			70

The 1975 PP did not anticipate the need for systems analysis support of the LP software. However, 19 person-months were utilized in this fashion. The matrix generator and report writer computer programming was done almost exclusively by US Economists which diminished their time available for model testing, development and analysis. No LP training was anticipated in the PP, but substantial Dominican economist time was expended in this activity (this is not included in the table). LP software and systems training was provided by the US systems analyst (which time is included in the table).

ELABORATION OF PROJECT OUTPUTS

1.- DATA FILES

- a) Four master-tapes containing the complete questionnaire file with different degrees of editing and summary additions (Differences in the four files are explained Hunt Howell's memorandum on "Contents of Master Tapes containing Dominican Agriculture Sector Survey Information," dated Oct. 20, 1976)
- b) Two files for crop analysis with 41 and 93 recorded crops and crop sets.
- c) Disaggregated income file for farm-level income analysis.
- d) Master segment file.

2.- STATISTICAL WORKING DOCUMENTS

(Note: these 13 volumes provide about 3,200 pages of statistics in tabular form. A Table of Contents of listing individual cross tabulations is available from USAID/DR).

- # 1 Employment
- # 1A Employment
- # 2 Production
- # 2A Production
- # 2B Production
- # 3 Income
- # 4 Credit
- # 5 Marketing
- # 5A Marketing

- # 6 Capital, Fertilizer, Tenancy and Use of Land
- # 7 Number of Observations used in the Statistical Tables
- # 7A " " " " " " " "
- # 7B " " " " " " " "

3.- METHODOLOGICAL WORKING DOCUMENTS

- # 1 Review of Methodology and Unit Counts
- # 2 Procedural History
- # 3 Control and Evaluation of Data Quality
- # 4 Explanation of Data files created from Edited Survey Information
- # 5 Procedures for Developing Additional Data Cells
- # 6 Procedures Used for Weighting the Observations and Calculations of Variances
- # 7 Data Tabulation Procedures
- # 8 Review of Agricultural Sector Models

4.- ANALYTICAL WORKING DOCUMENTS

- Aspectos de Empleo Rural en la República Dominicana. Secretaría de Estado de Agricultura, Departamento de Planificación Santo Domingo, D.N., Diciembre, 1977.
- Descriptive Analysis of Income (to be published Feb, 1979)

5.- OUTPUTS OF SECTOR MODELING ACTIVITY

A variety of products of the agriculture sector modeling may be enumerated. Some of these are:

- A) A series of sector wide LP models with such components as:

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- 1) Price and income elasticity and demand curve estimates
 - 2) Geographic macroregion determination from survey data
 - 3) Production activity specification (including, for a variety of alternative techniques, estimates of factor input and yield coefficients for eleven crops)
 - 4) Estimates of credit availability for crops by institutional source, crop, zone and farm size with estimates of interest rates and transactions (proportion of) cost
 - 5) Estimates of labor availabilities by family and paid labor types by zone and farm size
 - 6) Estimates of land availabilities by irrigation/nonirrigation, zone and farm size
 - 7) Specification of three farm size groups and IAD farms income distribution analysis of simulated policies
 - 8) Export/import prices and transportation cost estimates
- B) A general review of data availabilities and gaps in areas of fertilizer, nutrition coefficients and weather variability effects.
- C) Policy issue development: review of other studies and some detailed formulation of analytical issues in areas of credit and price policy.
- D) A series of ASA LP training models
- E) A representative farm LP model of the Cibao region
- F) Training of Dominican analytical personnel in LP economics and computer software.

- G) A computer center staff skilled in the use of the Haverly LP system including matrix generation, optimization and report writing capabilities.

FARM LEVEL DATA AND ANALYSES

Greater emphasis on the farm level economic analysis would be particularly useful in understanding the small farmer problem and in formulating agricultural policy to assist the small farmer. In addition, given the limited amount of farm record data information available and the large survey respondent error from the small DR farmer who has a complex production system it is important to develop alternative sources of information to use to cross-check and support survey data. Integration of other data sources into the sector analysis will also lead to increased feed back and utilization of the information.

Areas of research with anticipated high pay off from more in-depth study of farmers in the context of the farm-household decision level include: (1) study of the household-farm business interaction; the household not only as a provider of resources (labor, off-farm earned cash flow) but also as a consumption component; (2) study the response that the small farm can make to different policy instruments and why or why not they respond to different policy instruments; and (3) a greater effort to quantify and understand the production, resource, nutritional, and income constraints facing the small farmer.

Three major sources of information can be used to quantify farm level input-output coefficients for farm modeling: (1) farm records, farm level measuring activities, case studies, expert technical experience and engineering approaches that cannot be used for modeling statistical inferences; (2) controlled experimental research findings that again can not be used for making statistical inferences about farm populations; and (3) statistically valid farm survey information.

Given the limited amount of farm record data kept by farmers in the DR, sensitivity of certain income data and the complexity of the farm production systems and varied resource base, one can expect a very large respondent error under the best of conditions. It is thus important to integrate other data sources into the sector analysis in addition to necessary data. Integration of other divisions of SEA, in particular the Farm Management Division, into the data generation and evaluation process will also lead to increased feed back and utilization of the sector analysis information in policy formulation and education.

Representative farm level linear program modeling requires a high level of expertise in a number of areas: (1) basic farm management training in economics and agricultural sciences, and/or support from an inter-disciplinary team; (2) integration of the household and farm business requires knowledge and/or technical support in areas of nutrition, family eating habits, living expenses, labor availability, etc.; (3) knowledge of procedures in data collection, evaluation, budget, etc.; and (4) linear programming construction, analysis, and interpretation. Thus, representative farm modeling requires an inter-disciplinary approach and a very good understanding of the farm business and household if it is to lead to development of an effective educational and policy evaluation tool.

The present reorganization of SEA and increased manpower in farm management both in the central and field staff would allow a greater absorptive capacity of the staff for training and research activities in the DR. Indications are that the level of training and experience is low in economics and the basic analytical tools in farm management (budgeting, cash flow and other financial analysis tools, farm records analysis, etc.). Initial training would have to begin at the low level and progress toward use of more complex tools such as LP, construction and analysis of representative farms. The anticipated pay off of the additional resources in this diversion could be high because of the direct tie to the small farmer through the regional links.

To achieve effective results in policy formulation for the small farmer the Sector Analysis Division needs a more direct contact with the small farmer. A well prepared farm management division can provide that linkage. In planning Phase II of the Sector Analysis Project the SEA and USAID should consider ways of increasing the link with the small farmer by incorporating farm management analytical methods into sectoral analysis activities.