

EVALUATION REPORT NO. 11
Villa Hermosa Cooperative
Peru

SUMMATIVE EVALUATION

Villa Hermosa Community-Based Enterprise
Peru

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1982 - 1985

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The Evaluation Series

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INTRODUCTION

This is an English-language summary of the salient results of a participative evaluation of the "Cooperativa Agraria de Usuarios Villa Hermosa," which was jointly conducted by Technoserve and coop members from December, 1985 through June, 1986. One hundred and fifty-four residents of the community of Villa Hermosa, including coop members and their spouses, directly or indirectly provided data for this evaluation. Socio-economic changes and adoption of improved agricultural and management practices are reported, but these must, of course, stand the test of time, and be examined again at a later date to determine whether practice adoption and impacts have indeed "taken."

The sheer size and scope this enterprise - coupled with Technoserve's relative newness to Peru - combined to make this one of the most interesting and challenging projects assisted by Technoserve in that country. It is an estate of some 600 hectares (1,020 acres) where cotton and fruit are the main cash crops for 102 Cooperative members and their families. Over the last two years, these residents have witnessed tremendous changes to their way of life, and as we shall see, most of these changes have been for the good.

Coop members and Technoserve Advisors worked together on three committees to produce this evaluation. From the beginning of Technoserve assistance through March, 1986, total Technoserve assistance costs were \$264,886. This includes US\$7,540 in fees received from Villa Hermosa. Evaluation costs were \$11,570, which is equivalent to 4% of total assistance costs. A total of 128.5 man/days were spent on this evaluation effort. Of these, Technoserve spent a total of 44.5 man/days over the six month period. Coop members on the three evaluation committees (discussed below) spent a total of 84 man/days on this evaluation effort.

SUMMARY OF PRINCIPAL FINDINGS

Management and Administration

The enterprise is financially stable; as of March, 1986, net worth was \$340,250, total assets were \$819,500, and gross revenues for the Quarter ending March, 1986, were \$70,269. The coop registered a net loss of \$9,114 in that Quarter due to fixed administrative and interest expenses associated with the harvesting of fruit and cotton.

The Cooperative's gross margin was 52% as of March, 1986.

As of March, 1986, sixty-six percent of all assets are coop-owned, which is an increase from only 1% of assets which were wholly owned when Technoserve began its assistance.

Sixty percent of all accounting tasks are being correctly implemented according to the Accounting Manual developed by Technoserve; problems continue with that 40% of tasks not being correctly implemented.

A full-time Manager was hired in 1986 to manage the enterprise.

Payroll records have been put in order, and school teachers employed by the enterprise are paid on-time. This has contributed to decreased turnover of teachers, and concomitant savings to the coop. Prior to 1983, teacher turnover was high and payrolls were often in arrears.

The Irrigation, Production and Marketing Committees established by the enterprise in 1984 and 1985 are functioning.

Technoserve trained an Accounting Assistant to maintain a kardex system that is used for receipts to new owner-farmers when they sell their cash crops through the enterprise. As of December, 1985 data from 100% (i.e., 102 members) of all members are maintained in the kardex system.

Petty cash fund and control mechanisms are operating; prior to November, 1985, there was no such fund, and petty cash control was haphazard at best.

Other management control mechanisms have been put in place since the beginning of Technoserve assistance, including: (1) controls on use of machinery and equipment from the central garage; (2) an inventory control system for the coop store. Prior to 1983, control was largely exercised by handwritten notes.

In 1985, Technoserve replaced its accounting Advisor to this project, but some accounting delays persist, particularly in providing timely quarterly balances. This tends to slow internal decision-making.

Thirty percent (N=31) of all members routinely keep cost control records for their farms as recommended by Technoserve.

One hundred percent of the installed tractor use capacity (8 tractors) is used by members.

Agricultural

A 1901 cotton gin - unused for 17 years - was refurbished and put into production in 1982.

Seventy percent of all member cotton producers sell their cotton through the coop.

After meeting all expenses, the six Villa Hermosa members who participated in the pilot project to grow potatoes earned an average of I/47,344.00 (US\$ 2,716) from this first pilot crop, on an average yield per hectare of 2,300 kilograms (1,045 pounds).

Some fertilizing practices have changed in Villa Hermosa. As per Technoserve recommendations, application of nitrogen has declined while application of phosphorus and potassium fertilizers has increased; and, 30% of all farms fertilize according to recommendations made in the Agricultural Plan.

Seventy-six percent more cwt. of cotton were produced during the 1984-85 harvest (when Technoserve recommendations for cotton began taking effect) over the 1983-84 harvest.

Under the new CAU system, cotton production seems to be both more profitable and more efficient. In the 1983-84 harvest, growers produced 14,015 kg. of cotton on 302 hectares; 8,825 kg. were grown on 308 hectares in 1982-83.

Deciduous fruit production markedly improved from 1982 - 1986. Mandarin production was up by 120%; peach production skyrocketed by 2,185%; production of apples increased by 231%; orange production rose by 71%.

From 1982 through 1985, peach production increased from 56 metric tons to 160 metric tons.

