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FINTRAC IDEA MANAGEMENT REPORT IMPACT SURVEY OF GRADUATED FARMERS

SAN SALVADOR, EL SALVADOR
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EXECUTIVE SUMMARY

After working in El Salvador for more than three years, the USAID/IDEA project, implemented by Fintrac Inc., conducted an in-depth, random survey of clients who graduated from IDEA's technical assistance program. The program's graduates received a technology co-investment to establish drip irrigation for up to one manzana (0.7 hectares) as well as 18 months of intensive technical assistance. The survey was conducted in order to determine: the level of project impact on individual sales, incomes and on-farm employment; the sustainability of better agricultural practices; and the impact of any increased incomes on household consumption. The data on this page is a summary of our survey.

Household Information

- Number of graduated clients: 63
- Number of graduated clients surveyed: 31
- Average adult population per household: 2.6; children under 16: 1.7
- Average property size: 7.1 manzana,
- Average distance from paved road: 1.8 km

Client Impact Data

Indicator	Pre-IDEA	Post-IDEA
Land Cultivated (manzanas)	3.3	3.0
Crop cycles per year	1.1	2.0
Irrigation use	13%	100%
Raised/contoured plant beds	0%	97%
Hybrid seed	42%	97%
Plant seedlings	3%	76%
Fertilization	13%	97%
Pesticide safety practices	Low	High
Integrated pest management (IPM)	0%	97%
Farm employment		
• Full time (women)	58 (5)	240 (24)
• Seasonal (women)	103 (28)	259 (60)
Average annual sales	\$3,788	\$30,098
Average annual net income	\$1,966	\$16,747
Credit use	45%	71%

Results based on sample surveyed

With regard to use of income, clients surveyed reported combined investments of approximately \$343,000 going back into their farms and households in the last year. Of this amount, more than \$190,000 — 56 percent — was spent on equipment such as tractors, pumps, drip irrigation, plows, protective netting, etc. The next greatest re-investment, \$42,000 — 12 percent — was used for housing improvements, expansion, and new construction. Clients spent approximately

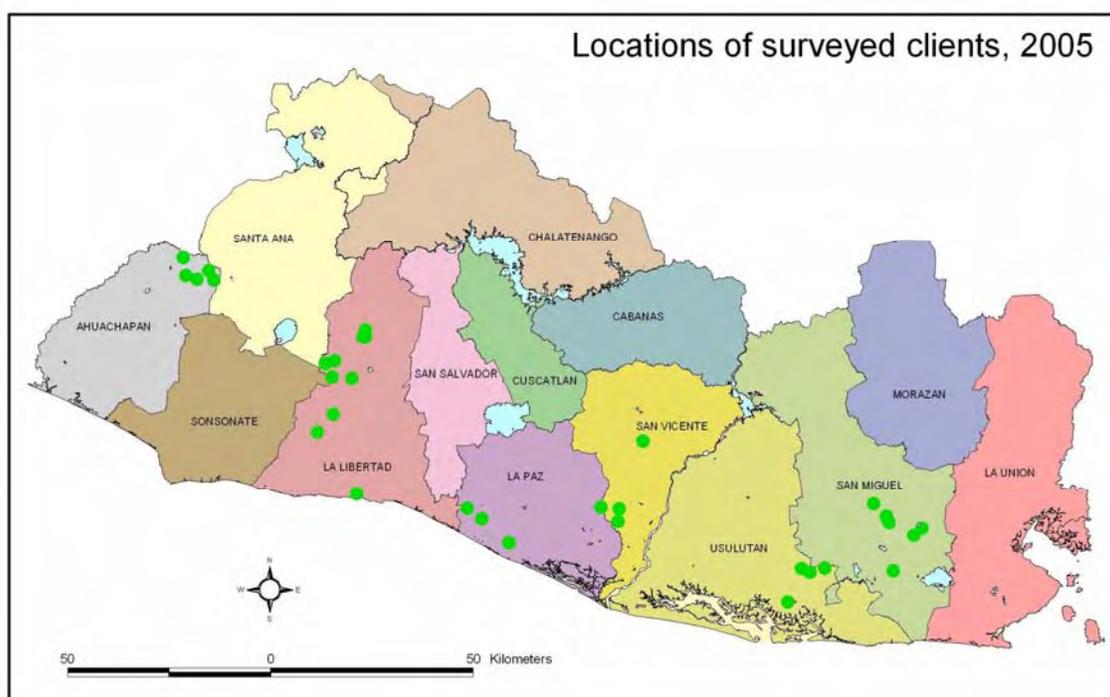
\$34,000 on vehicles, \$18,000 on livestock, and more than \$14,000 on land. Seven percent of client household investment, or nearly \$25,000, was spent on school fees. The balance was spent on farm inputs (seed, fertilizers, pesticides), and miscellaneous household items such as furniture and appliances. One farmer built an additional greenhouse for tomato production for \$2,300. Five clients combined invested more than \$43,000 in new and existing business ventures.

