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EVALUATION REPORT OF

TECHNOSERVE INC.

SUBMITTED TO USAID/EL SALVADOR MISSION

ACTIVITY PERIOD APRIL 1, 1979 THROUGH DECEMBER 31, 1979

SAN SALVADOR

FEBRU 28, 1980

TECHNOSERVE EVALUATION REPORT

4/1/79 - 12/31/79

PROJECT No.519-0197

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I. SUMMARY OF ACTIVITIES

Technoserve El Salvador provided ongoing advisory services to 12 sponsor groups during the period, and conducted preliminary investigations of 13 other groups. Five of the sponsor groups received technical/administrative services for their implemented cooperative enterprises, and one of these, CORIGAC, assumed complete management of all activities in November. Five groups received ongoing assistance during the Study and installation stages of their project proposals. One group is receiving assistance at the study stage and services were ended to another group (Corrales, S.A.) after completion of the feasibility study, due to disorganization within members and lack of financial commitment to their project. Several promising groups and project ideas had to be deferred due to advisor workload and limitation of operating resources.

New project enterprises during the period include 3 cattle fattening feed lots, and 2 feed concentrate plants. Regular assistance was terminated during the first quarter of 1979 at the ACADES wholesale grocery cooperative and ACOPECC shirt making enterprise, and both have continued operations without need of Technoserve assistance (hence, report on activities not included).

Institutional relations were numerous and were marked by several significant policy level changes on the part of these organizations as a result of contacts and interchanges with Technoserve personnel. The Technoserve Promotion Committee guiding the decentralization and turnover of the Technoserve program to a locally formed Public Benefit Corporation made excellent progress and it's sponsorship was key in obtaining the support of the El Salvador Ministry of Planning to the turnover project.

Technoserve made several important administrative changes during the report period. A highly respected El Salvadorean administrator and technician in the agricultural field , Ing. F. Lino Osegueda J., was appointed Program Director in November, thus anticipating by several months the firm's goal of placing an El Salvadorean in the Director's position. Two of the most qualified staff advisors were appointed as Project Director's to help continue the program decentralization and rationalization of the increasing workload. One additional staff advisor was hired during the period.

The political situation in El Salvador deteriorated considerably during the report period, in several cases directly affecting the progress of the program and projects against original stated goals. Personal security of staff was given priority over project tasks where appropiate. In spite of this, the program achieved the most productive output of work in its young 4 year history in El Salvador, as demonstrated below in the Summary Chart of achievements vs. target indicators during the period.

SUMMARY OF OPG TARGET INDICATORS AND TECHNOSERVE'S ACTUAL PERFORMANCE

	OPG TARGET 4/1/79-12/31/79	TNS ACTUAL PERFORMANCE 4/1/79-12-31/79
Project Request Investigated	11	19
Projects and Activities Analyzed	10	22
Plans for Definite Projects and Activities	7	8
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Projects assisted by Technoserve have achieved benefits in the income, employment, investment, productivity, and other areas for sponsors groups receiving advisory services, which have surpassed expectations and created

much goodwill and confidence between low income sponsors and Technoserve personnel. A project by project review will serve to illustrate the magnitude and quality of these benefits and their impact on the target population, the Poor Majority in El Salvador.

II. INPUTS

A. TECHNOSERVE PERSONNEL AND ORGANIZATIONAL CAPACITY

Staffing Patterns.

As of December 31, 1979, the El Salvador Program Staff consisted of 12 technical professional and 5 administrative and clerical employees. This represents an increase of 1 professional employee from 12/31/78, and of 3 professionals from 12/31/77. Staff increases in the last two years have focused on strengthening elements of the program treating project planning and supervision, project quantitative analysis and project social extension and outreach. These new placements have complemented previously hired personnel specialized in technical aspects of agronomy, engineering and accounting and the overall program managers - Director and Associate. These net increases however, have been further complemented by 4 professional substitutions during the past 2 years, which represent a considerable upgrading of education and experience as well as increasing the dependence for program operations, in 2 instances, in Salvadorean Citizens who substituted positions held by two third country nationals.

Additionally, Technoserve adopted the policy of retaining the periodic consulting services of an animal nutrition specialist to improve the capability of full time advisors to carry out technical work related to several new and ongoing project operations. The benefits derived by use of specialized

consulting resources have been of such value that the program intends to continue using this policy whenever necessary.

Administrative and Management Changes and Significance

The most important step taken by Technoserve, El Salvador in the report period was in placing a Salvadorean, Ing. Francisco Lino Osegueda, in the Director's position, which had been held by a Chilean, Ing. Enrique Cristi, who resigned to accept a position with the United Nations. This placement in November anticipated by several months Technoserve's goal of transfering this post to a Salvadorean in order to further prepare for the turnover of the Technoserve Program to a Salvadorean Public Benefit Corporation to be formed (See INSTITUTIONAL COLLABORATION for details). Ing. Osegueda comes to the Director's chair at age 42, after already serving a distinguished career in administrative and agro-technical posts, among them the Undersecretary for Agriculture and Livestock (1969-1973) and the Director of the National Agricultural School (1965-1969). Ing. Osegueda also posseses other qualities - moral rectitude, dedication to helping economically disadvantaged people of his country, and an ability to deal effectively with a board spectrum of administrators, technicians, farmers and program donors - which, through less tangible than his other personal accomplishments, are no less important to his function as Director.

Technoserve, El Salvador in the report period also created the position of Project Director, and in November formerly conferred this title to two of its most capable project advisors, both with advanced graduated schooling in relevant areas, as well as years of appropiate field and administrative experience. These positions will directly supervise the growing number of pro-

ject activities analyzed and implemented, allowing the Director more time to concentrate on overall program planning, administration and control, and institutional relations.

Internal Management and Training Activities

Considering that it is a young (11 years old) and small (less than 100 employees worldwide) organization, Technoserve has been able to reach a relatively sophisticated operating level and its management and training activities can be considered to have achieved much of the systems maturity of older, and larger organizations. The firm has prepared its country program personnel in carrying out firm policy and project objectives/methodology via the use of operating manuals and training sessions. A Procedures Manual in use by Technoserve/El Salvador staff since 1975 was updated and presented as part of a 3 day conference held in December, 1979, in Costa Rica, in which seven of the program professionals participated. Project operating objetives and procedures were presented via the use of case studies based on the firm's unique experiences, small group working sessions (staffs from Nicaragua and Panama programs and U.S. home office were also participants), and didactic lectures with question and answer sessions. The conference materials will be repeated in February, 1980 to all El Salvador staff who, due to program operating requirements, were not able to attend.

These management and training activities have a multiplier effect: By upgrading professional abilities, project sponsors are able to receive a more comprehensive and efficient delivery of advisory assistance to implement and administer their projects. By revision of project analysis, installation and start-up assistance procedures, advisors are able to transfer -

learning to project sponsors via a variety of participatory methods, to increase the latter's ability to take over management of their enterprises after periods of advisory services.

Internal management activities have focused on a decentralization of authority and responsiblility for El Salvador Program operations from the U.S. head office to local managers. Project feasibility and other studies formerly prepared by U.S. technicians are now completely done in El Salvador. Program direction has been decentralized by letting the Director assume a flexible and independent posture in selection of projects, assignment of personnel to projects, determination of type and length of advisory services, technical institutional relations, and overall program goal setting consistent with assigned financial and personal resources.

Cost Effectiveness of Management and Advisory Operations

Technoserve/El Salvador does development work in an area (enterprises/institutions), and uses a method (integral study, installation, and start-up assistance services) which is relatively new and unique for a development institution. The unique nature of this development work affects the way that funding sources look at it. Generally, funds flow less easily to this newer development because no established track record of cost/effectiveness exists. One of the purposes of this evaluation is to form a basis for documenting cost/effectiveness of the Technoserve Program which will aid in future determination of more conclusive field obtained evidence.

Technoserve/El Salvador's program is 4-1/2 years old; its first projects here represent pioneer effort whose learning curve and costs are superior to what it would now cost to implement the same projects, simply because

the program has gained valuable experience from which to improve procedures and service delivery, hence efficiency. By revising procedures in light of cost and results experience, Technoserve now has a much clearer conception of what works more often and more efficiently over a period of time, thus it "knows" (certainties aren't possible in this work) more about what will be the result from a given investment of money and time. Since most of Technoserve/El Salvador's projects are still under advisory assistance, an accurate statement of cost-effectiveness is not yet possible. The following, however, can be stated provisionally within the framework of all that mentioned above:

(1) A smaller project of about $15,000 to $60,000 initial capitalization is much less costly to study, install and assist until local sponsors take over management, and can be replicated with a reasonably high degree of certainty, given a successful model and similar type group and environment. Projects of this size have significant impact on the small rural communities in which they are located. Most of the activity production is consumed locally, but this generates a good flow of secondary products being exported outside the community, thus generating an inflow of cash. Scale and technology are appropriate given knowledge and capacity of the local sponsor group to assume control. Advisory services last about 2 years on the average at a cost of $50,000 to $90,000 total.

An example of this kind of project would be the animal feed concentrate plants, whose present output and sale in the summer dry months feed daily several hundred cows and other cattle of each of 5 plants in operation. 1/

(2) A larger project of about $60,000 to $500,000 initial capitalization takes longer to study, install and advise through the point of turnover of management control to the sponsor group - 3 to 5 years. Since these sponsors are usually as low income and as lacking of viable alternatives as the smaller project groups, advisory assistance is more extensive and costs between $150,000 and $300,000 over the entire assistance cycle. These projects are not as replicable, being more complex and requiring a more specific set of environmental and personal criteria. Impact is considerably greater than the smaller projects, involving extensive export of product from the local zone to regional and national markets, thus preserving and generating jobs and income outside of as well as within the local zone, and supporting national and local consumption patterns.

An example of this kind of project would be the rice mill and marketing enter-

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1/ For additional benefits data, see individual project descriptions.

prise at ACACYPAC, whose present output and sales involves 33 to 50% of the rice acreage planted in the Nueva Concepción zone (total 1000 manzanas), and whose product contributes to the diet of over 75,000 people for an entire - year.[2/]

B. FUTURE PERSPECTIVES

The perfomance of the Technoserve/El Salvador Program is conditioned on many external variables which are completely uncontrollable by the organization. El Salvadorean government development priorities and political policies, infrastructure and market channels, local financial resources, relations between the El Salvador government with other government's and international institutional bodies, and natural and human engenered disastrors provide a partial listing. Profound social, economic and political changes are expected to occur in El Salvador during 1980 which may severly impair the functioning of the program. On the other hand, some of these changes, if carried out in an orderly manner, could provide the firm with opportunities to support desirable national and international government programs destined to improve the socio/economic well being of the poor majority. Such involvement would probably be concentrated in the agricultural sector and with those institutions directly involved in the sector. Is Technoserve/El Salvador prepared to assist in this area?

In another section of this evaluation report, the institutional collaboration of the program is discussed in detail. Such descriptive evidence leads to the conclusion that the program has achieved an established position in El Salvador by the very nature and degree of ongoing institutional contacts. The program is well known and accepted among significant national direct de-

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2/ See ACACYPAC Project Description

velopment institutions - BFA, IRA, FEDECACES, etc., and being well known and accepted is a critical measure of the organizations potential to expand work in its established areas of competence. Funding such expansion,however, is a critical component, and one which has limited to date, the possibilities that the program has for taking on much new work (which exists in abundance, as a brief review of potential projects activities in the subsequent section will indicate). The external environment and funding questions, however, do not preclude a consideration of whether the program, as actually structured, can, if fact, take on significant new work without producing internal administrative dislocations and or a reduction of performance per unit of advisor inputs.

Technoserve/El Salvador believes that the basic administrative organization of its operations is sound and tested. Program expansion to date has resulted in a new structuring of organizational hierarchy to permit an operational span of control within the personal capacity of each manager. Such a structure could be expanded in a similar manner as new work requirements and funding commitments arise.

As Technoserve's activities expand, the need for more specialized human resources will expand in order to allow for as much efficiency as possible within the uncertainties of development work. Some advisors could be assigned to work principally with groups at the initial exploratory, fact finding stages. Others might be more involved as the study and installation stages. Still others might concentrate on group training, evaluation of operations, and determination of impact and benefits. A further division could occur in the institutional representation and reporting areas. The team approach

to service provision to projects will continue to be used.

The program should also achieve a greather efficiency and productivity of its advisor corps by using technical assistants, i.e. persons without extensive or specialized education and experience who would serve in ancillary roles, such as data collection, tabulation, scheduling of meetings, obtention of legal documents, equipment quotes, graph and chart preparation, and considerable number of other relatively routine tasks, that must now be performed by the advisors. As of January, 1980, the first such assistant - the former TNS office messenger who has worked 4 years with the firm and who because of his personal qualification-was hired and is being trained in these supportive duties.

C. BUDGET

A quantification of total budget allocations to OPG supported activities during this reporting period can be found on the following page.

Technoserve
ASW 1/24/80

Technoserve/El Salvador
April-December, 1979-See Note

	Adjusted Total Costs	Charged to OPG	Covered by Technoserve
Personnel Costs			
Salaries, wages and benefits - TNS/E.S. Staff	172,353.19	43,845.78	128,507.41
Salaries, etc. - Home Office staff assisting TNS/E.S. staff in program activities	28,208.23	8,612.69	19,595.54
Outside Services	7,433.38	--	7,433.38
Outside Services - engaged by Home Office	3,139.42	--	3,139.42
Travel and Allowance Costs			
International Travel - Relocations of TNS/E.S. Staff and trips to Home Office	11,409.32	6,223.93	5,185.39
International Travel - Home Office staff traveling to, in and from El Salvador	6,889.89	2,013.73	4,876.16
In-Country travel - El Salvador	32,427.73	8,929.15	23,498.58
In-Country travel - Travel in U.S. on behalf of TNS/E.S.	1,478.83	2,918.21	<1,439.38>***
Office Costs			
Office Operations - TNS/E.S. Office	23,130.49	5,277.21	17,853.28
Office Operations - Home Office Direct and assignable indirect costs allocated to TNS/E.S.	8,910.46	4,512.63	4,397.83
Furniture and Equipment - TNS/E.S. Office	1,681.14	--	1,681.14
Furniture and Equipment - Home Office Direct and assignable indirect costs allocates to TNS/E.S.	--	--	--
Other Program Costs			
Other Program Costs	4,347.26	--	4,347.26
Supporting Services Costs			
Indirect Costs (24% X salaries, wages and benefits)	48,134.74*	11,000.00**	37,134.74
TOTAL	349,544.08	93,333.33	256,210.75

NOTE: December costs estimated. Actual costs may be $2-4,000 higher, Difference will not be charged to OPG.
* Provisional rate. $28,754.07 relates to April-August and $19,380.67 to Sept.- Dec.
** OPG charged with $11,000.00 of $19,380.67 Sept.-Dec. Indirect costs.
*** In May & June, costs previously charged to the MIPLAN grant were credited to that grant and debited to the OPG.

III. OUTPUTS

A. ENUMERATION OF OUTPUT INDICATORS

During the April-December, 1979 reporting period, Technoserve, Inc. completed various investigations, analyses, and plans as part of its procedural work in providing technical assistance services to project sponsor groups. All this work presents documentary evidence on file at Technoserve. The following chart presents the number of output indicators by category projected for his reporting period in the OPG evaluation plan, and the actual results achieved:

	OPG Target 4/1/79-12/31/79	TNS Actual Performance 4/1/79-12/31/79
Project Requests Investigated	11	19
Project and Activities Analyzed	10	22
Plans for Definite Projects and Activities.	7	8

As can be observed, all of the OPG targets in each output indicator category were exceeded.

B. DESCRIPTION OF OUTPUT INDICATORS

Project Requests Investigated:

This indicator represents the number of projects presented to Technoserve which were investigated during the reporting period. Each document includes a brief summary of the projects' economic and social viability, the organization, initiative, economic level and participation fo the sponsor group, and Technoserve's ability to supply appropriate technical and administrative asistance to the sponsor group.

The synopsis of projects investigated as presented in this section shows that Technoserve must visit a number of potential sponsor groups to determine a few whose environmental conditions, group interest and other variables permit they and Technoserve to commence the procedural process used to implement project ideas. As will be noted in several instances, the sheer limitation of advisor resources on the El Salvador staff prevented the program from further developing several worthy ideas with relatively appropriate groups and environmental situations.

(1) Cattle Development - Asociación Cooperativa de Producción Agropecuaria de Corinto de R.L. - Morazán.

Although this group initially requested Technoserve to help the Cooperative install an animal feed concentrate enterprise, and despite containing many positive project elements, this possibility was discarded for 1979; it became aparent that the Board of Directors was in fact unalterably divided on the desireability of the project, after conversing several times with Technoserve advisors and understanding the degree of cooperative responsibilities in project execution. This group will likely be contacted again in 1980 to determine if a consensus has been reached.

(2) Cattle Development - Asociación Cooperativa de Ahorro, Crédito y Servicios Agropecuarios de R.L. Joateca, Morazán.

A cattle fattening project enterprise, this group was brought to Technoserve's attention by U.S.A.I.D.; after initial conversation and analysis, both the Cooperative and Technoserve mutually agreed on this project idea, which has been carried forward to advances stages of installation by the end

of this evaluation reporting period.

(3) Milk Cattle Development - Asociación Cooperativa de Producción Agropecuaria de San Antonio - Suchitoto, Cuscatlán.

A cow grazing, concentrate feeding and milk marketing project whose group was brought to Technoserve's attention by representatives of the Agricultural Development Bank (BFA), this project was discarded after initial conversation with the cooperative demostrated a lack of interest by the group in committing resources to this idea, although ready to accept any free Technoserve assistance.