1986 corn production is expected to meet or exceed the 3.5 metric tons goal set forth in the Agricultural and Irrigation Plan.

Sixty percent of mandarin growers have adopted cultivation practices (i.e., weed control, grafting, irrigation, pruning, weed control and fertilizing) recommended by Technoserve. However, 2/3 of these continue to intersperse their mandarin with other crops - against Technoserve recommendations.

The Agricultural and Irrigation Plan developed with Technoserve guides daily, monthly and quarterly activities of the Cooperative.

Employment and Income Generation

Average full-time employment of adults and children working in the Villa Hermosa CAU increased by 128% from 1983 to mid-1986.

The total average number of hours worked per week by all family members on their owned parcels decreased from 1983 - 1986.

Estimated yearly family income increased by 46% under the CAU system over their earnings as laborers paid by the coop (CAT system). Male heads-of-household and adult females tended to earn 114% more as landowners under the CAU system than they did as laborers under the CAT system.

Part-time employment of children of enterprise members increased by 667% for the same period, but their average monthly earnings decreased by 38% from 1983 - 1986. This is owed largely to the fact that children work an average of two hours less per day than their fathers.

With US\$2,158.00 in earnings from corn and cotton grown on 2 hectares of school property in 1983 and 1984, the Villa Hermosa school has (1) asphalt-surfaced an area used for community meetings and games; (2) formed two volleyball teams and three football teams; (3) painted the exterior walls; (4) planted flowers in a small park on school grounds.

This additional income earned by the coop school (5 primary grades and 6 secondary grades) has resulted in teachers living in school-provided housing; prior to 1983, teachers travelled daily to and from Huaral.

The Diagnostic Study conducted by Technoserve in 1983 identified fifteen illiterate adults in the community; since 1983, these have been enrolled in a literacy program sponsored by the Cooperative.

Fifty-five percent (N=15) of families sampled reported spending more of their income on improving their daily diets; 44% reported spending more on purchases of books; and 26% said they purchased vitamins for their families.

Fifteen children of Villa Hermosa residents are enrolled in universities for the 1986 school year; 100% of all their educational expenses are borne by the families.

Of the twenty-seven families sampled, two (7%) purchased automobiles in 1985 and 1986.

THE CONTEXT

The "Cooperativa Agraria de Usuarios de Villa Hermosa" has a complex history that is important to understand in the context of this participative evaluation of Technoserve assistance to this enterprise.

Its recent history begins in 1964, when the Peruvian government passed an agrarian reform law which had as one of its purposes the quieting of rural discontent. This had direct - albeit long term consequences for residents of the Cacqui region of Huaral Province, where the present Villa Hermosa Cooperative is located, 90 minutes by car from Lima.

The Yanacona family - descended from Japanese immigrants in the 1920's - had gradually accumulated an agricultural estate of over 600 hectares in this area. But with the advent of the 1964 agrarian reform law, twelve workers on the Yanacona estate formed a cooperative association (the "Cooperativa Agraria Cacqui") with the intention of occupying and working the Yanacona estate.

But, while the new law was on the books, it was haphazardly enforced, and remained largely a "paper law." However, the presence and intent of the new Cooperative posed a threat to the Yanacona family, who attempted to circumvent the agrarian reform law by titling their lands in the names of their sons, while allocating a portion of the estate to their workers. This state of tension persisted until 1972 when other, more effective, agrarian reform laws were implemented. It was in 1973 that this first cooperative was dissolved, and a new cooperative formed - the Cooperativa Agraria de Trabajadores de Villa Hermosa. This was a Workers Cooperative where lands previously owned by the Yanacona family were now owned by the Cooperative. As we shall see, in 1985 this Cooperative became the Cooperativa de Usuarios de Villa Hermosa, which is the subject of this study.

Expropriation, Outside Assistance and the Beginnings of a New Way of Life

In 1973, the Peruvian government expropriated the Yanacona estate, and allocated the new Cooperative 525 hectares of estate lands, with an additional 59 hectares to be adjudicated later. But, while the new Villa Hermosa Cooperative inherited the land, buildings, equipment and machinery of the old estate, the budding cooperative had -under the terms of the law -also inherited a debt of S/12,047,327 which was to be paid the Government, which had reimbursed the previous owners for the expropriation.

But in 1982, a deteriorating financial performance occasioned by persistently low yields of cotton - the main cash crop - deterioration of capital assets, (including a 1901 cotton gin) and inefficient use of labor and of estate equipment, prompted coop management to discuss the feasibility of converting their workers cooperative into a multiple services cooperative where workers would own and work individual land parcels which would be apportioned from the land of the Cooperative that they collectively worked. This discussion was also made possible by agrarian reform laws passed by the Belaunde Terry government in 1981. All this had tremendous implications for the enterprise, and for assistance agencies like Technoserve, as we shall see.