STUDY METHODOLOGY

Fintrac has been implementing the USAID/IDEA project in El Salvador since April 2002. During that time we have identified and assisted a total of 528 lead clients and 1,019 related project beneficiaries. The majority of direct assistance for lead clients has been focused on increasing smallholder production and linking that production to markets. Specifically Fintrac has provided lead farmers with technical assistance and training in production, postharvest handling, marketing, and safe pesticide handling. After up to 18 months of intensive assistance we graduate farmers from the program and move on to work with new farmers. This study was conducted primarily in the southern regions of the country because this is where Phase 1 of the project was initiated in 2002, and where all of our graduated clients are located. IDEA expanded countrywide in 2004.

The purpose of this study was to survey a representative number of IDEA graduates in order to ascertain:

- the level of project impact on individual sales, incomes, and on-farm labor,
- the sustainability of better agricultural practices and technologies, and
- the impact on household income/consumption as a result of participation in the project.



At the time of this survey, September 2005, 63 farmers met the criterion of being graduates of the program. Graduates have completed 18 months of intensive IDEA assistance and have been out of the program for at least six months. Of this group we randomly selected a sample of 31 farmers (49 percent) and

conducted an in-depth interview using a standardized questionnaire (see Annex B for sample questionnaire). Farmers surveyed lived in the departments of La Libertad, La Paz, San Miguel, Usulután, and San Vicente, El Salvador. The survey was conducted by a Fintrac staff member from our Washington, D.C. office, accompanied by an IDEA technician from the area.

CLIENT CHARACTERISTICS

- **Family Size**

The families interviewed had an average of 1.7 children under the age of 16, and 2.6 adults in the household. One household had five adults and several were composed of only one adult. The largest family had four children living on the farm. One-third of the farms did not have children living on them, reflecting the fact that many farms are tended by non-owner managers, a common practice in El Salvador.

- **Distance from Paved Roads**

El Salvador has invested heavily in its highway system and this is reflected in good access to paved roads in many areas. On average, IDEA clients lived 1.9 kilometers from the nearest paved road. The farthest farm was located eight kilometers from a paved road, nearly one-third of the farms were less than one kilometer, and several clients lived adjacent to paved roads. None of the clients said transportation was a constraint to their farm operations.

- **Assistance Received**

All clients surveyed received production assistance that included regular market information reports, seed capital for purchasing and installing drip irrigation on up to one manzana of land, advice on obtaining hybrid seeds, seedling production guidelines, proper land and plant bed preparation, fertilization/fertigation, integrated pest management (IPM), farm chemical safety training, crop rotation schedules, and postharvest handling advice. One client, who had an integrated production and processing operation for yuca (cassava), also received assistance on how to improve processing methods.

CLIENT BASELINE INFORMATION

This section presents client profiles and general information about farming practices before IDEA assistance.