(4) Cattle and Poultry Development - Cooperativa Agrícola Cantón Lourdes - Colón, La Libertad.

Another group brought to Technoserve's attention by B.F.A.; the Cooperative membership was unable to define any particular project idea, basically because it lacked any communal land to develop one. The group will be revisited in 1980 to determine if land has been obtained and if any concrete project ideas have emerged.

(5) Basic Grain Production and Milling - Asociación Cooperativa de Ahorro y Crédito Omar - Guaymango, Ahuachapán.

Also referred by B.F.A., this group was discarded after it became evident that a combination of inaccesibility, lack of other infraestructure, and intra-group animosities and lack of interest in collaborating on this project, would render futile the provision of Technoserve advisory services.

(6) Basic Grain Production and Milling - Asociación Cooperativa de Producción Agrícola de Santa Bárbara de R.L. - El Caracol, Cabañas.

Additionally referred by B.F.A., this group had to be discarded after

discovering that a one hour walk through the hills of Cabañas was required to reach the Cooperative site. This lack of rudimentary access is a serious impediment for the development of any Project activity.

(7) Basic Grain Production and Milling - Asociación Cooperativa de Producción Agropecuaria Los Pajales de R.L. - Zaragoza, La Libertad.

Another group referred by B.F.A., this group lacked the most basic participation and interest necessary to support a project, apart from obvious group conflicts, lack of initiative in the Cooperative, and infraestructural difficulties.

(8) Industrial Oil Seed Production - Asociación Cooperativa de Producción Agropecuaria de Garita Palmera, La Hachadura, Ahuachapán.

This group, also referred by B.F.A., has been actively looking for ways to increase their peanut and sesame product income through expansion of production and processing. This project was deferred because of the need to investigate more thoroughly oil seed processing technology, which in 1979 was impossible to do given advisor resources and workloads in other projects. This idea will be reviewed carefully in 1980, along with other options available, given that it presents many positive project elements.

(9) Cattle Development, Wood Products Utilization, Basic Grains Production, Consumer Outlets - Asociación Cooperativa de Producción Agropecuaria Los Milagros - Coatepeque, Santa Ana.

Another group referred by B.F.A., this large (over 1000 members) cooperative has diverse activities requiring general organizarional and developmental assistance. The cooperative decided in 1979 to consolidate its internal affairs without resorting to outside assistance, technical or financial.

However, given this consolidation, the group, quite interested in Technoserve's services, could well be a recipient of its advisory assistance for 1980.

(10) Cattle Development - Asociación Cooperativa de Producción Agropecuaria Limeña de R.L. - Santa Rosa de Lima, La Unión.

This group requested Technoserve's assistance to install an animal feed concentrate plant after receiving favorable comments from 2 other cooperative feed mills set up through Technoserve advisory services. This project subsequently passed through the various implementation steps achieving operational status at the beginning of December, 1979.

(11) Feed Concentrate Service Company - Cooperativas ACOPADEC(Cacaopera), ACASJMRL (San Juan de Merino), ACOOPARSANGE (San Gerardo) y COPIGAC (Sensuntepeque).

An idea suggested by Technoserve management in order to rationalize and economize the provision of common service needs of several feed concentrate plants installed through Technoserve advisory services, it was deferred after completing a Prefeasibility Study (see Projects Analyzed). The idea will be reinvestigated in 1980 among other options.

(12) Sisal Processing - Asociación Cooperativa de Ahorro y Crédito La Providencia de R.L. - Osicala, Morazán.

A cooperative brought to Technoserve's attention by the Gov't cooperative agency, INSAFOCCOP; this group has ample experience with sisal cultivation and enthusiasm to implement a project in this area. Technoserve deferred consideration of this project until 1980 in order to provide service to other groups which had been already preselected when this group became known.

(13) Cattle Development - Asociación Cooperativa de Ganaderos de La Unión de R.L. - La Unión.

Brought to Technoserve's attention by the Agricultural Ministry's Cattle Division, this project was discarded after it became apparent that the group had little interest in developing a fishmeal feed for cattle, or any other idea.

(14) Cattle Development - Asociación Cooperativa de Producción Agropecuaria "La Virtud" - San Juan Opico, La Libertad.

This group referred by B.F.A.,was referred to 1980, after it was determined that many of the cooperative Board and other committee positions were unfilled, and a general desorganization existed. As the zone is abundant in raw material necessary for cattle fattening, this group will be revisited in 1980 to determine if they have achieved the organization and consensus of interest necessary to develop a project.

(15) Poultry Development - Asociación Cooperativa de Ahorro, Crédito, Consumo y Producción de la Iglesia Evangélica de El Salvador, Misión Centroamericana. - San Salvador.

This group requested Technoserve assistance to implement a poultry production and distribution enterprise to benefit it's large and growing membership. Technoserve has completed on initial analysis which does not indicate a viable oportunity, but continues to work with the group to define an alternative, as the size of the group and internal capabilities show potential for being able to absorb a large project activity.

(16) Sugar Cane Syrup Production - Asociación Cooperativa Cañera del Valle de La Laguna de R.L. - San Vicente.

This well organized group requested Technoserve's assistance to help increase their income from sugar cane grown on their individual parcels. This project was deferred when disagreements between the farmers and the Jiboa Sugar Refinery over price and transport costs for cane became the groups priority to the exclusion of the project idea first suggested.

(17) Cattle Development - Asociación Cooperativa de Producción Agropecuaria La Paz de R.L. - Piedra Parada, Morazán.

This group requested Technoserve's assistance to install a dry lot operation to fatten cattle with by products found within the area, such as corn leaves and stems, beans dried plants, etc. as basic feed ingredients. This project has been carried forward through various stages of installation which will be presented in the corresponding sections. The group was referred by B.F.A.

(18) Cattle Development - Asociación Cooperativa del Valle de la Esperanza Nueva Guadalupe, San Miguel.

This group was also referred by B.F.A. and requested assistance to install a fattening project enterprise. The cooperative is located in a town with a very important auction market (tiangue) in the country. The group and Technoserve agreed on the idea which has been carried forward.

(19) Cattle Development - Asociación Cooperativa de Ahorro, Crédito, Consumo y Producción Comunal de San Alejo de R.L. - San Alejo, La Unión.

Assistance was requested to install an animal feed concentrate plant. The group works with FEDECACES in saving and loan operations and in insumos for agriculture production.The idea of the project has been carried forward and the advance of installation is presented in other sections.

Projects and Activities Analyzed

This indicator represents the number of individual socio-economic analyses completed during the reporting period. These may include analyses of markets, raw material supply, fixed assets, financial, economic and legal evaluations, pilot tests, and complete prefeasibility studies. A brief description of each written piece of work in this category follows:

Economic Analyses

(1) Demand Analysis Agricultural Input Products - COPIGAC, Sensuntepeque. Based on a survey of half the 127 members, a sufficient demand was established for several agrochemical, veterinary and other farm products, while investment and earning calculations justified using a B.F.A., credit in order to set up the retail outlet for agricultural input products in the center of Sensuntepeque.

(2) Economic Alternatives for Rice Mill - ACACYPAC, Nueva Concepción. After analysis of several operational strategies to determine which offered the highest potential for recovering operating losses in 1976/77, [illegible] and payback of short term working capital and long term fixed asset credits, in that order of priority, Technoserve recommended to ACACYPAC and FEDECACES that the Cooperative buy basic grains in the zone - mostly rice - and sell milled rice and other grains to IRA (Supply Regulation Institute), additionally generating income through drying and transport services, and the milling of paddy rice bought and stored by IRA at it's San José Carao facility.

(3) Prefeasibility Study for Cattle Feed Lot Enterprises, ACOPAVE, (Nueva Guadalupe), ACOPALPAZ, Piedra Parada and CACPA, Joateca.

The objective of this report is to describe the common elements and

variables to consider in the implementation of a confined feed lot for heifers, thus serving as a appropiate base for later individual Project Feasibility Studies of feed lots for three cooperatives. Chapters include: Essence of the business; installation and process (design, equipment, purchase, sale, transport, lot management, feeding, feed preparation, controls, etc.); costs; institutional help; socio-economic impact and Technoserve assistance. An introductory chapter on the cattle situation and cattle programs in El Salvador is included.

(4) Prefeasibility Study, Animal Feed Concentrate Service Center, ACOPADEC, Cacaopera; COPIGAC, Sensuntepeque, ACOOPARSANGE, San Gerardo, ACASJMRL, San Juan de Merino.

Although it was reasoned that these four animal feed concentrate projects would realize economic benefits by rationalizing the provision of common service needs (raw materials, parts and maintenance, transport, bookkeeping, marketing, etc.), the analysis concluded that (1) more members would be needed to justify initial investment costs in working capital needs and building space; (2) the supposed common service needs were not as great nor as easy to coordinate as expected; (3) Logistical and infraestructural problems in servicing the cooperatives would have to be overcome.

(5) Revision of Savings and Credit Activity Evaluation, ACACYPAC, Nueva Concepción.

Based on an earlier analysis conducted, this report evaluated strategies used and results obtained agains the goals and methods set out in the first report to determine if the initial negative assessment of his activity's future had changed. The report concluded once again that the activity had little future and should be reduced basically to credit collection of -

outstanding and overdue loans, in that the salient indicators of number of credit recipients, credit competition from other institutions, competitor prices for Ag. inputs sold within the activity, Ag. input sales, administrative structure, net activity income, and debt/equity relationship, either showed declining indices or a lack of reforms as recommended in the first report. This recommendation could change if a viable alternative was presented.

(6) Prefeasibility Study, Animal Feed Concentrate Enterprise, ACOPALIM, Santa Rosa de Lima.

The report presents the first exposition known of a comparison between the nutritional values provided by and cost of equivalent rations of traditionally used cottonseed meal and ACOPALIM Concentrate -prepared by Technoserve with the assistance of its then consultant in animal nutrition, Ing. F. Lino Osegueda- as cattle feed supplements to pasture grass or silage during the summer dry season. The scientifically measured analysis concludes that the concentrate ration with silage provides a more balanced nutritional intake to the cattle species examined while lowering farmer feed cost from 9 to 11 centavos less per animal per day. Using dried pasture grass also provided more nutritional balance than cottonseed meal at feed saving of 1 to 3 centavos per animal daily.

(8) Economic Evaluation - Three Prefeasibility/Feasibility Studies Submitted by the Ministry of Planning.

At MIPLAN's request, Technoserve evaluated the potential for implementing 3 project ideas: Industrialization of cassava, chili and papaya/papain. In response, Technoserve explained the need to have qualified group available to sponsor such projects (the studies did not focus on groups, only the ideas), adding that, with an appropriate update of studies and phasing, the

ideas appeared to have merit.

(9) Economic Analysis - Cattle Fattening Demonstration, ACOPADEC, Cacaopera.

Providing results of a demostration fattening of 20 cattle during approximately 75 days of confinement, with nutritional technical assistance provided by Dr. Marco Cabezas of INCAP, Guatemala, results showed an average weight gain per animal per day of 2 lbs., and a net income to the Cooperative of 5.3% upon sale of the animals. This demostration proved to be a useful example in the decision taken to install expanded feed lots in the ACOPAVE, ACOPALPAZ and CACPA projects.

Financial/Accounting/Legal Analyses

(10) Individual Project Audits of ACOPAVE, Nueva Guadalupe; CACPA, Joateca; ACOPALPAZ, Piedra Parada; ACOPALIM, Santa Rosa de Lima; ACACCPCSA, San Alejo; and Bolivar, Bolivar.

A new procedure begun to determine the financial/legal/administrative situation of the organization of a potential project sponsor group prior to serious commitment of Technoserve advisory time; the six audits completed also include recommendations of action steps to improve the areas analyzed which conveniently serve as evaluation checks once full time assistance is commenced. An analysis of all accounts, legal and administrative policies compared with Gov't reporting requirements, financial policies, personnel norms, and institutional relations are the specific areas covered in these audits.

(11) Analysis Cost/Price of Feed Concentrate, ACOOPARSANGE, San Gerardo, ACOPADEC, Cacaopera, ACASJMRL, San Juan de Merino.

Given increases in the cost of raw material ingredients used in production of feed concentrate, an analysis of all operational costs was completed to determine new pricing standards for the next dry season. These analyses helped in the preparation of annual business plans as well as in formulation of appropriate strategies for sales promotion of the concentrate; both these analyses serve as training tools for cooperative directive bodies and employees.

(12) Break-Even Analysis Concentrate Activity - ACASJMRL, San Juan de Merino.

Because some cooperative members wished to purchase feed concentrate at a price lower than that established upon opening the plant, Technoserve evaluated cost/price relationships to determine sales volume levels necessary to offset the lower price. The results showed that, depending upon sales mix and sales distribution points, and additional 125 to 190 hundredweights of feed concentrate per month would have to be sold to reach break -even equilibrium under the new proposed prices. The cooperative decided to retain the old price in absence of resources to promote the additional concentrate sales.

(13) Documentation, Transfer of ACACYPAC General Manager Position, ACACYPAC, Nueva Concepción.

Upon turning over the Technoserve held manager's post to the incoming manager in representation of FEDECACES, a complete enumeration of all asset, liability and capital accounts had to be prepared, detailed to the individual user or recipient level, to avoid posterior legal and financial complications.

Management Analyses

(14) Analysis Manager Performance, ACACCPCSA, San Alejo.

In order to provide the cooperative Board of Directors with impartial

information concerning the use of funds and products under the authority of its hired manager, Technoserve reviewed all the cooperative books and documents, in the process discovering that merchandise worth ₡524.00 was not accounted for. This analysis in part allowed the Board to decide to terminate the services of the manager.

(15) Maintenance Plan for Equipment, ACOOPARSANGE, San Gerardo; ACOPADEC, Cacaopera.

These detailed plans include maintenance schedules and operating instructives for all machinery and equipment installed at the feed concentrate plants, including suggestions for making simple repairs and adjustments on site in case of operating difficulties. These plans constitute one of the various instruments used by Technoserve in orienting and training cooperative personnel.

(16) Analysis Productivity of an Maintenance for Rice Mill - ACACYPAC, Nueva Concepción.

Completed in order to determine an appropriate milling and delivery schedule of rice to IRA to prepare for negotiating a sales contract with that institution, the report also contains observations on maintenance, protection and control of the mill to enable a smooth production flow during the period of delivery to IRA.

Legal Evaluations

(17) First Draft, Alternative Legal Forms for Proposed National Organization to Assume Operation of Technoserve, El Salvador.

Legal advisors for Technoserve, El Salvador prepared studies of four

possible legal forms: Public Benefit Corporation; Foundation; Mixed Capital Society; and Trust, examining legal doctrine, legislation relating to, application to Technoserve, and advantages and disadventages of each form. From these studies, the Promotion Committee of Salvadorean professionals charged with the responsibility of facilitating the program transfer, Pre-selected the Public Benefit and Foundation forms as being most applicable to the Technoserve operation.

(18) Plan to Turnover Legal/Administrative Authority from Technoserve, Inc. to a Public Benefit Cooperation.

Completed to allow the Promotion Committee the opportunity to examine all of the parameters involved in transferring operating authority from Technoserve/El Salvador to the later selected Public Benefit Corporation option, the report includes chapters related to legal aspects for Technoserve, Inc. and the new entity as well as administrative and financial considerations. A detailed calendar of activities is annexed as part of the report.

(19) Draft Statutes of the Successor Public Benefit Corporation to Succeed Technoserve, El Salvador.

Prior to filing organization papers with the appropriate El Salvador Ministry (Interior) to allow for the incorporation of the Public Benefit Corporation, the statutes of same must be formulated. To facilitate this process, Technoserve legal and administrative personnel completed a statutes draft for review and comment by the Promotion Committee and their legal advisors. The statutes include clauses related to objectives, methods, patrimony, government, and government attributions of the Public Benefit Corporation and other related material.

Social Analyses

(20) Business History of the San Gerardo Cooperative Feed Mill-ACOPASANGE, San Gerardo.

Written as part of a comprehensive Case Study of rural enterprise development achieved through Technoserve advisory assistance, the business history begins with descriptions of the local people and environment, covers the early history of the cooperative, then examines in detail the process by which the cooperative feed mill was developed and initiated, and finishes with an analysis of operations since start-up and some issues to address within the future perspectives of the feed mill.

(21) In Depth Oral Interviews - ACOOPARSANGE, San Gerardo.

Another major section of the Case Study being prepared, this section deals with extensive taped interviews held with a number of residents in San Gerardo, and attempts to portray their lives and living situations: Discussions of family, work, social activities, and changes that society is bringing upon them, including the changes brought about by the installation of the feed concentrate plant at the cooperative.

Training Analysis

(22) Presentation of Technoserve Procedures to MIPLAN

At the invitation of MIPLAN Projects Division, Technoserve gave a 4 part presentation of its Project Development Procedures to all division personnel in order to better acquaint them with Technoserve's work. Flip charts were used in covering the nine basic stages of Technoserve assistance from Identification through group training and withdrawal of advisory services, and the procedures were traced using the ACOOPARSANGE feed concentrate project as an example.

Plans for Definite Projects and Activities

This indicator represents the number of plans developed for the implementation and/or operation of a project or activity. Project Studies, Business Plans, Marketing Plans and Work Plans are examples of such plans. A brief summary of each document completed follows:

(1) Project Study, Corrales, S.A. , Nueva Concepción.