STRATEGY AND SCOPE OF TECHNOSERVE ASSISTANCE

With this situation as a backdrop, in October, 1982 the Administrative Council of the Cooperative asked Technoserve-Peru to provide them consulting assistance in the management of their enterprise. Technoserve agreed, but proposed that before assistance could be undertaken, the Company would carry out a comprehensive socio-economic study of Villa Hermosa which would diagnose and pinpoint important problem areas and strengths of the enterprise. The coop agreed, and a five-month Diagnostic Study was completed in August, 1983. After discussion of Study data between Technoserve, the Administrative Council and the General Assembly, the Council requested Technoserve to broaden its assistance to include agricultural production and finances. This second contract was signed in August of 1983.

A change from a workers cooperative to a users cooperative would have dramatic implications because it would shift property title from a collective ownership to individual ownership, with only a fraction of the estate being collectively owned and worked by its members. Thus, workers would become entrepreneurs who owned and managed their own agricultural parcels and who would form a multiple services cooperative much like those which are found

throughout Latin America. A changeover of this kind would represent possibly significant and long-term changes in the way these former tenants and their families lived and worked.

Management's inquiries and discussions about an impending change in ownership and working patterns gave birth to a great deal of "soul-searching", rumors, and conflict among CAT management, members and their families. Conflict centered on the pros and cons of a "changeover;" who would get which land; how would people earn a living under the new system; how would debts be paid; which debts would be paid; and when would the "changeover" happen. There were also conflicts between CAT members over those who wished to remain as workers vs. those who favored private ownership (a significant minority was of the opinion they would be better off if they sold their lands and continued working it as laborers); conflicts over leadership; crops to be grown, and conflicts over irrigation rights. Some members were aware of the negative experiences of other CAT cooperatives who had converted to "user" (CAU) cooperatives, and were understandably reluctant to repeat these experiences. Nor was outside assistance welcomed with open arms; prior experiences with consulting companies and Government officials were largely negative.

This set of circumstances required Technoserve to work with patience and consistency in everything it did with Villa Hermosa. In the main, this approach was effective; but, as we shall also see, Technoserve committed some errors along the way which, fortunately, were successfully resolved.

The Parcelization Study

In 1983, while Technoserve was working to comply with the terms of its second assistance contract, the Administrative Council asked Technoserve to conduct a feasibility study of how existing lands could be equitably divided and distributed among the 102 CAT members working the almost 600 hectares of Villa Hermosa; that is, to help the coop determine how the Villa Hermosa CAT could be converted into a CAU. Given the context described here, this was a complex and delicate task for enterprise management, members, their families, Technoserve, area lending institutions and the nearby community of Auaral.

Both Technoserve and Villa Hermosa were well aware of the tremendous implications of such a changeover. Technoserve therefore agreed to conduct the Study immediately following completion of its present contract, but with the proviso that - because of the complexity of such a Study and its potential to impact every member of Villa Hermosa - there must be broad-based involvement of Villa Hermosa members in conducting the Study and discussion of its results and implications.

Technoserve and Villa Hermosa management agreed that this broad-based participation should be used to educate members and their families about the advantages and disadvantages of a "changeover;" what changes in working patterns and habits could members expect from belonging to a users cooperative and owning their own land; what activities would Technoserve be carrying out during the course of the Study; how would the enterprise be managed under the new system.... In short, the time dedicated to conducting the Study would also be used to incorporate training and education activities to facilitate a "changeover," should the Study so indicate and if members

agreed that a changeover was feasible and desirable. This was acceptable to the Administrative Council, and Technoserve conducted the Parcelization Study from March, 1984 - July, 1985.

The Parcelization Study involved the taking of representative soil samples from 600 hectares, research into irrigation, cultivation, financing, management, marketing and agricultural production practices and problems from the mid-1970's to the present. It also involved extensive topographical mapping, efficiency studies of machinery and equipment use, audits of enterprise books and, where possible, updating these. Data were compared with those from the previous Diagnostic Study, and with Technoserve experiences to-date in working with Villa Hermosa.

Key elements of the Parcelization Study were:

(1) 56% of the 490 cultivable hectares would be distributed among 77 tenants. Twenty-five of these parcels would be distributed among the 77 families, while 52 parcels would be allocated to individual holders. The remainder would be titled in the name of the new Cooperative.

(2) 300 hectares were to be sown in annual crops (cotton and corn), and the remainder would be sown in fruit trees (peaches, cherries, avocados, pears and apples).

(3) Parcelization must make every attempt to respect the current agricultural "structure," including irrigation facilities, cultivation patterns, road access and drainage.

(4) Irrigation Units would be formed to manage this aspect. In fact, 11 such units were formed by June, 1985, with Technoserve help.

(5) The average size of the family parcel was 7.23 hectares; average size of individual parcels was 4.70 hectares, and both individual and family parcels would be dedicated to cotton and fruit. Many owners used a portion of their allotted land for non-cash crops, like vegetables.

In conducting this Study, seven Technoserve Advisors (agronomists, accountants, economists, business managers and a rural educator) met with individuals and groups to gather data, but also to educate and train. For example, Georgina Miranda and Carlos Lozán - two Company accountants - not only gathered historical data on coop financial records, but also used these working sessions to teach some key accounting concepts, and Augusto Zelaya, the rural educator, used data-gathering sessions with families to introduce a simple household record-keeping system.