Area Cultivated/Crop Cycles

Clients interviewed owned an average of 5.7 manzanas of land (one manzana equals 0.7 hectares). The farmer with the most land had 22 manzanas while 23

percent owned one manzana or less. On average, total land cultivated per client equaled 3.3 manzanas (100 manzanas in the entire sample), which puts most in the “small farmer” category. Two clients farmed more than 10 manzanas, however both were producing sugar cane, which is a low-value, high-volume product. Five clients in the sample were not farming at all before the project. On average, clients were only producing 1.1 cycles per year before IDEA intervention. The most common crops cultivated before IDEA assistance were rain-fed crops like corn, beans, peppers, cucumbers and sugar cane.

Manuel de Jesus Andrade

Mr. Andrade, a client from Zapotitan, La Libertad, is one of the most successful of all of the IDEA project graduates. As a result of the assistance he has received, he has diversified his production to grow green peppers as well as cucumbers. Andrade said that he had “no idea what raised beds were” before working with the IDEA project. Through the project’s assistance, Andrade has also expanded his land under drip irrigation from one hectare to five hectares. These and other technical interventions have helped Andrade increase his annual sales from \$3,400 to \$61,000. Andrade’s net income from farming has also increased dramatically, from \$1,900 to \$28,500. He currently employs 43 farm workers, and has committed to employ women and unemployed school dropouts from the community, as well as more men, the traditional farm laborers in El Salvador. Andrade sells his produce to buyers in the local market as well as to regional wholesalers, and buyers come to him because he is now recognized for producing high-quality vegetables that are consistently available. This is because he has calendarized his production so that he has fresh product available year-round. He has already re-invested \$17,894 of his revenue to expand his drip irrigation system and purchase other equipment to mechanize his production. “See, before ... we worked according to our imaginations. Now we work with the security of knowing we will see results, due to the practices we learned, which have led to a quality product, which has led to profit,” Andrade said.



Production Practices

- Irrigation

Before the IDEA program, only three of the farmers had access to some form of surface (canal) irrigation, and only one client used drip irrigation. In total, only 8.5 out of 100 cultivated manzanas were irrigated.

- Soil Preparation

The majority of farmers used basic soil tilling before planting, either by using some form of mechanized cultivator (hand or tractor) or hand labor. Forty-four percent of the farmers plowed and harrowed their fields, but only 13 percent practiced subsoil plowing, an important practice in the tropics that helps break up

impermeable layers that can form in the subsoil and inhibit root, water and nutrient penetration. None of the farmers sampled used raised or contoured plant beds before working with the IDEA project. Both practices are essential in the tropics where intense rainfall can flood fields and cause severe soil erosion even on slight gradients.

- Seeds



Raised and covered plant bed preparation

Only 13 clients surveyed (42 percent) had used hybrid seeds, and only one client was using seedlings as a routine practice. Hybrid seeds are critical because they are usually more disease resistant and vigorous, resulting in much higher per plant yields. Seedlings allow for jump-starting field production because they are grown in a nursery before transplanting into the field, significantly reducing the time required between field planting and harvesting.

- Soil and Plant Nutrition

Soil sampling to check for plant nutrition requirements had only been practiced by 16 percent of those surveyed, and never as a routine because of lack of access to testing facilities. Only 13 percent of clients regularly used fertilizers. None of the clients were familiar with the practice of applying starter solutions, used to promote vigorous growth after seedlings are transplanted.

- Disease Control

Only 19 percent of surveyed clients were familiar with crop production guidelines such as plant spacing, fertilizer routines, recommended pest control practices, harvest and storage requirements, etc. The vast majority of clients relied on traditional practices that had been passed on from generation to generation. Nearly all clients had practiced some sort of pest control in the last year, and 80 percent used chemical pesticides when they could afford to. Common products cited included Lannate, Atrazine, Folidol and Terbufos, all highly toxic with broad application purposes. These products are potentially very harmful to the client, his/her family, and the environment if not used properly. Most advice received on plant disease control came from other farmers, farm supply stores, NGOs, or through extension services in some areas.