This project, a confined feed lot for fattening cattle fed a ration based principally on sugar cane, was projected to show a 2.0% net loss in year one, and net projected gains 5.5 to 6.3% in years 2 and 3. The project contemplated an initial fixed and working capital investment of almost ¢400,000 in order to fatten 1000 head by the second year of operations. This project would have benefited the small/medium farmers of the zone by (a) increasing net income to sugar cane cultivators whose cane transport cost to the nearest sugar refinery made their investment less economical; and (b) permit the cattleman member to sell his animals locally and allow him to reap the society income benefits of fattening and selling these cattle during the higher price dry season. Unfortunetly, this project was terminated due to disorganization of the membership and lack of equity commitment to the project.

(2) Project Study, ACACCPCSA, San Alejo.

This animal feed concentrate production/sale and agricultural inputs resale activities was projected to achieve breakeven profitability in years one of the project, with net incomes of 15 to 23% projected in subsequent years. Initial investment is about ¢70,000 colones and production of feed concentrate will top 3000 hundredweights the first year of operations. Principal direct socio/economic benefits of the project include: (a) providing a

local raw material purchaser (the plant) for select member and non-member crops and by-products; (b) Providing a superior quality animal feed to traditional nutritionally unbalanced rations increasing milk output and, at a slightly lower cost per unit; and (b) the organization of an on-going productive operation at a cooperative that recently had been very inactive.

(3) Project Study, ACOPAVE, Nueva Guadalupe

A confined feed lot enterprise for fattening cattle based on a ration that allows the use of dried, milled coffee pulp, a locally abundant raw material now thrown away. The net income projections estimate a reasonable return of 4.4% by year 3 derived from the fattening of a maximum 300 head per cycle, this being the amount calculated to be within the cooperative's capacity to later manage. Initial investment is ₡96,500. This project will benefit over 200 cooperative members, through project net income distribution as well as providing a local source for the sale of their coop. raw materials and unfattened animals. Project implementation will occur once the administrative reorganizarion detailed in the following plan is complete.

(4) Administrative Work Plan, ACOPAVE, Nueva Guadalupe.

In carrying out the preliminary analysis steps for the feedlot project, several important administrative abnormalities were detected, which would have directly affected the feedlot performance had they gone unremedied. Therefore, the cooperative Board agreed with Technoserve to defer project implementation until these abnormalities were corrected. They are presented in the Work Plan as a series of objectives to achieve by carrying out a sequential list of activities, and include: (a) accounting system reorganization and financial statement adjustment; (b) formulation of credit lending

and collection policies and practices; (c) formulation of a rational use and maintenance policy for the cooperative tractor; and (d) sale of the cooperative truck.

(5) Project Study, ACOPALIM, Santa Rosa de Lima

An animal feed concentrate project which aims to penetrate one of the most substantial cattle areas in El Salvador, net income projections show 10 to 12 % gains in the first 3 full years of the activity, based on investment of about ₡80,000 and first year sales projected at over 12,000 hundredweights Benefits of the project are similar to those explained in the San Alejo feed mill, but are expected to be greater.

(6) Project Study, ACOPALPAZ, Piedra Parada

A cattle fattening project which like ACOPAVE will use locally available and unused dried, milled coffee pulp as a basic ingredient in the feed ration, projected net income runs from 2% to 12% during the initial years of activity based on a fattening schedule of 100 to 200 animals per cycle (2 per year) and a low initial investment of about ₡69,000, simplifying the operation as much as possible for this very underveloped cooperative group, to allow them to later take over an appropriately scaled operation. Benefits are similar to the ACOPAVE project.

(7) Project Study, CACPA, Joateca

The third feedlot fattening projection development, with an initial investment of ₡111,000., the Study projects a breakeven operation in year one, climbing to about an 8% net gain in year three. Two to three hundred cattle per 3 month cycle will be fattened. Social benefits are similar to those of the ACOPAVE and ACOPALPAZ projects.

(8) Business Plan, ACACYPAC, Nueva Concepción.

Following the decision taken, from the options available, to continue to sell rice and other grains to I.R.A., Technoserve prepared a Business Plan to cover the purchasing, processing and commercialization areas for the 1979-80 crop year. A net income of ₡110,000 colones based on sales of almost ₡1.6 million was projected. Over 47,000 hundredweights of rice, corn, beans and sorghum were projected for purchase, processing and sale.

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IV. PURPOSE

A. ENUMERATION OF PURPOSE LEVEL INDICATORS

Technoserve's project purpose is to facilitate the development of self-help enterprises in El Salvador and foster Salvadorean self-help enterprise development capabilities. In accordance with the OPG plan agreement, this purpose has been evaluated by the number of plans implemented. The indicators presented below present activities implemented, some of which are represented by documents in Technoserve's files and others which can be inspected visually in the field. The following chart presents the number of purpose level indicators which were projected for this reporting period on the OPG evaluation plan and those that were actually echieved:

	OPG TARGET 4/1/79 - 12/31/79	TNS. ACTUAL PERFORMANCE 4/1/79 - 12/31/79
Plans Implemented	4	6

Although it appears that the target has been exceeded only slightly, a review of several of the indicators summarized below will show that they have been repeated in several cases for more than one project; thus the in-

dicator understates the work accomplished.

B. DESCRIPTION OF PURPOSE LEVEL INDICATORS

This indicator represents the actual number of activities initiated or completed during the period. These include the start up of a new project or a new activity within an existing one. Examples could be new products introduced, machinery and equipment purchased/installed and on-line, new credit lines established/utilized. Also included within this indicator are contractual agreements enacted (eg. project working agreements, loan agreements, incorporation papers, by-laws, purchase contracts, licences); business systems installed/implemented (e.g. accounting systems, business planning systems, management information systems, inventory control systems, credit procedures, budget systems, production processes and Technoserve phase-out plans from projects).

A brief description of each plan implemented follows:

(1) Financial Contracts (ACACYPAC, COPIGAC, ACACCPCSA) with Banco de Fomento Agropecuario and FEDECACES.

Credit lines totaling slightly over ₡1.0 million colones were obtained for fixed and working capital purposes. Technoserve advised cooperative representatives in filling out the application, obtention of guarantee documents, in conversations with the institution officials, and in obtention of other legal documents necessary to sign the loan contract.

(2) Statute Reform (CACPA, ACACCPCSA).

Prior to the request for financing for these two cooperatives the statutes of each had to be expanded to allow for agricultural production acti-

vities. Technoserve assisted these groups in achieving the needed reforms by advising on the planning and execution of the required General Assembly of members (in collaboration with INSAFOCOOP and FEDECACES), and all subsequent legal and administrative steps leading to INSAFOCOOP and FEDECACES acceptance of the new statutes and their promulgation.

(3) Installation of the ACOPALIM Feed Concentrate Plant.

Technoserve assisted in the contracting, delivery and installation of machinery and equipment, in ordering raw materials, hiring of employees, and preparation of other related areas prior to the commencement of operations in December 1979. A more thorough account of this can be found in the ACOPALIM project discussion.

(4) Installation of the COPIGAC Agricultural Inputs Activity.

Technoserve assisted in pre-project surveys, site location, product selection, and preparation of the financial package for this activity prior to its start-up in September, 1979. A fuller account can be found in the COPIGAC project discussion.

(5) Contractual Agreements, (ACACYPAC, ACOOPARSANGE, CACPA, ACOPALPAZ, ACOPAVE).

Technoserve renewed Service Contracts with 2 cooperatives and signed new contract agreements with 3 other cooperatives during the reporting period. These contracts carry provisions tailored to the services to be provided to each group, service payments to partially cover the cost of Technoserve assistance, restrictions applicable to the group and Technoserve, administrative policies relevant to the project and the contract duration.

(6) Final Evaluation Report, COPIGAC, Sensuntepeque.

Prior to termination of regular advisory services with the cooperative, Technoserve evaluated the services it had rendered against progress achieved to enable a self-run operation. Included in the report is a list of recommendations in the organization, administration, production and sale functions, principally dedicated to convince the cooperative Board of the need to provide continous participation and training to its organized bodies and employees, and to anticipate future changes in cooperative activities; based upon sound analysis of the factors of production.

V. DESCRIPTION OF ON-GOING PROJECTS

1. ACACYPAC (Cooperative with Rice Milling, Savings and Loan Activities in Nueva Concepción).

A. Summary of Activity

The main objective of this project continues to be to insure cooperative rice producers a stable and profitable price for their paddy rice as well as improve their income yield from processed whole rice and by-products through use of cooperative drying, milling and marketing services.

The increasing maturity of this enterprise is reflected in the efficient procurement, production and marketing process established for ongoing operations, in the caliber of personnel performance in carrying out these and other functions, and in the achievement of an on-going, albeit no completely satisfactory, institutional relationship with key public and private organizations. The cooperative now manages its affairs in the rice mill activity with infrequent advisory inputs from Technoserve staff. Compare the 1689 direct advisory hours accrued to this project from April 1 to December 31, 1979 (only 225 hours in the last quarter), with the 4887 and 4522 direct advisor hours accrued for the comparable periods in 1978 and 1977 respectively. Operating losses of the 1977 and 1978 calendar years have been reversed and, except for events directly related to the political changes in El Salvador, a substantial year end gain instead of an estimated slightly above breakeven profitability would have occurred (see External Factors).

After 4 years of direct advisory assistance, Technoserve believes that ACACYPAC is ready to attempt self-management of it's milling activity in 1980. With profound political, economic, and social changes set to sweep the entire

nation, no one can predict the extent or duration which non-controllable external factors might affect activity performance in 1980. Technoserve recognizes these variables, but also knows that any business, with or without technical assistance, must confront external changes. Often unforeseen and ocurring continually, any business must adapt to these changes, where necessary, in order to survive and prosper. Although Technoserve will be available to respond to urgent situations requiring specialized help, it believes that the long-term success of the ACACYPAC mill will best be served if the cooperative is given the opportunity to exercize its own affairs, independent of on-going technical assistance. It now has the organization, the personnel, the methods and the institutional relationships to do so. Undoubtedly some mistakes will be made, but they will serve as indispensible experiences.

B. Rice Milling Activity

During April-May 1979 ACACYPAC sold and milled almost 9500 hundredweights of paddy rice to IRA, while selling 666 hundredweights of milled rice to the open market during the reporting period through December. Another 1500 hundredweights of broken rice, bran, and bran/mill mix were also sold in the April-December period. Preliminary gross revenues from January-December for the milling activity totaled ₡ 687,371, gross margin was ₡ 139,569 (20.3%) and net income of ₡ 9,326, about 1.5%.

The 1978-79 crop cycle through August earned ₡ 54,541, a great success over earlier years.

The June-December period is principally concerned with the cultivation-harvesting cycle of rice, as these figures demonstrate. Based upon a ₡ 900,000 purchase credit obtained with TNS assistance through FEDECACES from COLAC and Central American Development Bank funds, ACACYPAC purchased 26,285 hundredweights of paddy rice worth ₡ 719,716 from September to November, 1979. Some

270 hundredweights of this purchase have since been milled for sale to Nueva Concepción residents.

The Business Plan elaborated for the 1979-80 marketing cycle based upon a previously completed analyses of economic alternatives programmed a renewal of the IRA contract to sell 85% of the paddy rice purchased, milled and transported by ACACYPAC, with 15% destined for milling and sale from the ACACYPAC local store and to San Salvador supermarkets. Sales of ₡480,000 were expected by the end of December; due to external factors, however, these sales were not realized, thereby affecting the activity's net income for the year.

C. Savings and Loan Activity

Technoserve's contractually agreed to services (except for overall accounting assistance), was circumscribed to twice evaluate this activity to determine it's tendencies and make recommendations as necessary. Preliminary results from the January to December period, showed gross revenues and other income of ₡ 132,485 and net losses of ₡ 23,482 contributing to a consolidated activity calendar year loss for ACACYPAC of ₡14,156. The Savings and Loan activity is confronted by an ever increasing competition from agencies of Banco de Fomento Agropecuario and Cajas de Crédito located in Nueva Concepción. This situation and internal problems related to the recuperation of overdue debt led to the two evaluations. The first, completed in March, 1979, analyzed the situation of the activity through December, 1978, and presented recommendations to reform the activity.

The second evaluation, covering the accounting period through June 30, 1979, concluded that almost all the first stage goals set out in the recommendations section of the first evaluation to improve this activity had not been achieved; The loan portfolio had been reduced instead of increased (needed in order to achieve breakeven profitability); the concentration of

52% of the total loan portfolio in just 3 members (of the 386 credits outstanding), indicated that demand for credit was low given the effective price and service competition of B.F.A., and Cajas de Crédito in the Nueva Concepción zone; the activity balance sheet showed over ₡155,500 in debt and corresponding interest due FEDECACES which has no offsetting balance in Accounts Receivable from members; that sales prices of agricultural inputs were mostly inferior to local competition and insufficiently profitable for the cooperative; and, that administrative expenses were high relative to activity demand.

Technoserve has presented both evaluations to ACACYPAC and to FEDECACES, and has recommended that S & L activity be reduced to a collection one if a more efficient strategy cannot be devised to increase the portfolio to at least breakeven profitability. Additionally, Technoserve has recommended that FEDECACES cancel or condone certain ACACYPAC debts due FEDECACES against the equity or investment accounts that ACACYPAC has deposited in FEDECACES or against federation reserves. The firm has also recommended that ACACYPAC increase its agricultural input sales margins, and reduce certain admininistrative expenses, such as audit fees, Cuna Mutual insurance payments, and legal fees which are obligations placed on ACACYPAC by FEDECACES principally so that ACACYPAC be eligible for FEDECACES credits.

D. Training and Transfer of Capability

A new manager with a highly desirable set of educational and practical experience qualifications was hired through FEDECACES collaboration to replace the FEDECACES manager, and received training in rice purchases and analysis of samples, and in storage and preservation techniques for paddy rice, all from the Technoserve advisor. After a great deal of effort, Technoserve advisors, in coordination with audit personnel from FEDECACES, helped the accounting department achieve an efficient operation to provide accurate data

for decision-making. Both the chief accountant and assistant are fully trained and operating independently. Advisors worked with ACACYPAC employees in periodic revisions and minor repairs of machinery and indicated the repairs where specialists should be brought in. A Manual of Rice Mill Maintenance was prepared and presented to ACACYPAC management. Advisors also collaborated in the organization of a training course in grain analysis with help from analytical personnel from IRA. The chief Technoserve advisor has reviewed with the new manager an appropriate format for elaborating the 1980-81 Business Plan, and the latter is currently at work on this task. In general, personnel performance has been very good to excellent.

E. Benefits and Beneficiaries

By collaborating with I.R.A. in selling rice to be sold by I.R.A. at preferential prices through its retail outlets (by decree, these prices are in effect nationally since November, 1979), ACACYPAC has provided a basic foodstuff which is distributed through IRA's superior distribution facilities to masses of lower income Salvadoreans. At a consumption of 2.1 Lbs.[1/] rice per week for an average family of 5.5 persons (1.1 hundredweights per year), ACACYPAC rice sold to IRA in 1978-79 has contributed to the diet of 8,727 families for a year, or 48,000 Salvadoreans. With a sale to IRA in 1979-80 of up to 15,500 hundredweights milled rice,[2/] this amount will contribute to feeding 14,090 families, or 77,500 Salvadoreans for a full year.

The benefit to the individual rice producer in the Nueva Concepción area can also be estimated albeit somewhat crudely lacking solid empirical data. A total of 26,283 hundredweights of paddy rice were purchased from and esti-

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1/ 800,000 hundredweights consumed per year ÷ 4 million persons in El vador = 20 Lbs., rice per year per person = 320 onzas ÷ 360 = .888 onzas/day Indicator extrapolated from estimated national consumption.

2/ 62% of paddy weight.

mated 180 [3/] rice growers in the zone at an average price of ₡27.36. The farmer paid the cooperative transport intermediary an average of ₡2.00 per hundredweight less, or ₡25.36. The cost of production for the farmer, based on approximated data is ₡1,250.00 per manzana at a yield of 60 hundredweight.[4/] Disposable rice income to the farmer is thus ₡4.53 per hundredweight times 26,283 hundredweights, or ₡126,947, with average gross income per rice farmer at ₡705.00. Since most farmers also plant sorghum and corn, their gross income from rice is but part of their total income.

This estimated quantified benefit to the farmer, however, does not explain all the benefit the rice mill means to him. By having a local rice plant, the farmer has communication access to approximate prices being paid. Since the plant dries the rice, the farmer no longer has to perform this task. (This is not a policy of IRA, thus the farmer must pay for the service). In knowing appropriate local plant prices, even the smallest farmer can deal effectively with the transport intermediary in setting a cartage price.

Although IRA also buys the farmer's rice in the zone, and at a price superior to that offered by ACACYPAC (average ₡32), most farmers prefer to sell to ACACYPAC for the following reason: Payment is immediate and in cash while IRA pays only after receiving and analyzing the rice against a complicated quality control system, and even then, payment is often made to the financing institution to cover loans and interest for rice planting and cultivation, with only the difference being delivered to the farmer. This process can often take a month or more and the farmer must assume all costs in drying and transporting rice to IRA. For the small farmer, this system is uneconomical. By establishing the system of advancing funds under

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3/ From previous survey data it is estimated that the typical rice farmer selling to ACACYPAC sells about 145 hundredweights each to the coop. 26283 ÷ 140 = 180. The coop. register for 1979-80 shows a little more than 100 sellers, but many of these and the transporters have bought rice from the smallest farmers to resell to ACACYPAC without stating so, thus understating number of beneficiaries.

4/ According to most recently published survey of El Salvador Rice Production costs costs for the 1977-78 crop year, average cost per hundredweight was ₡17.01, which has been adjusted for inflation.

guarantee to the cooperative purchasing committee (the transport intermediaries) who assume the actual purchase risk by paying farmer for rice, and in turn, receiving an adjusted payment by ACACYPAC after analysis of their consolidated truck purchases, the farmer benefits by receiving immediate cash which can be used to cancel loans and for other necessities, and the cooperative benefits by shifting the quality risk of purchases to the intermediary (the latter presumably benefits based on some crude marginal pricing of his truck costs, and labor inputs against the income differential received from the cooperative and paid to the farmer).