Thus, Technoserve's assistance strategy was to "wed" data collection and training over this study period. Apart from these kinds of individual interactions between Technoserve and the members, over the life of the Study more than 30 group meetings were held between Technoserve Advisors and coop members to validate Study data, and educate members about the "changeover."

Problems with Parcelization

During this assistance and investigative period, problems continued to surface. One such problem involved the inaccurate work performed by the topographer sub-contracted by Technoserve. When his preliminary conclusions were presented to the General Assembly and the Administrative Council, Technoserve was obliged to recognize the discrepancies, and agreed to underwrite new topographical work by another sub-contractor. This contributed to delaying the completion of the Parcelization Study by five months. In February, 1985, the coop Manager resigned and was replaced by an interim Manager who had to be oriented by Technoserve and the Administrative Council to the history and issues outlined in this section of the report.

Other problems stemmed from the decision of the Administrative Council to eliminate from possible consideration for land title 13 coop members who were retired from the enterprise; settling the issue of whether land titles and parcels would pass to families or to individuals; would the lands people are now working be the same or different from property they would work as owners; how much land would be titled to the Cooperative; persistent delays in receiving accurate accounting information; high employee absenteeism and tardiness due to insecurities occasioned by a possible "changeover."

By August, 1984, Technoserve and the Administrative Council decided that Technoserve should present its preliminary findings from the Study to a meeting of the General Assembly to acquaint members with the problems outlined above, and verify, or validate, Study data collected up until then.

That same month, Technoserve presented these preliminary findings to the General Assembly. In summary, the majority of the Study's conclusions were approved, including a lottery mechanism whereby parcels would be apportioned among individuals and families.

The lottery was conducted in the presence of a Notary Public, the Manager, the Administrative Council and members of the General Assembly in October, 1985 which essentially ratified the land re-distribution recommendations of the Parcelization Study.

New Problems and How They Were Resolved

The evaluation report notes that, once the lottery was completed, many of the conflictual issues discussed earlier were essentially replaced by two overriding concerns: (1) The new landowners insisted on taking immediate possession of their properties; (2) and, coop management requested Technoserve to assume the direct management of the accounting function because delays in receiving this data were slowing down the internal decision-making of the enterprise at this crucial time of "changeover." Technoserve insisted, however, that possession could not legally take place until approved by the Ministry of Agriculture, which, through a recent decree, mandated that any land re-distribution scheme be approved by that Ministry, and that new governing statutes be written to reflect the changeover.

Technoserve was successful in forestalling demands for immediate takeover of lands. In response to the Cooperative's request that Technoserve assume direct control over the finance and accounting function, Technoserve in

effect said "no," but offered to help Villa Hermosa recruit and train a new accountant who would submit timely and accurate data to the Council, as required by statute. This was an important decision-point for Technoserve -whether to "take over" and hopefully get the job done, or work more slowly in building the management capacity of the Cooperative. The accountant's work was key to this whole process, as much of the coop's decision-making hinged on timely and accurate accounting data.

Technoserve formed two committees from Villa Hermosa members which were charged with writing the statutes of the new users cooperative, and with physically checking and verifying the types, location and extent of parcels allocated through the lottery. At the same time, member enthusiasm for their new properties translated into a slowdown of production activities, the presumption being that, "If I'm going to work other land as an owner, why should I break my back as a communal worker on another part of the property?" Throughout this process, Technoserve continued its training activities, focusing on educating members and coop management about the changeover and its implications. Each meeting of the Administrative Council, of the General Assembly and of the ad hoc committees was used for this purpose.

For instance, in May of 1985 alone Technoserve conducted 15 training sessions for members and management on a variety of themes, including how to control the cost of agricultural inputs on re-distributed lands; pest control; irrigation practices; and tractor maintenance.

In June of 1985, five months behind the schedule called for in the contract, the General Assembly ratified the statutes of the new "Cooperative Agraria de Usuarios Villa Hermosa, S.A.," which ushered membership and management into a future that is still uncertain.

It was in this context that the participative evaluation of Villa Hermosa Cooperative, indirectly involving more than 900 residents, was carried out. The reader is advised to reference these data and conclusions against the context outlined above.

EVALUATION GOALS, SCOPE AND PROCESS

In January of 1986, thirteen members of Villa Hermosa, together with Technoserve, decided that, as a result of participating in this evaluation, the evaluators would be able to:

- (1) Conduct future evaluations of their project without outside technical assistance in evaluation
- (2) Present reliable agricultural, administrative/management and social impact data to their peers in a meeting of the General Assembly
- (3) Compare and analyze agricultural, administrative/management and social impact data and arrive at conclusions that permit the Cooperative to make informed decisions about its future

Four Evaluation Hypothesis

As suggested by Technoserve, the sub-committees decided to examine four hypothesis with this evaluation:

(1) "Hours worked per week of female family members and children has increased as a consequence of the changeover from CAT to CAU."

(2) "As a result of owning and working their own parcels, family income has increased in proportion to the increase in hours worked per week."

(3) "As a result of the changeover from CAT to CAU, family-owners are purchasing more 'necessities' that - as communal owners and wage earners -they did not purchase"

(4) "CAU members can recognize and use more and different concepts than they could recognize and use as CAT members (i.e., there have been increases in the vocabulary of CAU members since 1984)." As we shall see, three of these hypothesis were validated.

These hypothesis and objectives were developed as part of an iterative process that started with getting approval for the evaluation from the Administrative Council, and forming a general evaluation committee that would examine evaluation scope and uses for the data to be collected. Next, thirteen Villa Hermosa members formed evaluation sub-committees which would examine the performance of three areas of the Villa Hermosa enterprise: a Financial/Management sub-committee, a committee to gather Accounting data, and a third committee to analyze agricultural performance.

Other steps were to decide on evaluation scope and on the time period to be evaluated, deciding on evaluation methods to be used, sample size, the time each sub-committee and each member could allocate to evaluation activities, and how evaluation data would be synthesized and written-up. A sample size of 30 families was selected, but reliable data was collected from only 27 (154 people) of these.

Sample Representativeness and Next Steps

These 27 families represent approximately 30% of the families of Villa Hermosa. If evaluation results are from this sample are representative, they can be extrapolated to the entire Villa Hermosa population of +900 individuals. A total of 33 man-hours were spent on these initial steps. Most of these (68%) were man-hours donated by coop members.

Next steps involved designing and testing the questionnaires to be used in the study, pre-testing and administration of questionnaires, data tabulation, editing, and presentation of evaluation data and conclusions to the General Assembly, which will be done in August, 1986. Of the 95.5 man-days spent in this phase, 61 of these were from members - the remaining man-days were allocated by Technoserve.

A Problem with Evaluation

Although the evaluation goals were heavily training-oriented (i.e., that participants be able to do evaluations), it should be noted that Technoserve was more active in some phases of the evaluation process than in others, which probably led to a dilution of this focus. For example, evaluation Goal No. 1 (previous page) was not completely met because Technoserve experienced considerable difficulty in training members in interview techniques that would yield reliable data. Therefore, Technoserve collected data from the 27 families. While useful data was collected this way, it somewhat short-circuited accomplishment of this goal.

EVALUATION RESULTS PER AREA

Finance, Accounting and Management

The results below combine the findings of two evaluation sub-committees (Finance, Accounting & Administrative), formed by eight Villa Hermosa residents and coop members. Their conclusions are:

- In 1984, Technoserve and the enterprise established the goal of determining the feasibility of reconditioning the cotton gin and its attendant equipment, which had been out of operation for 17 years. The Study Technoserve conducted found this project to be economically viable, and in fact, the gin was put in operating condition for an investment of \$7,000. A three-year contract was let to a gin operator to repair and operate the gin; after three years, gin operation reverts to the coop (EDITOR'S NOTE: No evaluation data is available on gin efficiency).
- The leadership capacity of the enterprise has markedly improved since 1982. This is partly due to the present leadership having to "practice" and exercise their leadership roles in the frequent meetings of the General Assembly and Administrative Council during the "changeover" process.
- Technoserve was successful in helping Villa Hermosa to become a viable and profitable enterprise, as shown by the following consolidated profit and loss statement, adjusted for inflation.

TABLE 1

Profits and Losses from 1980 to 1985, in Peruvian Soles
(FY from 1 January - 31 December)

	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1986*</u>
Sales	270,504	197,183	230,798	87,215	180,208	184,828
Sales Costs	(139,018)	(107,846)	(148,111)	(52,852)	(81,576)	(131,784)
Gross Margin	131,486	89,337	82,687	34,423	98,632	53,044
Operating Costs	(90,156)	(87,480)	(71,788)	(41,038)	(53,078)	(26,075)
Operating Profits	41,330	1,857	10,899	(6,615)	45,554	26,969
Other Income	N.A.	N.A.	1,901	750	1,648	N.A.
Other Expenses	(1,224)	(229)	(42,431)	(1,196)	(1,781)	(928)
Net profit or loss	40,086	1,628	(29,631)	(7,061)	45,421	26,041

* = Partial year

The overall decline in sales from the five-year high of over S200,000 was attributed to high sales costs in 1982, and unfavorable weather conditions the following year which affected production throughout the Huaral Valley. The 1984 harvest enabled the coop to recover its losses. The evaluators concluded that 1985 actual sales are at least 25% above the figures reported here because members -during their first year as landowners - sold their corn, fruits, avocados and potatoes mostly through intermediaries, and not through the coop. Thus, it is probable that member earnings are considerably higher than can be inferred from the financial data reported here.

TABLE 2

Key Financial Indicators for the Years 1980 - 1985 (Intis)

<u>INDICATOR</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
Gross Margin on Sales	.50	.45	.36	.40	.55	.29
Net Margin on Sales	.15	.01	(.13)	(.07)	.25	.14
Current Ratio	1.70	1.35	N.A.	.58	1.23	1.35
Debt/Equity Ratio	1.90	2.54	N.A.	78.45	1.33	.50
Debt/Assets Ratio	.65	.72	N.A.	.98	.57	.33

Two indicators are perhaps the most striking. The Debt/Equity indicator shows that, in 1980, coop debt to third parties was twice as great as profits and capital contributed by members. However, by 1985, this situation had been reversed and outside debt had been reduced to about half of that held in the coop's capital accounts. The Debt/Assets indicator tells us that, where in 1983 98% of all coop assets were owned by third parties, two years later only 1/3 were owned by outsiders, and two-thirds owned by the members themselves. This is an arresting turnaround.