Since the cooperative performs valuable drying, grading, storage, milling, classifying, packaging and transport services, and besides ships in bulk, classified qualities, IRA is benefited by a reduction in reception, analysis, milling, grading and clerical costs, and is immesurably helped in achieving its own objectives of (1) purchasing from the small and medium farmers and (2) supplying the lower income consumer with adequate rice supplies. This process generates substantial positive benefits for the cooperative, the producer, consumer and distributor (IRA), when it is followed on a timely basis as determined by careful planning and coordination beforehand. When this process goes astray, however, some of these groups are prejudiced, as discussed in the following section.

F. External Factors

In 1978-79, ACACYPAC sold dried, stored, and graded paddy rice to IRA for a price dependent upon quality, and performed milling, classifying, packing and transport services in delivery of the milled rice to IRA's warehouse depot for a specific set of prices. For the 1979-80 sales cycle, ACACYPAC requested

an increase in milling and transport service prices to offset increased salary, energy and fuel costs brought on by mandated minimum wages hikes and petroleum cost increases. IRA declined ACACYPAC's proposal. Subsequently, IRA reversed its earlier stance, and agreeed to ACACYPAC's initial offer (ACACYPAC had predicted the cost base sooner than the other millers who sell to IRA, and it was only after other millers proposed similar increases, that IRA realized the offers were valid). Unfortunately, the Board of Directors of IRA must approve such price changes, and did not because many Board members are important gov't officials, who failed to attend meetings due to pressing problems related to the sweeping reforms proposed. ACACYPAC waited in vain (as did the other millers) until the end of December, when the general resignation of ministers occurred. Only then, did the cooperative resign itself to delivering paddy rice without obtaining service income. Due to ongoing fixed operating financial changes, these delays will cost the cooperative an estimated ₡50,000 in foregone gross income and about ₡32,000 in net income only on the late delivery of paddy rice, while losing the milling and transport services will cost ACACYPAC up to an estimated 15,500 additional colones in gross income, and ₡7,200 net income.

2. COFIGAC (Cooperative Feed Concentrate Project in Sensuntepeque).

A. Summary of Activities

Technoserve advisors worked with cooperative officials to plan, execute and control the construction of a new feed mill located on the main highway at the outskirts of town and to study, finance, and set up a new Ag. inputs commercial activity located at the center of town.

For the former activity, advisors assisted the cooperative in site preparation, selection of materials, contracting construction services, in accounting and cost controls over disbursements, and in overseeing the actual construction. For the latter activity, Technoserve designed a survey instrument, assisted in carrying out the survey, analyzed results, and interpreted then to the cooperative Board. Later, when the project activity was approved for execution, Technoserve assisted in the loan request and follow-up, later advised on commercial site selection in town, and, when funds were disbursed, in material stocking, personnel hires and orientation, and cost controls.

At the end of October, Technoserve's advisory contract expired and the cooperative Board voted not to renew it, basing its decision on Technoserve "having completed satisfactorily the tasks of studying, setting up and training personnel of the feed concentrate project" (letter from cooperative president to Technoserve 10/17/79). The letter also stated that the Board of Directors "acknowledged the efficient labor effected by Technoserve personnel without whose contribution it would have been impossible to implement the project with the success achieved".

Nevertheless, Technoserve developed a set of concrete recommendations included in a final evaluation report of the activity in order to guide the cooperative Board in maintenance of a successful ongoing operation.

B. Training and Transfer of Capabilities

Technoserve completed training of the cooperative manager in the procurement, production and marketing processes of the different cooperative activities, as well as in overall planning, organization, administration and control of resources. Advisory assistance to the various cooperative

committees in overall cooperative negotiations and decision making was finished. A new accountant who took over from the accountant trained fully by Technoserve, after the latter left his position (see External Factors) was oriented and partially trained in the control of his function. The test of the cooperative ability to effectively manage its own affairs will come when an unexpected problem affects its operations (i.e. breakdown in machinery, personnel transfer, mis-use of funds, lack of raw materials, etc) and when the results it later achieves demonstrate that it's activities continue to grow and not stagnate. Technoserve's chief concern with the ability of COPIGAC personnel and members to address these points does not lie in their capabilities to do so. Rather, this cooperative has historically tended to rely heavily on the advise and labor of a few key members. Technoserve has not been successful in broadening the participatory base of COPIGAC precisely because of the unwillingness of the majority of its own members to become actively involved. This element of concentration of authority and responsibility in a few individuals is quite common in smaller enterprises, and while present operations will probably continue reasonably steady under their guidance, future growth will require a broadening of the management base.

C. Benefits and Beneficiaries

An estimated 6,000 hundredweights of feed concentrate were sold during 1979, bringing the total 3 year sales under Technoserve assistance to almost 17,000 hundredweights. At an average consumption of 5,667 hundredweights per year almost entirely for lactating cows, about 525 cows[1/] have had the the year round benefit of this feed supplement, and have produced incremental

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1/ 5667 x 100 ÷ 270 (concentrate feed days during lactation) ÷ 4 (daily Lb. ration).

milk revenue benefits for their farmer/owners of about ¢127, 575 [2/] per year or about ¢ 382,725 since the project commenced in late 1976. Divided by the 127 members, this represents an incremental revenue benefit of about ¢1,005 per year per member, assuming all used the feed concentrate. Income benefit is probably somewhat less per member than that estimated due to non-member purchases, but there is little doubt that, on the average, the COPIGAC member has directly achieved greater income. The increased use of feed concentrate during the rainy months and the steady month to month consumption pattern indicate that members are fully convinced of the value of concentrate, directly to their animals as well as to their own incomes.

Cooperative net income alone has registered an increase of almost ¢25,000 during the last 3 years, which has helped COPIGAC nearly triple its asset holdings, yet always maintain between 80% and 90% of its holdings as obligations to members and not to third party creditors or financial institutions. Many other incremental income benefits to employees, raw material suppliers, transporters and other have resulted from this project, [3/] but the above indicators speak eloquently to the impact this project has had on the low income farmer and the COPIGAC membership.

D. External Factors

While Technoserve advised this cooperative, it was able to effectively monitor the project operations. Once advisory assistance was withdrawn, such monitoring became more difficult. The function which the cooperative had shown the least interest in managing - the accounting function - became the function that soon had problems. A failure to follow advisor suggestions to set up appropriate inventory controls for the new Ag. inputs sales activity

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2/ 525 x 2 bottles increase daily x 0.45/bottle x 270. Extrapolated from actual sales results.

3/ See ACASJMRL Project discussion for more details and calculations.

resulted in a loss of control over the cost of sales, hence delaying the preparation of financial statements.

Part of the cause for this problem was the decision taken by the cooperative to not give its' Technoserve trained accountant a ₡50 monthly increase after 18 months of service and hired another person; some of the cooperative Board argued that the old accountant had not served members with the proper attitude. Technoserve was not able to mediate the salary difference between the accountant and the Board members. Since qualified accountants are difficult to employ in small towns, the replacement accountant (a relative of the cooperative president) lacked most of the tools and learning necessary to perform his tasks. Although Technoserve did not feel it was obligated to train completely the new accountant (it took over a year to train the first accountant), in good faith it attempted to do what it could to train the replacement in the few months remaining on the contract. It also offered to retain advisory services for an additional period to help resolve this problem; however, the cooperative Board did not feel it was necessary (because it would cost them all of $100 per month as a service charge). Technoserve will in any case, assist the cooperative with the year end closing of its books, and, at the same time, clear up the inventory problem.

3. ACOOPARSANGE (Cooperative Feed Concentrate Production and Agricultural Service Project in San Gerardo-San Miguel)

A. Summary of Activities

Technoserve services to this cooperative during the reporting period included all advisory services normally provided after start-up of operations. The goal of substantially training all cooperative employees in their positions was achieved despite unexpected turnover of the manager and accountant

positions. First year feed concentrate sales, other service sales, and gross and net income projections were substantially exceeded. Membership increased by 45% (30 new members) and the cooperative duplicated its activity revenues and asset holdings. A pioneer case study was conducted in collaboration with Technoserve's Division of Planning and Operational Support to determine direct and indirect impacts of the projects and its effect on the business and human environments in the area. Social outreach efforts have resulted in increased community organization and participation, via the women's auxiliary committee and various cooperative committees. The cooperative renewed its advisory service contract with Technoserve until May, 1980, the end of the high, dry season concentrate demand.

B. Training and Transfer of Capabilities

Advisors carried out training and orientation plans with the cooperative Board, committees and employees in the following areas: functional responsibilities; supply and production management; financial and accounting controls; sales promotion and distribution; plant maintenance; administrative policy formulation and decision making; legal obligations; cost and price review; and social outreach. The plant operator, assistants, and two sets of managers and accountants were substantially trained, lacking only exposure to a high sales demand period to test acquired skills and knowledge. A detailed maintenance plan for plant machinery and equipment was elaborated for coop guidance. A study of concentrate costs and prices was completed which permitted the cooperative Board to vote to increase concentrate prices to new levels consistent with cooperative income and service goals to members, as well as increase its knowledge of the factors underlying successful operation of the feed mill. By advising the cooperative on ways to offset the wet season decline in concentrate revenues, an agressive pasture grass chopper

service policy was adopted and these service revenues resulted seventeen times greater than the previous year. Service outreach efforts have motivated cooperative committees and the community woman's auxiliary to expand their activities; hold more cooperative meetings; visit members; organize fiestas; collect funds for a community basketball court; open a bookstore, etc. This work is helping to solidify the future role of community and cooperative outreach organizations to help reduce external costs of project promotion and expansion.

C. Benefits and Beneficiaries

Quantitative unaudited, business impact indicators demonstrate that the feed concentrate activity sold 2,111 hundredweights of feed concentrate during the April-December reporting period, and 3,739 Hwts. from January to December, with corresponding sales values of ₡27,148 and ₡46,425 respectively. This was a full 20% above first year volume and 14% above sales value projections. Overall annual sales revenues from January to December duplicated the previous years (₡167,055 Vs. ₡80,138), other income quintupled (₡28,119 Vs. ₡4,702), gross sales margin doubled from 6.5% to 13.5% and net surplus almost tripled in value from ₡3,459 to ₡10,279 with the percent return on sales increasing from 4.3% to 6.2% (this consistent with cooperative service policy to directly distribute benefits to members via low sales price margins).

Social Indicators:

Member patronage rapidly increased cooperative asset values to double the 1978 totals. Credit from the cooperative was used by about 90% of members and outstanding credit increased five times over the previous years total to ₡130,431 as of 12/31/79. Thirty new members have joined the cooperative in 1979 (now 127) adding an average of ₡90 equity each to the capital account.

Total capital equity has increased ₡17,888 during 1979 to maintain an adequate owner contribution base as the cooperative asset holdings expand. Incremental fixed and working capital investment has increased ₡169,205 since this project idea commenced analysis 18 months ago. Over ₡145,000 of raw materials and inputs were purchased from national suppliers in 1979. Over 100 members purchased feed concentrate while several dozen supplied materials for concentrate production in the January-June period. ₡10,150 was paid out in cooperative employee wages and benefits. Gross incremental income to farmers using lactating feed concentrate over traditional feeds is roughly calculated at ₡81,604 [1/] based on 1979 lactating sales to 102 members and ₡800 average incremental income per farmer/member.

Non quantitative project benefits include (most apply to other feed concentrate projects as well):

- Training and upgrading of local skills and knowledge.
- Pull of new investment/credit activity to cooperative/area resulting from feed mill.
- Increase in activities of local and cooperative organizational groups, increased group participation and learning.
- Increased technification in cattle feed formulation and improved cattle health (the latter as expressed by 76% of respondents to case study question).
- Increase in product quality as a result of local monitoring and feed back.
- Shifting of cattle feeding practices from traditional, non-productive methods.

1/ 3739 x .97 x 100 ÷ 270 ÷ 4 Lbs ration per day = 336 cows x 2 bottles average increase x 270 x ₡.45. Extrapolated from actual sales results.

° Strengthened cooperative structure, policies and leadership.

° Increase confidence of local community in services provided by development institutions.

° Potential project spin-off activity: cattle fattening in confinement.

For a project only one year in operations, ACCOPARSANGE has demonstrated excellent results which have contributed in turn to heightened cooperative visibility in the community. And, as shown by initial results from the case study of households interviewed - 76% without electricity; 65% without potable running water; 82% confined to houses of less than 3 rooms with an average of 7 family members; 44% with houses of adobe, 38% with mud and wood dwellings; and 47% with dirt floors - this community and cooperative certainly belongs to the poor majority of El Salvador.

D. External Factors

Because of the isolated location of San Gerardo, as well as it's small size, many enterprise factor inputs (some raw materials, equipment, office supplies, fuel, etc.) must be brought in from distant areas at above average transport costs. The lack of many social/economic alternatives in town may contribute to continual enterprise employee turnover once they have acquired marketable skills which allow them to move to a more stimulating urban location. A combination of income incentives based on their performance and project output, and increased community organization and activities may help reduce this tendency. Technoserve direct advisory service and alternative project service opportunity costs are higher because of the logistical constraints, and vehicle wear is excessive. Advisor security is low because of the long, bad roads and sparce population centers heading north to the town from the main highway. These factors, however, are common to several other

Technoserve assisted projects, and, as such, are necessary costs/risks which must be undertaken in order to provide adequate services.

4. ACASJMRL (Cooperative Feed Concentrate Production and Agricultural Service Project in San Juan de Merino - San Vicente

A. Summary of Activities

Technoserve advisors worked with cooperative personnel and directive bodies in all cooperative activities, including the new feed concentrate plant. Substantial social outreach services provided by the firm also enabled ACASJMRL to construct a rain water catch basin, which will serve multiple purposes, and to improve the poor access road from the main highway to the cooperative. Over 30 new members joined ACASJMRL in 1979, and the cooperative increased its sales income by 32% and asset holdings by 20% from the year earlier. First year feed concentrate sales volume projections were more than doubled and total gross income for ACASJMRL has more than doubled from last year totals.

B. Training and Transfer of Capabilities

Training and orientation activities included all areas mentioned for the ACOOPARSANGE project. The cooperative miller and accountant have been fully trained in their areas of work, while management training for the cooperative Board and manager is still in process. Notable training activities in which cooperative members or employees directly collaborated included a cost/price review of concentrate which resulted in an average increase of Ø1.75 per hundredweight, and joint work with Agricultural Development Bank (B.F.A.) and National Cooperative Institute (INSAFOCOOP) representatives to develop adequate loan analysis criteria. Social outreach advisory work aimed at increasing

member interest in cooperative activities. Several meetings held at the cooperative attracted an average of 30 members who were given information and advise relative to concentrate use, pest control in plants, and fish farming. The latter was based on the construction of the rain water catch basin (executed with cooperative and AID donated funds) which was subsequently stocked with donated fish (from Division of Natural Resources of Min. of Agriculture), an activity repeated in total by 10 other members on their own lands with their own funds. Member interest in the area as a result of this social outreach work has also contributed to their involvement in other infraestructural activities, including labor and equity contributions to help level the poor access road leading to the cooperative from the main highway.

C. Benefits and Beneficiaries

The feed concentrate activity has resulted in over ₡41,500 of new revenues for the cooperative, with a net utility estimated at 14%. During April-December, 1979, 2,896 hundredweights of feed concentrate were sold, 4,053 from January to December. Overall sales for the 9 months ended total almost ₡270,000, a full 32% over the entire 12 month total for the previous year. Comparable annual net utility figures are not yet available due to the large returns the cooperative earns during the final 3 months (January to March) of its fiscal year. These, however, should be relatively consistent with increases in sales revenues.

Social Indicators:

Member patronage allowed the cooperative to increase its asset values by 20% (to a considerable ₡441.0 thousand), as virtually all members use credit services, and over half of the roughly 80 cattle holders (besides about

100 non member cattle holders) purchased feed concentrate. With 30 new members, and retention of earnings, the equity base grew and maintained pace with the overall asset value increase. For the 9 months of 1979, about ¢245,000 of raw materials and inputs have been purchased from local and national suppliers. Incremental income benefit to farmers using lactating feed concentrate is estimated at about ¢59,292 based on use of 263,445 (65% total sales) of lactating concentrate fed daily to 244 cows (ration 4.0 Lbs) during 270 days of 1979, at an incremental yield of 2 bottles per day per cow (¢0.90/day). Additional savings of ¢7,519 based on a ¢.10 [1/] per ration/cow/day savings over cottonseed meal are also estimated. Another ¢53,213 colones may be considered saved by use of 141,855 Lbs., maintenance concentrate on 473 cattle [2/], which prevented them from losing on average, 75 Lbs during the dry season at a value of ¢1.05/Lb.[3/] Incremental cost to save this weight was ¢12,767 [4/] leaving net income benefit at ¢40,446.

Net incremental income also resulted to local suppliers of crop stubble (previously burned or sold at an inferior value based on seasonal rental of land) and grains used to prepare the concentrate. Stubble suppliers received about ¢885 net additional income based on an average 15% mix of stubbles in the concentrate sold (608 cwts.), yielded from about 5 manzanas of land at net gain of ¢177/manzana: (¢3.00/cwt. - ¢1.30/cwt. harvest/transport costs less ¢30/manzana opportunity rental cost). Grain suppliers provided over 15 manzanas of corn and sorghum to produce the feed concentrate at incremental income benefits of ¢1 - ¢2/cwt. (40 cwts. per manzana) due to better knowledge of

1/ Based on an economic analysis carried out by Ing. F. Lino Osegueda and Ing. Adrián Chacón for the ACOPALIM project. This daily savings benefit should have taken place in other feed concentrate projects in operation.