Note that the gross margin over sales figure for 1985 should probably be more in the neighborhood of .43 instead of .29, reflecting the additional 25% being earned by members from sales of fruit and vegetables.

From the balance sheet below, we see that Villa Hermosa has demonstrated increasing and consistent profitability, especially between 1984 and 1985 when it was able to recover its 1982 and 1983 losses. In terms of fixed assets, the only important investment was the purchase of three tractors in 1982. Annual revaluations, mandated by law, account for all other increases.

The improved financial condition of the enterprise enabled it to retire both of its long-term debts in 1985, leaving outstanding a short-term debt with the Agrarian Bank.

TABLE 3
BALANCE SHEET 1980 - 1985
(JANUARY 1 TO DECEMBER 31)
(Thousands of Soles)

	1980	1981	1982	1983*	1984	1985
CURRENT ASSETS	254,775	336,165	551,522	381,986	1,877,414	4,957,521
Cash-Banks	1,077	652	10,520	1,458	--	441,523
Receivables	48,243	22,720	224,838	70,737	97,778	1,852,623
Inventories	205,455	312,793	316,164	309,791	1,779,636	2,663,375
FIXED ASSETS	84,062	198,901	776,791	668,241	1,401,616	6,535,654
Land	8,484	10,918	126,652	126,652	127,952	830,864
Buildings	11,013	12,500	22,875	24,268	131,714	644,442
Construction in process	18,890	24,451	62,197	63,348	72,410	78,917
Fruit plantings	9,078	56,178	347,225	347,225	1,395,637	8,352,873
Machinery and Equipment	53,575	62,898	135,614	174,382	267,896	959,819
Vehicles	15,644	19,283	19,403	19,283	25,204	64,503
Furniture and Goods	11,616	18,073	28,673	18,673	108,033	513,708
Irrigation Projects	15,060	20,030	39,968	39,968	108,647	221,291
Accumulated Depreciation	(69,507)	(94,799)	(184,468)	(217,398)	(920,437)	(5,415,224)
Other	10,399	69,369	178,652	61,840	84,560	284,461
TOTAL ASSETS	338,837	535,066	1,328,313	1,050,227	3,279,030	11,493,175
DEBT	222,260	383,968	998,606	1,037,009	1,877,017	3,850,250
Short Term	150,120	248,317	786,234	659,438	1,525,194	3,672,678
Long Term	72,140	135,671	212,372	377,571	351,823	177,572
NET WORTH	116,577	151,078	329,707	13,218	1,402,013	7,642,925
Contributed Capital	1,260	1,260	18,100	18,100	18,093	33,627
Cash Reserves		138,751	103,564	103,563	103,563	103,563
Profits & Earned Interest	19,675	8,250	6,501	3,684	3,576	3,655
Revaluation Surplus	55,556		427,719	368,327	570,552	6,546,379
Yearly Profits	40,066	2,817	(226,176)	(480,456)	706,229	955,701
TOTAL DEBT AND NET WORTH	338,837	535,066	1,328,313	1,050,227	3,279,030	11,493,175

* July '82 - June '83

Other findings were:

- A total net margin of 14% on US\$142,000.00 in total sales for 1985;
- A net profit of US\$20,105.00 for the year to-date;
- The high level of involvement of outside institutions (e.g., Agrarian Bank, Ministry of Agriculture, Technoserve, CENCOOPA) in coop affairs during the changeover period, where management's leadership skills were constantly tested;
- The establishment of annual Work Plan, Agricultural and Irrigation Plan, and four new committees (i.e., Education Committee, Irrigation & Machinery, Marketing, Production) where none existed before;
- Delegation of tasks from management to the appropriate functions where work should be carried out (e.g., instead of the Manager performing tasks related to financing of agricultural production activities, by 1984 many of these tasks had been delegated downward in the organization);
- Before the changeover, there were no mechanisms to control sales or purchases; cash controls were virtually non-existent; what accounting reports there were came late and were inaccurate. Presently, the Accounting Department is functioning adequately, although some reports still are produced late and the coop has not produced monthly cash-flow projections;
- The Accounting Department is paying, on a timely basis, the school teachers employed by Villa Hermosa; until 1985, salaries were backlogged;
- The financial audit of the enterprise for third Quarter, 1985, was completed, as per projections, by November that year;
- As of December, 1985, 30% of all members maintain reasonably accurate cost-control records; up until that time, this practice was unknown in the coop;
- With Technoserve help, a petty cash mechanism was set up in November, 1985, and is operating;
- Sixty percent of the practices recommended in the Accounting Manual introduced by Technoserve are correctly applied by that Department; (2) Member use of coop services has significantly increased since 1982. This is substantiated by the following data:
 - * 100% of all members are enrolled in the Agricultural and Irrigation Plan; a Technoserve assistance goal was to enroll 90% of all members
 - * All 8 coop-owned tractors are being used to 100% of their capacity by members. This may lead to problems with maintenance and repair. However, additional tractor time is leased by members from area tractor owners (no other data available).
 - * 100% of all members receive agricultural credit through the Cooperative.

* The coop hired a full-time agronomist in January, 1986, to lend technical assistance to members; previously, there was a part-time agronomist who worked intermittently, or no agronomist at all.

- Another goal for 1985 was for the enterprise to deliver quarterly financial statements within 60 days of the beginning of the next quarter. This goal has been met. Concomitantly, General Journal entries are made daily; previously-used Cost Reports are being phased out (owed to the changeover to CAU); and postings to the General Ledger are done monthly, as recommended.

Agricultural Production

(1) Cotton

A 1984 goal was to increase cotton yields by December, 1985, on 215 hectares, and, in fact, two hundred and fifteen hectares were planted in cotton by September - three months ahead of schedule. Average yields per hectare increased by 72% between the 1982-3 harvest to the 1983-84 harvest (from 27 kg. per hectare to 46.4 kg. per hectare). The 1982-83 harvest yielded a total of 8,825 kg. while 1983-84 yields were 14,015 kg. Although data from the 1984-85 harvest is not yet available, this appears to reverse a persistent decline in cotton production since 1978. Table 4 shows cotton production from 1978 to the present. Financial data from the third Quarter of 1984 show the enterprise earning US \$60,268 from cotton sales of \$135,248 after meeting costs of US \$74,978.

TABLE 4
TRENDS IN RAW COTTON PRODUCTION, 1978 - 1984

Harvest Year (Hectares)	Area Under Cultivation of Raw Cotton	Total Yields	Yield in Hundredweight per Hectare
1978-79	360	26,964	74.9
1979-80	318	21,865	68.7
1980-81	345	19,074	55.2
1981-82	340	17,962	52.8
1982-83	308	8,825	28.6
1983-84	302	14,015	46.4

(2) Fruit Production

The Parcelization Study estimated that total fruit assets were \$287,622 (S./1,929,184,680), with the majority of these assets concentrated in mandarin and peaches.

Table 5 shows total Villa Hermosa fruit production from 1979 to 1985.

TABLE 5
TOTAL FRUIT PRODUCTION, IN KILOS, 1979 - 1985

Crop	Years						
	1979	1980	1981	1982	1983	1984	1985
Mandarin	-	126	12,123	47,715	267,142	694,939	832,000
Peach	26,208	188,976	197,424	107,708	30,045	212,915	242,482
Orange	101,311	96,202	125,127	188,170	84,166	121,828	171,653
Avocado	36,820	47,980	46,425	96,534	43,885	72,326	76,786
Apple	45	258	1,131	4,443	19,310	28,885	65,630

Note that, while mandarin and apple production steadily increased over the 7-year period, all other fruit production declined in 1983. This is due to organizational and member problems occasioned by the changeover from CAT to CAU, which was discussed earlier. The 1984 and 1985 fruit harvests show that fruit production again rose, at roughly the same pace before 1983.

When fruit production in metric tons is compared, we see some striking results. (Table 6, below). Apples, peaches and mandarin production registered the largest gains.

TABLE 6
COMPARATIVE FRUIT PRODUCTION, IN METRIC TONS (1982/83 VS. 1985/86)

Crop	Production from 1982-'83	Production from 1985-1986	Percent Change
Mandarin	268	590	+120
Peaches	7	160	+2,185
Apples	19	63	+231
Oranges	84	144	+71
Avocados	no data	no data	no data

Regretably, income data is available only for 1985 peach production: after meeting all production, marketing, administrative and financing costs (US \$4,436), total earnings from peach production ("Tacna" variety) were \$8,925 (I./155,558) for peaches produced on the 16.10 newly-owned hectares of three coop members.

(3) Potatoes

It is important to note that Villa Hermosa residents have little experience in potato cultivation; so, this pilot project was a departure for them.

In April, 1985, the Ministry of Agriculture asked Villa Hermosa to immediately plant 70 hectares in potatoes to relieve regional shortages in this commodity. The coop turned to Technoserve for guidance, which advised them to proceed, but to minimize risk by planting fewer hectares. Six farmers agreed to participate in this pilot project by planting a total of 20 hectares in the "Tichuasi" variety. The Agrarian Bank made US \$23,000 (I./210,000) in credit available for this project, which was to be repaid

-at 46.5% interest - within five months of harvest. Planting began in September, 1985 and the last potato harvest ended in January, 1986. Table 7 shows financial performance and production figures from this pilot project.