2/ 141,855 ÷ 100 days (average maintenance period for dry cows and other cattle during dry season) ÷ 3 lbs.

3/ Average for dry cows and other animals during non-rainy season is 150 Lbs. and represents about 50% of the cattle in the herd; rest of cows are lactating and receive lactating concentrate, which holds their weight.

4/ Concentrate price of ¢9/cwt. x 1,419 cwt sold.

market prices as offered by the feed plant.

Non-quantificable project benefits not mentioned elsewhere include the following:

° Improved animal physical condition and health

° Improved cow fertility

° Reduction of weight loss due to dry season feed conditions.

° Areas not previously exposed to feed concentrate now have the opportunity to use it.

° Establishment or fortification of sales distribution outlets.

D. External Factors

Infraestructure and traditional land use pose two principal problems which must and can be improved with effort. The lack of good access roads, electricity, water and wire communications makes the San Juan de Merino area one of the most underdeveloped in the country. The planting of grains by farmers in land better suited by its fertility for extensive crops like sugar cane, fibers or cattle grazing is gradually eroding the area, and production yields are disminishing. Most of the demand for feed concentrate comes from members and non-members who live in a radius of 5 to 40 kilometers around cooperative, thus necesitating a more complex and costly distribution system than other feed concentrate projects (an interesting benefit of this logistical "constraint" has been that the 5 distributors of feed concentrate have given preference to the product over competitors, not only for its quality, but for its lesser cost per bag, which permits a greater use and turnover of their funds). The introduction of feed concentrate, rain water catch basin, and road leveling are initial steps to a reclaiming and improvement of local land, and should in time "pull" more technification and rationalization of poor farmers efforts into the zone.

A positive result of the sale of feed concentrate to users outside the local San Juan de Merino area has been the generation of cash income derived from persons not investing their incomes within the local zone (cattlemen from Cojutepeque, Zacatecoluca, etc), thus incrementing the cash normally available from local productive activities to spur new investments.

5. ACOPADEC (Cooperative Feed Concentrate Production and Agricultural Service Project in Cacaopera, Morazán

A. Summary of Activities

Technoserve provided complete advisory assistance to the post start-up of operations of the cooperative feed concentrate production and marketing enterprise, and attempted to provide guidance to ACOPADEC in other activities initiated by the cooperative during 1979. First year feed concentrate sales have met and other service sales have exceeded projections, operating gross margin has increased from 31% to 40%, but net surplus has registered a decline. A cattle fattening demonstration of 20 heifers was carried out at a slight profit for the coop. The cooperative initiated new transport service, grain and fiber cultivation, wood product, and additional credit activities, although none at the suggestion of nor with concurrence by Technoserve.

B. Training and Transfer of Capability

Technoserve provided orientation and training services to cooperative employees and the cooperative Board of Directors, in areas mentioned in the ACOOPERSANGE evaluation. Considerable turnover of employee positions for personal reasons or removal by the cooperative Board has impaired Technoserve's efforts to execute a successful on-going on the job training program. To illustrate, 2 sets of plant operating personnel (terms of 3 each) have been employed, and 3 sets of secretary/bookkeepers. All original personnel had

been virtually completely trained when they left. The cooperative manager and outside hired accountant have been more durable and, as a result, have been able to acquire more skills and knowledge. The cooperative Board has generally not followed Technoserve guidance and recommendations and only with negative experience are beginning to realize the accuracy of earlier observations and suggestions made by advisors.

Technoserve does not believe this cooperative is completely ready to manage its feed concentrate activity alone and much less so its other newly created activities, but cannot force the Board to renew advisory assistance expiring in January, 1980, nor can it expect success in fully transferring capability unless the cooperative leadership adopts a more collaborative attitude, and provides an environment conducive to the retention of hired employees.

C. Benefits and Beneficiaries

Quantitatively, ACOPADEC's feed concentrate plant sold 1,750 hundredweights during 1979, achieving its projection. Volume sales per member were actually slightly higher than ACOOPARSANGE indicating acceptance of the product. Addition of the plant allowed gross margin on sales to climb to 40% (this varies considerably from ACOOPARSANGE due to the latters extensive low margin product resale activities). The incremental income impact on farmers resulting from sale and use of 1,312 cwts (75% total) hundredweights of lactating concentrate may be illustrated on current values and approximate relationships between feed input and fluid milk output. Farmer feeding their cows an average of 4 lbs of this concentrate per day mixed with a ration of dried pasture grass yield about 2 bottles of milk per day extra over amounts yielded feeding the equivalent traditional ration of cottonseed meal and poor quality pasture. Concentrate sold with this ration usage feeds 121 cows daily for a

year with an incremental income effect of 121 x 2 x 270 x ₡.45 average price = ₡29,403. Additional incremental income of about ₡.10 per cow per day or ₡3,267 comes from the decreased cost of equivalent rations of concentrate and cottonseed meal. Total gross incremental income to farmers may be estimated at ₡32,670 based on 1st year concentrate usage. Use of 438 cwts. of maintenance concentrate allowed dry cows to resume lactation, while other cattle were able to hold their weight instead of suffering around a 75 pound weight loss during the dry months, at a total cost to the farmer of 75 x ₡1.05 Lb. = ₡79 per animal. At consumption of 3 Lb/day/animal during a period of of 100 days, approximately 146 animals were kept at their weights at a saving of ₡11,498.

Incremental income benefit to sellers of crop stubble used about a 15% of the ration to balance concentrate formulas or 262.5 cwts (total purchased) was about ₡380 to various farmers selling these to the cooperative based on a price of ₡3.00/cwt. less ₡1.30 for harvest and transport. These normally burned by-products are sometimes left in the fields for grazing by animals, which would allow the farmer to charge another ₡30/manzana. Thus the net income benefit for sellers was about ₡174/manzana at 2.2 manzanas of consumption given concentrate sales. Local sellers of corn and sorghum grain to the cooperative (about 15% of a typical formula, or 262.5 cwts) also offers ₡1 - ₡2 net incremental income per cwt. to farmers over what was offered formerly by intermediaries. This is due to increased knowledge by farmers of true price offerings according to local market demand rather than speculative offers of intermediaries.

D. External Factors

Despite relatively positive results obtained from the feed concentrate activity, the cooperative has not generated a net surplus for the membership.

The chief reason for this is the improductive financial results obtained from new activities, namely the purchase and service rental of a truck, and purchase and cultivation of part of a 60 manzana land parcel. Both of these activities were entered into against the advise of Technoserve. Depreciation expense on the truck alone is equal to the net loss suffered by the coop in 1979. The cooperative Board has not acted alone; it has had the support of of Banco de Fomento Agropecuario in both ventures. There was no study of these investments nor was there provision of regular technical assistance to the cooperative to help them execute the investments.[1/] Technoserve did not provide direct technical asistance to ACOPADEC in these areas, but it did respond to cooperative questions and attempted to provide guidance to the cooperative in use of the truck by completing and analysis of truck cost/use variables which was passed to the Board. Recognizing that more adequate communication with the development bank agents was needed, Technoserve has since worked closely to increase contacts. Conversations carried out between B.F.A., ACOPADEC and Technoserve representatives have led to the conclusion that while the bank recognizes that the new activities have not been managed well, the historical performance of the cooperative in repaying its debts has been better than other B.F.A. financed coops - thus, there is the expectation by the bank that the loans will be paid back

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VI. DESCRIPTION OF NEW PROJECTS

1. Summary of Activity Basis - Cattle Fattening Projects

Technoserve has taken the basic model offered by the feed concentrate projects, a demonstration carried out at ACOPADEC and expert technical assistance by Ing. Osegueda, to develop a cooperative sponsored enterprise which

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1/ A young agronomist has visited the coop once or twice per month, and a cooperative administrator has attended General Assemblies.

uses the same equipment and most of the same raw materials, but directs production to cattle which are bred for meat, and applies the technology of feeding scientifically based rations to animals in confinement (i.e. within stockades), to improve the conversion ratio of feed input to meat output, thus augment net income received from later sale of fattened animals. This enterprise, however, attempts to rationalize more than feed conversion ratios: it takes into consideration the annual climatic fluctuation of rain, which in turn, affects the quantity/quality of pasture available, which in turn affects the weight, health and price per pound of meat paid for live animals.

The essence of the business is the following: (a) To buy meat cattle at appropriate ages and weights at the end of the rainy season when supply is greatest and prices lowest; (b) To submit animals purchased to a 3 to 4 month period of daily feeding and management in confinement, using nutritionally based feed formulas of crops and crop by products locally available; (c) To sell the fattened animals during the dry months when supplies are low and prices high. Earnings are gained via (a) the meat market price - fattening cost per pound differential; (b) the cyclical difference in meat prices from the rainy to dry season; (c) the use of feed ingredients previously unused; and (d) the additional price paid for cattle fattened in confinement vs. fattened on pasture, due to the higher useable meat to live weight ratio, higher sale weight of the animal and better meat quality. These last qualities lower slaughtering costs.

The confinement pen is a low cost stockade in which animals are kept during the fattening period, given eating and drinking facilities, and shade (roofing or trees) to promote resting. Space is scientifically calculated based on the number of animals to be confined, their expected weights, and the type of flooring to be used (i.e. cement, stones, or dirt). Apart from these land and facilities requirements, the hammermill, and horizontal mixer,

with their respective motors, and a molasses tank or barrels represent the total fixed investment required. Animals in confinement are vaccinated, cleaned, de-bugged, branded, classified and generally cared for in such a manner is that they do little more than eat and rest.

Benefits to the cooperative sponsors of this project are numerous, and may be summarized as follows:

° Direct income increase to members from feed lot results.

° Create new income possibilities for suppliers of currently non-productive raw materials.

° Generates new employment opportunities in rural areas.

° Offer greater meat production per animal relative to pasture feed cattle, improving meat quality, meat yield and increase weight in less time.

° Break the cycle of cattle weight loss during the dry summer months.

° Improve commercialization techniques by organizing cattle sales in a more orderly fashion than those of local auction markets ("tiangues").

° Fatten cattle more efficiently, faster, at an economically viable cost.

° Improve cattle technology in poor, rural zones of El Salvador.

A summary of the 3 cattle fattening projects in process of implementation follows:

2. ACOPALPAZ (Asociacion Cooperativa de Producción Agropecuaria "La Paz" de R. L., Cantón Piedra Parada, Morazán).

A. Summary of Activities

A 90 member cooperative established in May, 1976, the principal activities of which to date have been small volume sale of agricultural inputs, credits to members and bee honey production. This group is most representative of

the poorest segment of rural El Salvador. About 90% of members own less than 5 manzanas of hilly, bro land, and less than 2 head of cattle on the average. Members cultivate small parcels of coffee and cereal grains.

The cattle fattening enterprise of the cooperative is designed to offer the minimal scale possible consistent with a reasonable economic return, to allow the cooperative owners and employees to assume management of its operations within a reasonable period of time. Thus, the fattening operation will commence in 1980 with a maximum capacity of 100 head per cycle, expanding to 200 later. The project will be implemented on a 3000 square meter lot, 700 of which has been purchased by ACOPALPAZ, and the rest rented. Each of 4 stockades used (for classification purposes) will be about 750 square meters each, including areas for machinery, warehouses, office and water source.

The feed formula will use over 50% raw material available locally, corn, its stubble and by-products, and dried, milled coffee pulp being the principal ingredients. The project will require an initial investment of about ₡69,000, divided into ₡26,800 fixed capital and ₡42,000 working capital (mostly to purchase cattle for fattening). Members will contribute almost ₡11,000 of this total through equity contributions, or provision of materials and labor to the realization of the fixed component of the investment. A.I.D. will donate ₡6,250 to help purchase equipment.

During the reporting period, Technoserve completed an audit of the coop administrative and financial controls, completed a socio-economic survey of members and prefeasibility analysis, feasibility study, signed a Service Contract with the cooperative and assisted in submission of the credit request to the Agricultural Development Bank.

B. Training and Transfer of Capability

Cooperative committees and employees will receive select training and orientation from the following areas, depending upon committee or employee function: Cattle purchase; transport; fattening preparation (including feeding, vaccination, de-bugging, weighing and classifying), management; feed formula preparation, animal health and care; deselection of unfit animals; treating minor injuries; control of feed intake vs. output; and commercialization; general management and control; social outreach; plant maintenance; administrative decision-making; legal obligations; and cost/price review.

C. Benefits and Beneficiaries

First year gross project revenues, 90% from cattle sales 10% from sales of milled by-products, are projected to total about ₵59,200, offer a gross margin of ₵15,450,or 26% and a net return of almost 2%. These results are expected to climb to ₵147,800 in sales, ₵41,200 gross margin and 12% net surplus by year 3 of the project. Cattle will be purchased in the region weighing about 550 lbs, resold after gaining an average of 175 lbs each. Animals will be be purchased at ₵467.50/ ₵0.85 lb average and sold on an average of ₵725 each/₵1.00 lb. weight gain will average 2 lb/day per animal (₵2.00) on an average feed cost of about ₵1.00/day. 54% of the feed formula will be local raw material providing ₵2,150 of local income,[1/] most of it incremental due to previous sub or non use of the materials.

Six permanent jobs will be created by the feed lot, and many others sustained through grain and crop by-products cultivation and sales, transport of cattle, and their distribution. As in all Technoserve assisted projects, cooperative members will be expected to participate actively in the project

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1/ Based on Projection of Cost of these inputs found in feasibility study.

installation and operations, set to commence in February, 1980.

D. External Factors

Poor infraestructure (i.e. very poor access roads, no electric energy, almost no local services) coupled with a very poor and untrained group will result in a longer and more difficult operation and training process. Yet, group cohesion and willingness to collaborate is very much present, (about 10 new members have already joined), and it is precisely the lack of economic and social alternatives that resulted in their request for help and Technoserve's decision to assist them.

The principal institutional factor which impeded a more rapid development of the project was the lack of funding from the Agricultural Development Bank (BFA), which exceeded its assisgned quota of loans earlier in 1979, and were unable to service this cooperative, nor other Technoserve assisted projects in Santa Rosa de Lima and Joateca. In early 1980, these loans should be approved but at a cost of 2-3 months lost in implementing these projects.

3. CACPA (Asociacion Cooperativa de Ahorro, Crédito y Producción Agropecuaria de Joateca, Morazán).

A. Summary of Activities

This is a 98 member cooperative, in operation since 1970. Until recently, its activity had been confined to savings and credit exclusively through members funds. Located in one of the more isolated areas of El Salvador, in the far northeast bordering Honduras, (210 kilometers from San Salvador), membership is mostly composed of low income farmers; 83% of the roster own less than 5 manzanas of rocky, hilly terrain - 40 members have no land at all, and average cattle ownership for the entire membership is less than 2.5 head each. Members are dedicated principally to the cultivation of basic

grains, some coffee, with the remaining lands reserved for cattle grazing.

The cattle fattening project will commence in 1980 with 200 head per cycle increasing to a maximum projected 300 by 1982. Cattle will be purchased from more extensive cattle sources in the towns of Sociedad, Corinto, Osicala and others, with the project benefits of fattening accruing completely to the members. The project will use a concentrate mix for feeding, over half of which will be provided by local members and non-members. The project will require a total initial investment of about ₡111,000 of which ₡20,000 will be donated in cash or specie by members. A.I.D. has donated ₡8,500 of the cooperative's equity contribution to help purchase equipment.

During the period, Technoserve assisted the cooperative in completing an audit of project activities, in analysis of project feasibility, and in obtention of institutional collaboration of the credit request. A Service Contract between the cooperative and Technoserve was signed.

B. Training and Transfer of Capability

Cooperative committees and employees will receive select training and orientation in areas similar to those given to the ACOPALPAZ project.

C. Benefits and Beneficiaries

First year sales revenues, 90% from cattle sales 10% from sales to others of feed concentrate, are projected to total ₡186,230 climbing to ₡310,800 by 1982. Net return to members, projected at break-even profitability for year one, should increase to ₡25,100, or 8% by year three. Animals will be purchased weighing about 600 lbs, sold after gaining about 200 lbs, average each. Purchase cost will be about ₡0.95 - ₡1.00/lb and sale price about ₡1.10/lb.

Six permanent jobs will be created by the feed lot, many others sustained in provision and commercialization activities. Other qualitative benefits are as described in the introductory section. In the future, project expansion might be able to use the local underutilized slaughterhouse, thus creating greater local productive activity, employment and income.

D. External Factors

The isolated location of this project and poor infraestructure (roads, electric energy), will impede rapid development of project activity, yet this is precisely one of the barriers that must be broken if rural development is to proceed. Institutional collaboration for this project has been particularly ample, sometimes effective, sometimes not. The Division of Natural Resources of the Agricultural Ministry has provided architectural and engineering assistance in the construction of the wood feed mill plant, while the Ministry of Education has provided labor training services to a minimum 15 members each for this and the ACOPALPAZ Cooperative, so that these may actually serve as the labor crews constructing the two feed mill plants. The lack of funds from B.F.A. has delayed the implementation of this project start up by 2-3 months, but operations should commence by March 1, 1980. The cooperative tried in vain for many months to change its statutres to allow for agricultural production activities; finally, with the collaboration of a lawyer and Technoserve, INSAFOCOOP approved the change. The freezing of land sales over 71.5 manzanas by the Junta has created a serious problem in that CACPA had agreed to purchase a parcel from a local non-member who owns 94 manzanas. B.F.A., however, has indicated that the loan,once processed, may be taken down prior to authorization and legalization of the land sale. It should be noted that Technoserve has been the catalyst to all the above mentioned institutional relationships, thus indicating the seriousness and importance that the firm applies to Institutional relationships with sponsor groups

receiving advisory services.