TABLE 7
TOTAL POTATO PRODUCTION AND EARNINGS FOR 6 VILLA HERMOSA GROWERS

Member	Area (Hec.)	Kgs.	Total Expenses (Intis)	Total Profit (Intis)
Aparicio	2.9	47,719	50,306	50,858
Durand	4.0	66,500	90,832	66,443
Zevallos	4.5	54,162	89,800	37,481
Pizarro	2.5	40,733	52,300	41,386
Falconi	2.5	32,205	52,681	19,458
Escalante	2.0	44,717	36,734	62,985

This data shows the project was profitable: On a total average potato yield of 47,672 kilos (21,669 pounds), average total per hectare earnings were US \$2,664 for the 6 producers over the five-month period. Note that 100% of the Bank loan was liquidated in January, 1986 - one month ahead of schedule.

Social Aspects

(1) Full-time and part-time employment

The evaluators concluded that average full-time employment of men, women and children in the new Villa Hermosa CAU - approximately 900 people - increased by 128% from 1983 to mid-1986. Table 8 gives comparative data for the 27 families, which might be extrapolated to the whole population.

TABLE 8
AVERAGE FULL-TIME FAMILY EMPLOYMENT IN PERIOD 1983 TO 1986

Total People Working	1983				1986			
	Men	Women	Children	TOTAL	Men	Women	Children	TOTAL
	24	19	3	46	55	27	23	105
% Change	-	-	-	-	129%	42%	667%	128%

In 1983, 46 people had full-time employment (albeit mostly as paid laborers) with the Cooperative; by mid-1986, full-time employment had jumped to 105 people. As can be seen, the sharpest increase was in employment of children, followed by increases in employment of men. The increases are due to the changeover from CAT to CAU; that is, under the CAT system, only family members who were members of the CAT worked the land - family members and others who were not CAT members worked as part-time paid laborers, or didn't work at all. However, it should be assumed that some of this

increase is due to seasonal agricultural work, particularly for cotton and fruit harvesting. The evaluators conclude that, in addition to full-time employment generated, 250 part-time agricultural jobs were created in 1985 and 1986.

(2) Changes in Work Patterns

TABLE 9
TOTAL AVERAGE HOURS WORKED PER DAY BY FAMILY MEMBERS
(1982 vs. 1986)

	1982 (CAT)				1986 (CAU)			
	Men	Women	Children	TOTAL AVERAGE	Men	Women	Children	TOTAL AVERAGE
Total Average Daily Hours Worked	9.7	8.4	6.4	8.17	9.4	8.3	5.4	7.7

The average total working hours of men, women and children has slightly declined since 1983. The evaluation document offers no explanation for this, but it can be reasonably inferred that, while people are working less hours, more family members are working that land (i.e., 46 employed full-time vs. 105 people employed full-time). Thus, it should be concluded from agricultural production data, coupled with reported increases in full-time employment of 128%, that productivity and employment are up, largely because more people are working fewer hours per week. As we shall see below, family income has also increased.

Changes in Family Income

Questionnaire data on family income from wages paid them by the Cooperative before and after the changeover from CAT to this multiple services cooperative are shown in Table 10. Note that this data is tentative in that campesinos have traditionally been reluctant to accurately report earnings. However, the data is useful as a rough indicator of changes in family income.

TABLE 10
SELF-REPORTED CHANGES IN AVERAGE YEARLY FAMILY INCOME UNDER "CAT"
VS. "CAU" SYSTEM
(N=27 families)

Family Members	Average Yearly Income (Intis)		
	Under CAT	Under CAU	% Change
Men	144,472	309,720	+114%
Women	109,960	108,200	-.02%
Children	55,400	34,100	- 38%
Total	309,832	452,020	+ 46%

While an average increase of 46% in yearly income was reported, this gain occurred for male heads-of-household. Yearly income for children dropped significantly, and only slightly for women working on the farm. It is the Editor's view that this data is consistent with the decrease in number of hours worked by women and children, and the increase in the total average number of family members working on the farm (Tables 8 & 9).

Changes in Allocation of Family Income

A 45-item questionnaire to determine how family members spent their income was administered. Because there was no comparative data from the Diagnostic Study conducted by Technoserve, we cannot know with certainty if the information in Table 11 below represents a change in family spending. However, given the character of other data in this report, it can be inferred that many families are spending their increased incomes on improving diets, home improvements, books, vitamin supplements, and recreation. Other expenses include purchasing radios and televisions, work vehicles and expenses for adult education (short-courses). Note that the item, "dietary improvements" is based on families using small portions of their land to grow vegetables to supplement their diets.

TABLE 11
REPORTED ALLOCATION OF FAMILY INCOME

Expense Item	Frequency	Percentage
Dietary improvements	15	55
Additions to bedroom	14	52
Books	12	44
Vitamins	7	26
Fairs, parties	7	26
Kitchen utensils	6	22
Televisions, radios	5	18
Improving home exterior	4	15
Refrigerators	3	11
Adult education courses	2	7
Purchase vehicles	2	7

THE FUTURE

Technoserve's present contract ends in August, 1986. However, given the progress made to date, it is very likely that Technoserve will continue to assist this enterprise if requested to do so. While it is too early to state the exact terms of our future assistance to Villa Hermosa, it will be based on our experience with this group, and on how the beneficiaries apply the results of this interim evaluation to the management of their enterprise.