4. ACOPAVE (Asociación Cooperativa del Valle de La Esperanza, Nueva Guadalupe, San Miguel).

A. Summary of Activity

A cooperative of 211 members incorporated since early 1976, this group has been involved in a variety of activities to date, including sale of agricultural inputs, tractor and trucking services, and savings and credit services to members. The group belongs to the low income strata of Salvadorean farmers: 94% own less than 10 manzanas of land, none own more than 25 manzanas. Some members cultivate basic grains while other raise small herds of cattle.

This project is designed to a scale appropriate to the abilities of the group. First year's fattening schedule of about 200 cattle per cycle should be expanded by 1982 to 300 head . As in the other fattening projects more than 50% of the feed formula used will be composed of locally available raw materials to be supplied by members and others. Since a number of the members raise cattle in small herds, other members sales to ACOPAVE will be their own cattle for fattening; and arrangement has been worked out to apply a part of the purchase price to the member's equity account, thus strengthening the internal generation of funds to the project. Members will contribute about ₡10,000 total to the initial fixed and working capital investment of ₡96,500.

Technoserve, in its initial field audit of the cooperative's financial and administrative condition, detected a disorganized management and improper controls over fund use. Additionally, the cooperative was operating some of

its activities inefficiently and at a financial loss. As the Project Study neared completion, a decision was taken by Technoserve management to delay the implementation of the cattle fattening project until the cooperative and Technoserve jointly agreed to carry out a short term reorganization of the cooperative's activities and controls. An interim assistance contract was signed and, as of the end of the reporting period, most of the tasks to be accomplished under this agreement were in an advanced stage of completion. It is expected that the cattle fattening project will be able to commence operation by March, 1980.

B. Training and Transfer of Capability

Cooperative committees and employees will receive select training and orientation in areas similar to those given to the ACOPALPAZ and CACPA projects.

C. Benefits and Beneficiaries

First years projected sales of ₡184,063 from cattle fattening should reach ₡256,000 by year three. Net cooperative income from the activity is projected from breakeven profitability in year one to slightly below 5% earnings in year three. Six permanent jobs will be created and substantial others sustained in grain and cattle provision. Cattle will be purchased at about 575 lbs each at ₡0.90 lb. and sold at about ₡1.00/lb after adding an average 200 lbs each. This gain, as well as those projected for other cattle fattening projects is really understated, since under alternate field conditions, animals entering the dry season at 575 lbs could expect to lose about 150 lbs additional during the course of the dry cycle rather than gain weight;[1/] thus, incremental real gain is closer to 350 lbs per animal fattened, which

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1/ Weight loss is double the 75 lbs earlier mentioned due to the lack of lactating cows in the fattening activity.

at current market price equals about ₡385 per animal in incremental gross revenues. Additionally, due to the intensive fattening cycle of a feed lot opration, the opportunity cost to a farmer raising his cattle under alternative conditions represents a 1 to 2 year additional investment in feed and management for the cattle to reach the same weights obtained at the feed lot cycle in 120 days.

D. External Factors

The relative poverty and lack of preparation of the sponsor group makes this project equally as difficult, from a technical assistance point of view as the ACOPALPAZ Project. The group has shown willingness to adapt it's procedures and collaborate in reforms. Banco de Fomento has contributed to an improvement of the tractor activity by referring clients to its use; their cultivations financed by that development institution. (B.F.A. financed the tractor without study). INSAFOCOOP has, as in all the Technoserve projects collaborated in holding general assemblies of members, and in accounting closing and audits.

New Feed Concentrate Projects

5. ACOPALIM (Asociación Cooperativa de Producción Agropecuaria Limeña de R.L. Santa Rosa de Lima, La Unión).

A. Summary of Activity

A 66 member cooperative legally formed in 1976, this sponsor group's feed concentrate project lies at the center of one of El Salvador's principal cattle grazing and trading centers, and thus is projected to become the largest of the feed mills erected to date. The only current activity of the cooperative

is the resale of cottonseed meal to its cattle raising membership. The cooperative membership is characterized on average by persons of generally higher education and resources than that found in other Technoserve assisted projects, but their land and cattle holdings are representative for the average holdings of non-members in the zone, and the land they do hold has little alternative use except for cattle grazing.

Upon completing the preliminary audit of financial and administrative conditions of ACOPALIM, the socio-economic survey and preliminary feasibility analysis, Project Study, equity collection, bank financing request, and other related services, the feed concentrate activity first stage installation was undertaken, and finished by December 1, despite the lack of external working capital funds from B.F.A.. This fact has severely limited the amount of raw material that can be purchased, and thus concentrate that can be produced and sold. Members, however, have collaborated fully by loaning aw materials to the plant so that it could commence operations as planned. The foresight of cooperative leaders, members and Technoserve advisors in programming a two stage implementation: First stage, renting the production site, and purchasing the minimal equipment necessary; second stage, erecting a complete production facility on the nearby land parcel owned by ACOPALIM, has allowed the group to commence production based on the ₡11,000 equity contribution by members, and the ₡20,000 equivalent loan of raw materials by members until financing from B.F.A. is disbursed.

B. Training and Transfer of Capability

As with other Technoserve feed concentrate projects training and orientation advisory services will cover the full range of cooperative activity,

including all the normal business functions (accounting, production, etc) as well as social outreach services to increase local participation and identification with the cooperative activities. Cooperative committees and employees will be the principal training recipients.

C. Benefits and Beneficiaries

First full year operations project the sale of 12,100 hundredweights of feed concentrate, or 1,000 hundredweights per month. During the first four months of of project operations, sales of 2,200 hundredweights were projected, but this had been exceeded in the first month of operation (December) with sales of 675 hundredweights, with further increases expected.

This project is expected to benefit hundreds of local cattlemen besides the actual cooperative membership. The latter, incidentally, will be subjected to a strong member promotion campaign to increase the membership from its present 66, giving priority to the lowest income/resource farmers in the area (as pacted in the Service Contract to be signed in January, 1980 between ACOPALIM and Technoserve). If projected sales of 9900 hundredweights lactating concentrate in 1980 holds true, about 917 cows will be directly benefited based on an average ration of 4 lbs/day, 270 day lactating period and, at incremental production of 2 bottles per cow daily, about ₡222,831 fo incremental gross milk revenues should be generated.[1/] In fact, users of the concentrate have already reported increases in milk production from 1 to 3 bottles per cow daily.

Other incremental income benefits, as described for other feed concentrate projects, should accrue to ACOPALIM and the other new feed concentrate plant at San Alejo, described below. Six new permanent jobs have been created (8 in the dry season) and many other field worker jobs sustained. In this

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1/ Extrapolated from sales projections of the feasibility study.

project, previously burned sesame stubble is being used as a raw material in addition to corn and sorghum stubbles. Sellers of sesame stubble earn ¢3.50/cwt., incremental income over previous zero returns.

D. External Factors

Except for the delay in receiving external financing from the Agricultural Development Bank, no other significant adverse external factors have been registered with this project. Membership interest and participation with Technoserve in implementing this project has been outstanding compared with other assisted groups, and signifies a potential early turnover of management responsibility to the group.

6. ACACCPCSA (Asociación Cooperativa de Ahorro, Crédito, Consumo y Producción Comunal de San Alejo de R.L., San Alejo, La Unión).

A. Summary of Activity

This 119 member cooperative was founded in 1971, and, until recently was dedicated primarily to member savings and credit activities, and some resale of agricultural inputs. About 65% of the cooperative members are very low income farmers working marginal lands of 10 manzanas or less to grow cash crops and raise cattle. The cooperative is an affiliate of FEDECACES.

The normal advisory assistance package of services by Technoserve prior to start-up of operations has been provided: pre-study financial/administrative audit; member socio-economic survey; pre-feasibility analyses; equity collection; Project Study; external credit request and installation of the activity. In addition, advisors, in collaboration with cooperative leaders

and INSAFOCOOP and FEDECACES representatives, changed the cooperative statutes to allow for agricultural production activities.

As of December 31, 1979, the external credit from FEDECACES had been disbursed and the new cooperative facility for feed concentrate production was about 75% finished, to be ready for operation by early February, 1980. A.I.D. has agreed to donate ₡6,250 towards the purchase of necessary equipment and fixtures.

B. Training and Transfer of Capabilities

Similar to that described for other feed concentrate projects.

C. Benefits and Beneficiaries

A sale of about 3,050 hundredweights of feed concentrate is projected for 1980, which should provide incremental gross milk revenues to farmers of about ₡68,526 [1/] based on a projected sale of lactating cow concentrate. By year three of the project, sales of concentrate are expected to rise to about 9,600 hundredweights per year, based on the relatively large cattle population in the San Alejo area. A total investment of about ₡70,000 to purchase fixed and working capital assets is estimated. Five permanent positions at the facility (7 in the dry season) will be created, and as in other Technoserve projects of this type, the linkage benefits to local suppliers and clients of the feed mill activity, both in job and income terms, will be considerably higher.

D. External Factors

Although collaboration between FEDECACES and Technoserve was relatively effective, the nature of the relationship between these two organizations with

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1/ 3,050 x 100 ÷ 270 ÷ 4 lbs/day = 282 cows x 2 bottles extra x 270 x ₡.45 = ₡ 68,526. Extrapolated from feasibility study sales projections.

the cooperative has sometimes created divergences and institutional rivalries, mostly as a result of a lack of communications, but also due to distinctive philosophies of the two organizations. Technoserve has taken the attitude that the sponsor group is only capable of absorbing so much new activity and new investment in a certain period; otherwise they will not be able to assimilate the new activities and take over management responsibility. FEDECACES position has been to stimulate new investments using the cooperative as the mechanism (i.e. henequén, cattle, crops). The need to plan these activities and their advisory assistance has been recognized by both groups. Still, however,differences in philosophy occur. FEDECACES has criticized the new feed concentrate facility as too small, lacking a molasses tank, and lacking protection for the hammermill in the rainy season. This point of view is consistent with a desire to maximize investment possibility instead of scaling it to the possibilities and needs of the group. There is no valid economic reason why facilities cannot be expanded as capacity increases nor that molasses barrels be used instead of a tank, nor a protective covering over the hammermill rather than an extra wall. The fact that FEDECACES and Technoserve are collaborating, however, will tend to reduce their communications and philosophical differences, and should lead to greater mutual productivity. In fact, the direction of both organizations have met to plan collaborative tactics in the San Alejo Project.

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VII. DESCRIPTION OF NEW POTENTIAL PROJECTS

1. ACOMICES (Asociación Cooperativa de Ahorro, Crédito, Consumo y Producción de la Iglesia Evangélica de El Salvador Misión Centroamericana de R. L., San Salvador).

A. Summary of Activities

This recently formed cooperative for members of the many evangelical church

groups located throughout El Salvador has in several short months already added over 100 new members who have capitalized the cooperative with about ₡40,000 of equity contributions. The leadership is actively seeking new project ideas and requested Technoserve assistance to study the feasibility of a broiler fattening project. Initial analysis carried out by the firm indicates that initial elevated fattening requirements (above the group desires) to reach breakeven profitability and marketing problems do not offer a viable alternative for the group. Technoserve is exploring alternative possibilities at present with ACOMICES.

B. Beneficiaries

This group has the potential to become one of the largest cooperatives in El Salvador. Searching for suitable activities to achieve member benefits will be difficult because the group is based on a religious rather than specialized economic orientation, and the diversity of member desires will make it difficult to find a productive project activity having a common interest of the majority. Technoserve will exert all effort, however, to find a common denominator, given that the size and low income levels of most members makes it an ideal group for achieving substantial impact possibilities.

2. Other Potential Projects

Groups which were contacted in 1979, but which for one reason or another were unable or unwilling to collaborate with Technoserve during the year will be revisited to determine if issues or problems which impeded advisory services have been overcome. These include cooperative groups in Corinto (cattle development); Cantón Lourdes (cattle and poultry development); Garita Palmera (industrial oilseed production); Coatepeque (various activities); Feed Concentrate Service Company, Osicala (sisal production); and La Virtud (cattle

development).

Other new project ideas, some referred by El Salvadorean institutions, such as B.F.A., and INSAFI are also under preliminary review. Among these are very large project possibilities having national impact and affecting thousands of low income people.

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VIII. INSTITUTIONAL COLLABORATION

Technoserve/El Salvador maintains ongoing institutional relationships with over a dozen national and international development, financial, and regulatory organizations. Program policy has dictated that Technoserve should complement its in-house advisory resources and advisory assistance whenever and wherever possible through coordination with relevant external institutional personnel. Technoserve advisors work with institutional representatives to carry-out necessary changes and reforms prior and subsequent to the start-up of Technoserve assisted enterprises.

The institutional collaboration of Technoserve with other agencies, however, goes well beyond the activity level in field projects. In several instances, as a result of dissemination of information on enterprise development by Technoserve advisors to institutional representatives, the latter have initiated policy level changes within their own organizations, thus, illustrating an institutional respect for Technoserve's work and knowledge. A discussion of activity level collaboration and external institutional policy changes is presented below for several representative cases.

Banco de Fomento Agropecuario - (National Agricultural Development Bank).

Three Technoserve assisted projects have been financed through the Agricultural Development Bank and four more are currently being transacted.

Technoserve advisors have, in most cases, been able to collaborate effectively with B.F.A. agents both at the field and head office levels.

The collaboration of B.F.A. representatives in Technoserve assisted enterprises, however, has resulted in substantial changes in B.F.A. policy vis-a-vis Technoserve. Initially, B.F.A. head office representatives were opposed to financing the several feed concentrate production and marketing enterprises, because F.A.O. representatives advising B.F.A. preferred the silage system of feeding cattle in the dry season. Once it was explained however, (using COPIGAC as an example) that the farmers did like and used the cooperative produced concentrate, B.F.A. agreed to finance these projects. They became convinced that it was more important that the farmer receive benefits through the developed enterprise even though they were not in complete agreement as to the preferred method for achieving this.

Later, as the B.F.A. financed- TNS assisted enterprises began operations (on schedule, and with plenty of local enthusiasm), B.F.A. further enlisted Technoserve's help by submitting a list of cooperative enterprise referrals for Technoserve to investigate (see output section) as project possibilities.

Currently, with several new cattle projects being negotiated for financing with BFA the institution has contacted Technoserve to determine if the program could benefit by the provision of an ongoing raw material purchase credit to cattle enterprises receiving Technoserve assistance. This would be a new type of credit not here-to-fore available to cooperatives. B.F.A. has further insinuated to Technoserve that it might be interested in having the program undertake feasibility studies for several enterprise ideas submitted to that institution. These ideas, of course, are intended to provide ongoing

and efficient use of B.F.A. funds and hence are in B.F.A.'s own interest. That they have recognized the value of ongoing technical assistance in project investigation, implementation and operations assistance, however, represents a distinct change in B.F.A.'s previous application of ongoing field assistance in combination with credit provision.

FEDECACES - (National Federation of Savings and Credit Cooperatives).

Two Technoserve assisted projects have been financed through FEDECACES as Federation Affiliated Cooperatives. In earlier relationships, although FEDECACES was always willing to help finance the Technoserve projects, the federations' policy of requiring individual cooperative credits to be 10% capitalized on FEDECACES account (in effect the cooperative received ₡9 for each ₡10 requested, paying interest on the ₡10) as a 6% interest bearing reserve against possible defaults by this or other member cooperatives, had resulted in an extremely heavy financial burden and tie up of liquidity for the Technoserve assisted cooperatives, thus contributing to the lack of project profitability. During subsequent years of Technoserve advisory services, FEDECACES management was able to see that the prudent technical/managerial advisory services provided lowered the risk for these assisted coops; thus FEDECACES agreed to waive the capitalization requirement for cooperative credits for both projects, ACACYPAC and ACACCPCSA.

Instituto Regulador de Abastecimientos - IRA - (National Supply Regulation Institute).

One of IRA's basic functions is to purchase grains from low and medium income farmers at preferential prices. The farmer, while appreciative of the improved price received for his crop was not always pleased by the long delays in payment caused by a cumbersome system of quality control and clerical

work. In spite of offering subsidy prices, IRA was well below it's 1978-79 goal for rice purchases, when Technoserve advisors to the ACACYPAC rice mill helped negotiate a delivery of over 15.000 hundredweights of local farmers rice, thus helping IRA towards acnievement of its purchase goal for rice. Recently, in negotiating the sale to IRA of the 1979-80 rice harvest of which over 26,000 hundredweights had been purchased from and directly paid out to local farmers - ACACYPAC's Technoserve advisors requested that IRA increase the price per unit paid to ACACYPAC for milling and transport services over that paid in 1978-79, arguing that increased salaries and energy costs made such services unprofitable. IRA politely denied this request in October. Soon, however, other private millers were also asking IRA for the same increases or higher in service prices that Technoserve's advisor for ACACYPAC had earlier recommended. When it became apparent that an across the board price adjustment would be necessary, IRA management called ACACYPAC to acknowledge a belated agreement with the initial price offering, and met with the Technoserve advisor to review the methodology used in calculating the ACACYPAC service price offer, which they adopted. Although this has not been approved yet by the IRA Board of Directors, due to the political situation in the country which has crippled the ability to achieve meeting quorums, the fact that IRA's management did belatedly recognize that the initial price offer of ACACYPAC was a fair and acceptable one has increased its respect for Technoserve's advisory work and vision.

Ministry of Agriculture/Agricultural Economics Division

As a government agency charged with setting quotes for and distributing nationally select agricultural products, such as cottonseed meal and molasses, this agency has played an important role in the provision of these raw materials

to Technoserve assisted feed concentrate projects. The setting of quotas to the individual cooperatives has historically been a chancy operation, in that each cooperative had to guess estimate the projected raw material consumption of its members. In many instances, quotas assigned bear an unbalanced relationship to farmer demand for these materials. Technoserve advisors, working with Ministry officials, were able to revise estimate totals for the Technoserve assisted cooperatives and help clear away other bottlenecks such that necessary raw materials were allocated to these. The Agricultural Economics Division has additionally offered to cooperate with Technoserve in registering all assisted cooperatives so that these may be eligible for the full tax, import and other benefits which the law provides for cooperatives but which had not reached many of these due to lack of personnel, and communications difficulties.

Ministry of Planning

The coordinating El Salvador Government agency for Technoserve's program work and its chief national donor agency, MIPLAN has historically occupied a central position in the governments developmental efforts. This central position has required MIPLAN officials to interact with many development sectors at once; a result of this necessary interaction has been the difficulty of MIPLAN officials in distinguishing the character of Technoserve's program from that of other development agencies and even from one its own program functions, which is to elaborate feasibility studies lacking sponsor groups for execution by other private and public sectors. Until the recent government change, top MIPLAN officials had believed that it was Technoserve's role to do studies first, and look for sponsoring groups after feasibility had been demonstrated. Although Technoserve has been long emphatic in explaining

to officials why it requires a sponsor group first (to obtain financial and human commitment and to assure that the project idea is initiated by and/or consistent with the group experience), many support MIPLAN staff personnel never had the opportunity to receive this information; as a result, they had a confused picture of what Technoserve was supposed to do.

Recognizing this confusion the MIPLAN Executive Projects Director (Ing. Bayardo Gómez) invited Technoserve personnel to present its project procedures to the entire staff of the Projects Division. This was a opportunity which Technoserve gladly accepted and presented during 4 two hour morning sessions, thus allowing ample time for questions from staffers , and a more detailed presentation of why Technoserve's experiences had led them to adopt such procedures.

The recent follow-up to these presentations have been encouraging. The MIPLAN liaison representative to Technoserve visited three of the new cattle projects being installed (San Alejo, Santa Rosa de Lima, Joateca), and after talking with group representatives of these cooperatives, returned with a highly favorable report of the ongoing collaboration that Technoserve had been able to achieve with these groups, and of the latters satisfaction with Technoserve advisory services.

These institutional collaborations are examples (others include INSAFOCOOP, CAESS, CEL, Treasury Ministry, ISTA, A.I.D., Episcopal Church, Ministry of Education) which demonstrate that Technoserve's program has achieved a visibility and a respect among El Salvadorean and other government agencies, and bodes well for the future development of a national Public Benefit Corporation which will succeed the Technoserve Program.

Technoserve Promotion Committee

The formation of a Promotion Committee of national private and public sector representatives in order to aid in the planning and execution of the turnover of Technoserve's El Salvador program to a national Public Benefit Corporation (which would carry out activities now performed by Technoserve), represents a multi-institutional representative collaboration. The turnover of the Technoserve program to a national designated entity arises from a stipulation of the technical assistance agreement signed between Technoserve and the Ministry of Planning in 1975 (then the National Planning Board), in which Technoserve agreed to a local indigenization of its program after 5 years of operation, if there did not exist mutual reasons for renewing the technical assistance agreement. The Promotion Committee currently is composed of 8 representatives from the legal, agricultural, public financial, commercial, industrial, academic and government regulatory sectors, who, while acting in a personal capacity, do in effect, reflect the viewpoints of their individual institutional areas. The Committee has worked closely with Technoserve management in presenting to the Ministry of Planning legal options for the sucessor entity (from which the Public Benefit Corporation emerged as most appropriate), setting out presenting a goals statement, work plan, draft budget for Technoserve's 1980 operations and, formally requesting a 5 week extension of Technoserve's agreement with MIPLAN and an increased MIPLAN contribution to Technoserve's budget for 1980. MIPLAN, for its part, has indicated agreement in principle for the turnover, and endorsed extending the agreement through 1980 and will study an increase in Technoserve's budget allocation for that year. Verbal indications to date are that MIPLAN will fund a very high percentage of the budget increase requested.

Current Promotion Committee activities include adoption of legal by-laws for the Public Benefit Corporation and contacts with appropriate funding sources. Due to the abrupt change in government officials at the end of December and general political instability, this work has been delayed. Conditions permitting, it will be resumed. If the currentunstable political conditions continue, however, Technoserve will be required to review its turnover program in line with the new technical assistance agreement option

The necessary broad political and financial support from national sectors is in a state of flux, uncertain or divided as to the direction which the current government will take. Technoserve can only be an observer in this dynamic process, as its non-political nature and policy dictates. Given a better determination of the political environment, Technoserve will be able tc render an appropiate decision on the options available to maintain program activity in El Salvador.

APPENDIX I

MAP OF THE REPUBLIC OF EL SALVADOR

WITH THE LOCATION OF PROJECTS ASSISTED

BY TNS IN 1979

LOCATION OF PROJECTS ASSISTED BY INS IN 1979
(A) Projects with preliminary investigation in 1979
(B) Projects with feasibility Studies-New Projects 1979
(C) Implemented Projects under assistance
(D) Implemented Projects, turned over in 1979
Location of the Project (s)

MAPA REPUBLICA DE EL SALVADOR.

APPENDIX II

BIOGRAPHICAL SKETCHES

(1979)

FRANCISCO LINO OSEGUEDA J.
Country Program Director
El Salvador

Mr. Osegueda joined Technoserve's staff in November 1979 as Contry Program Director in El Salvador. Mr. Osegueda has served a distinguished career in teaching administrative and agro-technical posts.

Mr. Osegueda was born in El Salvador on June 14, 1937. As his father being a Diplomat, he went through Elementary School and High School in different countries (Brasil, Guatemala, El Salvador and Costa Rica). He received his first Ag. Technician degree at the Escuela Agrícola Panamericana in 1958, as the top graduate in the class and was granted a scholarship sponsored by his school and Rockefeller Foundation. At the University of Florida, he obtained the B.S.A. degree in Animal Science with honor in 1960 and again received a scholarship, this time from the University, to attend Graduate School until until complete fulfillment for the Master's Degree, conferred upon him in 1961, with a major field of training in Animal Nutrition and a minor in Biochemestry.

In September 1961 he joined the Escuela Agrícola Panamericana, Honduras as member of the Animal Industry Division Staff, as Assistant Professor and Head Department of several Units; in 1963 he was promoted to Associate Professor.

In September 1965, Mr. Osegueda was appointed Director of The National School of Agriculture of El Salvador until 1969; in the meantime he prepared the "Program for the Enlargement and Improvement of the National School of Agriculture (U.S. 1.8 million dollars), which was financed by World Bank and the Government of El Salvador. In September 1969 he was appointed Undersecretary of Agriculture and Livestock, position held til October 1973. During this time the institutional reorganization of the Agriculture Sector was analyzed; studies and projects were proposed and accepted; in 1971, the reorganization began on a 4 year plan, with emphasis in education, research, credit, marketing, extension and promotion, in order to better assist low income people of rural areas, due to lack of opportunities and generally improve agricultural development in El Salvador.

From October 1973 through January 1974 he was in charge of reviewing the policy and institutional work and organization of the Institute of Rural Colonization, now the Salvadorean Institute of Agrarian Transformation. He presented his report to the President and then retired from the Government.

From 1974 through October 1979 he worked as Private Agriculture Advisor. In March 1979 he was invited to become member of the Promotion Committee for the Transfer of the Technoserve's Program to a Salvadorean Entity.

Mr. Osegueda has been disthinguished with several honors: Diplomas, Gold Medals, Honorific mentions, etc. in his career and has published some documents and research data.

Mr. Osegueda has lived in and visited several countries.

He speaks Spanish, English and some Portuguese.

ROGER H. ANDERSON

ASSOCIATE COUNTRY PROGRAM DIRECTOR

EL SALVADOR

Mr. Roger Anderson was Associate Director for Technoserve's El Salvador Program, in that position since March, 1977, acting primarily as subordinate to the Senior Project Advisor in matters of planning, organization and control. He began working with Technoserve as its Darien home office in February, 1976 as a Program Officer/Business Analyst providing technical support for overseas programs. In September 1979 he was appointed Acting Director until succeeded in November 1979.
Prior to his service with Technoserve, Mr. Anderson acquired broad experience in the fields of planning, evaluation and organizational development during previous years of service with several domestic and international organizations.

In service to social action agencies, he counts the following experiences: In 1975 - 1976, working as a staff consultant for Development Associates, Inc. responsible for conducting needs assessments and conferences with key child abuse and neglect specialists to formulate a two-year training and technical assistance strategy for public and private agencies in the New England region; in 1974, working as a site coordinator for the Age Center of Worcester, Massachusetts involving a city wide elderly nutrition program; and, in 1970 - 1971, as a Relocation Officer with the East Rochester, New York Urban Renewal Agency.

His administrative and technical experience in business institutions includes a 1971 - 1974 stint as Chief, Department of Financial Studies and Statistics for the National Teacher's Credit and Savings Cooperative in Santo Domingo, Dominican Republic. This work was sponsored by the U.S. Peace Corps. He also worked during 1968 - 1970, as a financial analyst for the United Shoe Machinery Corporation in Boston, Massachusetts.

Mr. Anderson graduated with honor in 1971 from Northeastern University, Boston, Massachusetts receiving a BS in Economics. He also attended the Puerto Rico Learning Center in 1971 in an intensive Spanish and Cross - Cultural Studies course.

Mr. Anderson is fluent in Spanish

ENRIQUE CRISTI

Country Program Director
El Salvador

Mr. Enrique Cristi joined Technoserve in May 1975 as Country Program Director for Technoserve's new country program in El Salvador. Mr. Cristi came to Technoserve with extensive experience in the development of small and medium size industry.

Mr. Cristi was born in Chile on November 30, 1934. He received his bachelor's degree in Economics and Commercial Engineering from the University of Chile in 1960. Mr. Cristi pursued postgraduate studies in statistical sampling and methods study. In 1966 he was awarded a fellowship by the Organization of American States and the Dutch Government to study Industrial Development Programming at the Institute of Social Studies at the Hague, later graduating with distinction.

Mr. Cristi joined the Industrial Engineering Department of Pacific Steel Company in Concepcion, Chile as an engineering analyst in 1961.

In 1963, Mr. Cristi joined the National Development Corporation (S.C.T.) which is responsible for the general development of small and medium scale industry in Chile. As Chief of the Industrial Project Department, he was responsible for controlling the preparation of feasibility studies in industiral development throughout Chile. In 1966, Mr. Cristi was named Chief of the Management Training Department responsible for the training of over 2,700 industrial managers and the preparation of manuals for their use. Named Deputy Technical Manager in 1968, Mr. Cristi supervised the Departments of Industrial Projects, Material Supply and Marketing, Technical Aid to Industry and Management Training. In 1971, he became Director of the Technological Laboratories and Workshops in the Technical Service Branch of the National Development Corporation. Mr. Cristi supervised professionals in the areas of woodworking, machinery, metallurgy, chemistry and leather processing.

Mr. Cristi joined the United Nations Development Organization in May 1973 as an Advisor in the Small-Scale Industry Sector assigned to Tegucigalpa, Honduras. He advised the Honduras Economic Planning Council and the Ministry of Economy on a program to assist the promotion and establishment of small scale industries. He also assisted the Centro Cooperativo Tecnico Industrial in promoting and implementing projects for small-scale industries formulated by the Institute. Mr. Cristi also trained counterparts and made recommendations for further technical assistance needed by the projects.

Mr. Cristi speaks English and Spanish.

Mr. Cristi resigned on September 15, 1979 to return to the United Nations as an advisor in the Small-Scale Industry Secot assigned to Tegucigalpa, Honduras.

7/11/75
Technoserve, Inc.

CARLOS ABARCA GOMEZ
Project Director
El Salvador

Mr. Carlos Abarca joined Technoserve El Salvador in April, 1978, as Project Advisor; in July 1979 he was named Project Director due to his high merits and capabilities.

Mr. Abarca was born in June, 1935, in San Rafael Cedros, Department of Cuscatlan, El Salvador.

He obtained his Business Administration degree from the University of El Salvador in 1966 and later attended graduate school at the University of Chile and the University of Paris, France, obtaining a degree in Financing and Industrial Costs in 1969.

After such achievement, he begun studies of Public Accounting at the University Rafael Landivar in Guatemala and graduated in 1979, after completing his career at the Central American University José Simión Cañas, San Salvador. As a complement, Mr. Abarca graduated with a major field in Mathematics and Physics and has assisted to several seminars in the area of finances.

In 1969 he joined the University of El Salvador Staff, initially as professor and later promoted to the position of Head Department of Business Administration and up to the Dean post of the Faculty of Economic Sciences, the latter from 1970 - 1971.

In 1972 he became Director of a Private Office of Consulting in which he had a good experience in economical analysis of industrial companies related to soap, drugs, milk products and fishery.

In 1973 the Interamerican Bank of Development contracted him as part advising group for the Institute of Agricultural Development and Industry in Puerto Principe, where he worked in the area of Credit Planning and Administration and diagnosis of industrial interprises. From 1974 through 1976 he was named member of the advising team of the Technical Division fo the Central American Institute of Investigation and Industrial Technology (ICAITI), Guatemala. In 1977 he became the Financial Manager of cotton integrated textile industry in El Salvador.

28/2/80
CAG/agra

MARIO A. GANUZA
Projects Director
Technoserve, Inc.

Mr. Ganuza joined Technoserve, Inc. on April 1979 as Projects Advisor in the Staff of El Salvador Program; on November 1979 he was appointed to the position of Projects Director.

He was born in El Salvador on January 19th, 1945; grew in San Salvador where he attended Elementary and High School. He graduated as a BS Civil Engineer in 1979 from the University of El Salvador, and he obtained his master in Business Administration in 1971 from the Central America Institute of Business Administration (sponsored by Harvard Business School). Also, he had studied at the level of Demography Junior Expert at the Latin American Demography Center (CELADE, United Nations) and besides he participated in several courses and seminars related to Industrial Sociology.

He was the co-author in 1968 of a document entitled "National Inventory of Natural Resources, Analysis and Evaluation" which was accepted as his Graduation Thesis for the University of El Salvador; in 1969 he wrote a paper entitled: "Introduction of Demography on the Urban Development of the Metropolitan Area of San Salvador" for the private library of CELADE. In 1978, he wrote two papers which were included in the IV National Seminar of Engineering, in San Salvador, whose titles were: "Financial Management for Public Investment Projects" and "A control System for a Construction Company" and he also wrote another paper entitled: "Computer, a Tool to Achieve Better Performance of the Construction Companies in Central America", which was included in the II International Symposium of Engineering.

In 1963, 1964 and 1965 the School of Engineering of the University of El Salvador honored him for his high academic records; in 1969 the Salvadorean Association of Engineers and Architects honored him because of the technological improvement that he gave to this professional association; In 1970 the School of Engineering of the University of El Salvador honored him again because of the outstanding thesis he presented prior to his graduation.

On November 1971 he was hired for Corporación de Inversiones Diversas (CID) a Nicaraguan Holding Company which owns majority of the stocks of $20,000,000 Sales Nicaraguan Diversified Enterprises; where he worked as a: two months Financial Analyst at CID (Holding) (1971); six months General Manager Assistant at Bienes Raíces, S.A. (Real Estates) (1972); seven months Vice-Manager at Inmobiliaria de Ahorro y Préstamo, S.A. (S&L) (1972); three months Board Director's Delegate for the negotiation of 1000 claims and reinsurance payment subseguent Managua earhquake at Inmobiliaria de Seguros, S.A. (Insurance) (1973); two years Business Manager at Sovipe Ingenieros, S.A. (construction) (1973-1975); one year General Manager at Promoción y Venta de Inmuebles, S.A. (housing) (1975-76). Six months Acting Manager at CID (Holding) (1976). He resigned after that becoming a Private Business Consulting with clients in Costa Rica, Nicaragua and El Salvador, for three years (1976-79) until he decided to join Technoserve, Inc.

Mr. Ganuza speaks English.

JORGE ARAUJO
Project Advisor
El Salvador

Mr. Jorge Araujo joined Technoserve, Inc. in March 1979 as Project Advisor.

The First assignment was to study the factibility of stablishing a Service Company to support the production of cattle feed. There were 4 cooperatives involved in this kind of business under TNS supervision. During that time he also served as Social Outreach Agronomist for TNS.

For the rest of the year Araujo was assigned as Project Supervisor for ACASJMRL, ACOOPARSANGE, and ACOPADEC.

Mr. Araujo was born in Zaragoza, which is a small village in La Libertad, El Salvador on Dec. 29, 1934.

He has received the following degrees and diplomas: Elementary School Teacher on 1953. Proffesor of High School on 1954. Agronomist, Panamerican Agricultural School, 1959. B.S.A. University of Florida 1964. Asian Institute of Management, Manila, Phillipines, 1975. Diploma Administration of Agricultural Projects, PAMDEM Program. During 1955 and 1956 he served as Professor at the"Plan Basico de Orientación Vocacional", in Quezaltepeque, La Libertad.

Upon his return from the Panamericana Agriculture School in Honduras, he served as Ag. Extensionist for three years, at the Ministry of Agriculture and Livestock in El Salvador.As soon as he received his B.S.A. he returned from the U.S.A. to work as professor at the "Escuela Nacional de Agricultura" for two years, 1965 and 1966, later on, he joined the Standard Fruit Company Staff in La Ceiba, Honduras as "Agricultural Scientist". After working for one year in the research Department in that Company, he was promoted to the position of District Superintendent in the Honduras Division in 1968, and Zone Superintendent in Costa Rica, 1970, and 1971.

In 1972, he worked in sales representative for FERTICA in El Salvador by the end of that year, he was offered the position of "Training Director" for the Standard Phillippines Fruit Corporation" based in Davao, Phillippines.

After 3 years of work in the Middle east, Mr. Araujo was promoted to Farm Manager and transfered to the Costa Rica Division. From Costa Rica he moved back to El Salvador and was hired by Technoserve Inc.

28/2/80
JA/agra

JOSE A. CABEZAS

Project Advisor
El Salvador

Mr. José A. Cabezas started with Technoserve on March, 1977 as Project Advisor for the El Salvador Program.

Mr. Cabezas was born in San Salvador on August 23, 1935. He graduated as Agronomist at Escuela Agricola Panamericana in Honduras in 1958. In 1972 he received a Bachelor of Science Degree at the Politechnical University of Pomona, California.

His first job was as Agricultural Manager with a private dairy industry in Sonsonate during a year a a half. In 1960 he joind Extension Agricola of El Salvador as Agent for two years; then he joined Escuela Nacional de Agricultura working as Teacher of Agriculture in the field of Horticulture; afterwards he was promoted supervisor of the Horticulture Department and then Director. In order to improve the efficiency of work at the school he studied Methodology for the Vocational school for one year at the University of Puerto Rico and in 1969 he initiated his studies on the Agricultural Development in California, USA.

For a period of three years he worked as Manager with private enterprises dedicated to the development of cereals, dairy cattle and coffee. Before joining Technoserve, he worked at the Sociedad Agricola Eva C. de Meza Ayau in San Salvador.

His senior Project Thesis was "ENVIROMENTAL CONDITIONS AFFECTING TOMATO PRODUCTION IN A GREENHOUSE". Polythecnic University, Pomona, Cal.

ADRIAN E. CHACON

Project Advisor

El Salvador

Mr. Adrian E. Chacon joined Technoserve, Inc. in September 1975 as Project Advisor for the Technoserve program in El Salvador. Mr. Chacón comes to Technoserve with a great deal of experience in small project development, especially in the agri-business field.

Mr. Chacon was born in El Salvador, Central America in February 1928. He received his agronomist degree from the Pan American School of Agriculture at El Zamorano, Honduras in 1947. In 1969 he received his Bachelor of Science Degree from the University of Georgia. Mr. Chacón pursued further education, receiving his Master of Science in Agricultural Economics from the University of Georgia in 1974.

Mr. Chacón's first position was as Farm Manager of a dairy farm, working for an eight-year period. In 1956 he joined the Extension Service in El Salvador as a County Agent for one year and as a District Supervisor for four years. He left the Extension Service to be enrolled as Extension Teacher at the National School of Agriculture. After being promoted to head of the Agronomy Department, Deputy Director and Director of the School, he resigned to continue his post-graduate studies. Returning to the country in June, 1974, he was appointed by the Ministry of Agriculture as the head of the "Multiple Cropping System" Program in El Salvador until he joined the Technoserve program.

Mr. Chacón conducted the feasibility study for the "Chalatenango Cattle Development Project" to be implemented with around 700 small size cattle and hog raisers. Also, he conducted the "Rural Labor Employment Study" to be used in the elaboration of the "Five Year Development Plan -- 1973-1977" of the Republic of El Salvador.

His Master's thesis is "Factors Affecting the Price of Corn in El Salvador" -- 1974, University of Georgia.

He speaks English and Spanish.

May 1976

JAIME CHACON PLATERO

Project Advisor
El Salvador

Mr. Jaime Chacon Platero was born in Santa Ana in July 1929. He obtained his degree in Agronomy from the Escuela Panamericana of Honduras. He went to Puerto Rico and the USA for post graduate study in agriculture. He also carried out postgraduate work in Italy, Costa Rica and Mexico in the area of Rural Sociology and Agrarian Reform.

Mr. Chacon Platero joined Technoserve/El Salvador as a Project Advisor in January 1976.

Mr. Chacon has vast experience in agriculture. He worked for the Agricultural Department as Agent, District Supervisor, Sub-Director and Director. Here he had his first experience in rural development, being one of the pioneers of this program in El Salvador. He worked in the development of rural communities, in the organization and implementation of cooperatives and also in the administration, budgeting and supervision of the Rural Development Project.

He was appointed by the Instituto de Colonizacion Rural in 1961 to help organize the agricultural, cattle and handicraft production in the rural communities and later promoted to General Manager. Mr. Chacon then obtained a loan for three million dollars to purchase and sell land and financial aid for 1.5 million dollars to build roads, schools and prepare land.

During 1973 - 1975, Mr. Chacon worked for the Department of Evaluation and Formulation of Projects of CONAPLAN where he participated in the evaluation and implementation of the Cultivation Project of Basic Grains to help 5,000 families in cooperation with the Feed the World Program of the U.N.

In the balsam growing area of El Salvador, Mr. Chacon developmed a program to improve this area which benefited 3,000 families. He also collaborated in the Industry of Evaluating Fertilizers in El Salvador as counterpart to Mr. Gapp, a world consultant in this field from the U.S.A.

Mr. Chacon speaks Spanish and has a fair knowledge of English.

December 1977

RAMON MIGUEL ROSALES
Project Advisor
El Salvador

Mr. Ramón Miguel Rosales Martínez joined Technoserve/El Salvador in January 1980, as Project Advisor with responsability in identification, preliminary studies and implementation and evaluation of new and ongoing projects.

Mr. Rosales was born in June 1946 in the Department of San Salvador, Mejicanos City.

Mr. Rosales received the degree of Agricultural Engeneering with a major field in Animal Science in 1974, from the University of El Salvador;previously he attended the Universidad Austral of Chile in 1970 for a course in Dairy Products, sponsored by FAO. After completing his degree at the University of El Salvador, he went to Graduate - School at the "Instituto Agronomico Per L'Oltremare" of Firenze, Italy where he received a diploma in Aerofotogrametry Formation and Foto-Interpretation in June 1977.

From June, 1967 through January, 1969, Mr. Rosales worked as Technical Assistant in the General Direction of Agricultural Research of the Ministry of Agriculture and Livestock in the plant pathology area. In 1969 he worked for PROGAN, EL SALVADOR in sales promoting of agricultural inputs of veterinarian nature, mainly for poultry. In the same year he joined the Direction of Livestock of the Ministry of Agriculture as Supervisor of Foment; in 1974 was promoted to Head of the Dairy Product Control and Sanitation Unit. By the end of the same year he moved to the Division of Veterinary and Agricultural Chemestry of PFEIZER, S.A. representation in El Salvador, as Sales Manager. Later Mr. Rosales returned to the Ministry of Agriculture and worked in the Direction of Economics as technical agricultural analyst in the statistical control operation.

He has worked as advisor in private feed mills in El Salvador.

28/2/80
RMR/agra

GODOFREDO ACEVEDO AGUILAR

Project Advisor - El Salvador

Mr. Godofredo Acevedo joined Technoserve/El Salvador in January 1977 as a Project Advisor. Mr. Acevedo brings to Technoserve several years of experience in public accounting in El Salvador.

Mr. Acevedo was born in E. Salvador in July, 1943. He received a degree in Public Accounting in 1963. In addition, Mr. Acevedo has taken correspondence courses at the University of La Salle in Argentina in the following areas: principles of bookkeeping and general practices, modern accounting and costs, auditing, business codes, reforms and applications.

Prior to his work with Technoserve, Mr. Acevedo worked in the following positions: in private accounting practice, as an internal auditor for Almacenes Vidri and for Corporación Industrial Centro Americana, as assistant to the general accountant for Embotelladora Salvadoreña (Coca Cola), as a cost accountant for Caribe Motor Co., as an assistant in the cost department of the Hotel El Salvador Intercontinental and as an assistant auditor in a private accounting firm.

As a Project Advisor on Technoserve's staff with accounting experience, Mr. Acevedo will assist Technoserve-assisted projects in accounting and financial control.

December 1977

CARLOS RAMON FLORES

Mr. Flores joined the Staff of Technoserve, Inc. since November 1978, as a Project Advisor.

He graduated as a bookkeeper in 1960 an as an accountant in 1966 both with the highest national records. In 1978 finished his studies on BA - Business Administration at the Catholic University of El Salvador. At present he is working in his graduation thesis. He has had complementary studies in Direct Costing, Business Decisions, Human Relations, and many other topics.

He started working for Sherwin Williams of El Salvador as a Sub-Accountant from 1960 to 1969, becoming the internal auditor for the Central American branches. After that he changed to GINSA of El Salvador, a subsidiary of Good Year, as Administrative Manager in 1969, being promoted in 1972 to the position of Regional Manager for sales in El Salvador, until 1975. Then he changed to the Salvadorean Foundation for Development and Minimum Housing, as the Controller, remaining in this job until he accepted to join Technoserve, Inc.

EDILBERTO MIRANDA

Project Advisor

El Salvador

Mr. Edilberto Miranda joined Technoserve El Salvador in November, 1978.

Mr, Miranda studied at the Industrial Technical Institute of El Salvador and received the degree of Industrial Bachelors with a major in mechanics in 1965. Later he continued studies at the Faculty of Engineering of the Central American University José Simeón Cañas of El Salvador and obtained the corresponding degree of Mechanical and Industrial Engineer in 1971.

In 1970 he worked in a plastic industry in steps and operations. In 1971 he worked in the Administración de Acueductos y Alcantarillados (ANDA), institution in charge of potable water supply in the country, doing an excellent work. In 1972 Mr. Miranda joined a technical consulting office (SIETI), as Technical Manager.. Later, form 1973 through 1975, he worked Head of Projects in IMSA (Metallic Industries, S.A.), and prepared several works of various nature in this company. Part of 1975 and 1976, he joined Fábrica Superior de C.A. where Mr. Miranda performed a good job in different positions.

In 1977 he worked for the Ministerio de Obras Públicas as Head Department of Maintenance and Machinery Operation.

In Technoserve, El Salvador, Mr. Miranda is responsible for all equipment and machinery installation, as well as maintenance of equipment.

ERNESTO TORRES CHICO

Project Advisor

Mr. Ernesto Torres Chico joined Technoserve, Inc, El Salvador, in August, 1979, as Project Advisor with a great deal of experience in analysis of projects, credit and technical assistance.

Mr. Torres was born September 1944 in Cojutepeque, El Salvador. He received his degree in Economics from the University of El Salvador in 1971; in August, 1974 he continued in the Graduate School of the "Instituto de Estudios Superiores en Administración" (I.E.S.A.), in Caracas, Venezuela, and was conferred the degree of Master in Administration with a major field in Latin American Economic Integration, in March, 1976.

From October 1968 through March 1972, he worked as analyst for credits at the Salvadorean Institute of Industrial Development (INSAFI) and was responsible for economics-financial evaluations for new or existing projects. In 1972, Mr. Torres was part of the Staff of the Planning and Technical Assistance Office of the Ministry of Economics. In March, 1974 he worked as economist for the Salvadorean Institute of Turism; in April, 1976, he joined the Ministry of Planning and Coordination to work in the area of International Commerce and Economic Integration. In June, 1977 he joined the Salvadorean Institute of Foreign Commerce as Head of the Commercial Policy Unit and Financial Analyst. In 1978, he was promoted to Head Department of Planning and Assistance.

He has been professor in the courses of "Introduction to the Economic Science";"Political Theory of the Economical Integration" and "International Commerce" at the University of El Salvador.

In Technoserve, El Salvador, he is responsible in the preparation of pre-feasibility and feasibility studies.

APPENDIX III

PHOTOGRAPHS OF SOME OF THE CONSTRUCTION ACTIVITIES OF THE JOATECA PROJECT.

2. Placing the stone foundation, CACPA (Joateca) feed mill plant. Sponsor group pictured provides construction labor.

3. Member s cut wood for building drying-out CACPA

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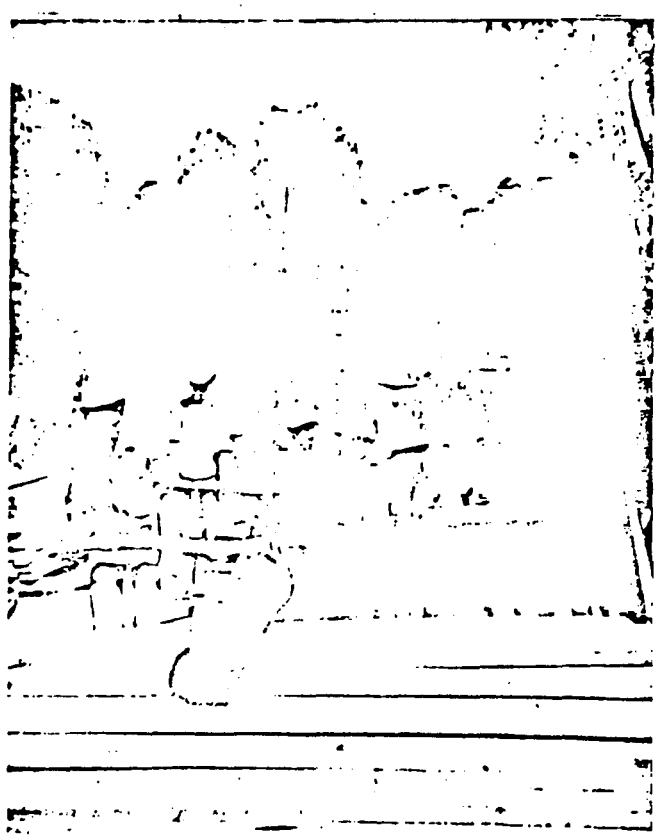
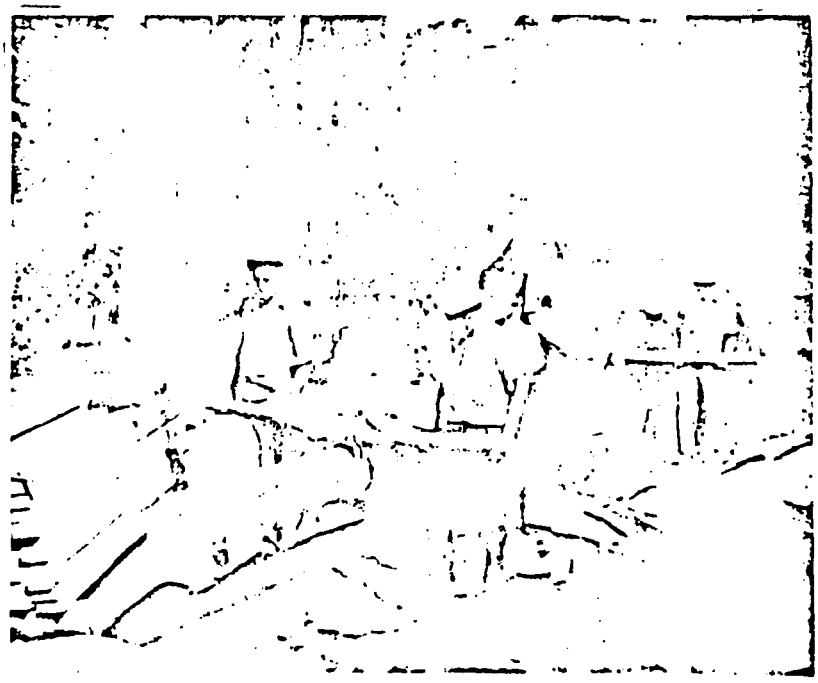


4. Using traditional, but effective construction thec nology (without mechanical a ssistance) CACPA

5. More construction work - CACPA



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6. Preparation for setting post, also by hand. CACPA

7. Post in position and plumbed. CACPA

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8. Concrete base finishes post installation. CACPA

9. AID donated equipment already installed. CACPA

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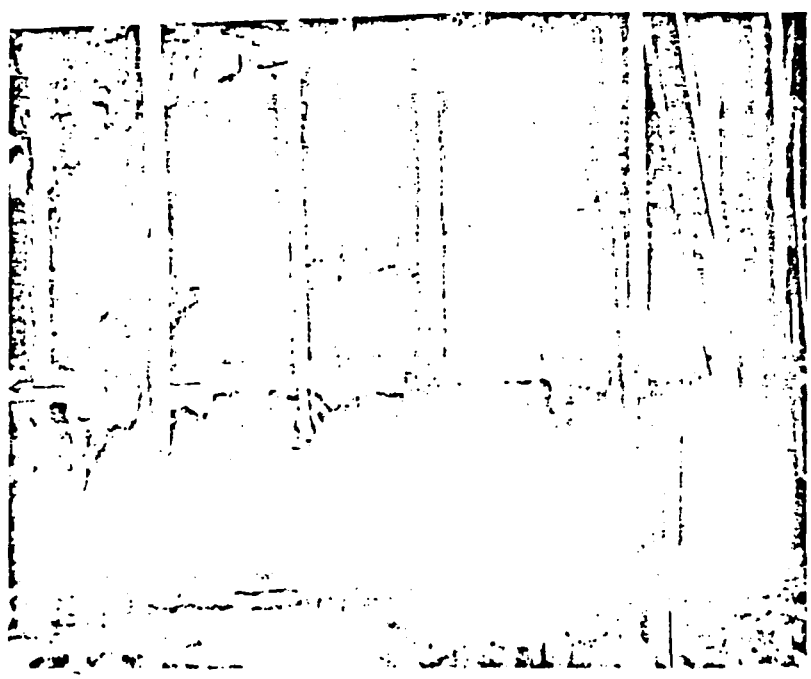

10. All Support posts installed. CACPA

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