- Pesticide Safety

El Salvador has the highest incident rate of pesticide poisoning and deaths in Central America. Therefore, a major goal of the IDEA program has been to

improve farm chemical safety procedures on client farms. Most clients had not considered the importance of practicing safe pesticide handling. In an earlier assessment, IDEA technicians found that nearly all chemical mixing took place at or near family or public water sources, which increased the risk of water source contamination. Chemical containers, once empty, were frequently used for other purposes such as carrying water or storing food items. Because of their value, the majority of farmers (more than 55 percent) stored pesticides in their living quarters, usually unlocked and accessible to children. Only 15 percent of clients used some form of protective equipment while applying pesticides. Spraying practices were haphazard, frequently resulting in pesticide residue getting on the person applying the spray, as well as on the ground — instead of on the plant. This results in waste, higher costs and the risk of health and environmental damage. None of the clients interviewed were familiar with the importance of using mixing sites or container disposal before working with the IDEA program.



- IPM Practices

None of our clients were familiar with systematic IPM practices to control pests and plant disease, and only three of the sampled clients had used any form of biological, instead of chemical, pest control. Biological controls typically used in these cases include commercial products, such as Dipel or Thuricide, which are available through local input supply stores.

- Postharvest Handling

Before USAID/IDEA intervention, clients had limited understanding of the importance of proper postharvest handling practices. Fewer than half of sampled clients practiced any form of produce grading at the farm level. Only one client used improved packaging/crating for transport. None were using any form of refrigerated storage or transport. Farmers typically used the traditional method of using baskets or wooden crates with unrefrigerated and uncovered transport. These practices can result in postharvest losses of 60 percent or more.

- Months Per Year in Production

Several IDEA clients had worked in different careers before finding out about the project and turning to farming. Of the 84 percent of the sample who were farming at the start of IDEA intervention, 60 percent were farming full time while 25 percent were farming only part of the year, and 15 percent had not farmed at all in the previous year. The average time spent farming was 8.5 months per year, understandable given that most were dependent exclusively on rain-fed systems

and therefore were unable to farm during dry seasons. Of those sampled, farm income accounted for an average of 67 percent of total household income. Other paying occupations included teaching, transportation, retail shopkeeper, banking, carpentry, and one was an agriculture input supplier.

- **Market Access**

The most common method of crop marketing was selling to a middleman, known locally as a “coyote,” which was the market outlet used by 38 percent of the clients. Thirty-four percent sold their products directly at local farmer markets, while 16 percent sold their products to wholesalers and 16 percent to retailers. Forty-two percent of producers also handled transportation to the buyer, while 42 percent relied on the buyer for farm-to-market transport.

Approximately 50 percent of those interviewed did not trust, were not happy with or had no opinion about their buyer relations prior to joining the IDEA program. The main reason given was that they were unhappy with the price received, or they had to wait too long to receive payment. Clients claimed that they had few options that would offer improved or alternative marketing relationships.

Farm Income

Average farm size, sales and net income baseline data was collected when IDEA technicians began to work with each client. During this survey, data was corroborated by the interviewer. Farm sales for the 31 sampled clients totaled \$117,424 and net income totaled \$60,952 for the year leading up to IDEA intervention. Average sales per client were \$3,788 and net income was \$1,966. The highest sales and income by one client was \$12,600 and \$8,750 respectively. The lowest sales and net income by a client was \$115 and \$60. This pre-IDEA assistance data is summarized in Annex A.

Employment

Employment for the purposes of this survey only included paid labor. It does not include labor provided by family members who were not directly compensated. Estimates of employment before project intervention are summarized in Table 1. Fifty-two percent of clients surveyed reported no paid employment. The majority of employment was seasonal (64 percent), and farm employment was mostly composed of men (80 percent).

Table 1: Pre-IDEA Employment

Employment	Men	Women	Average Men	Average Women
Full Time	53	5	1.7	0.2
Seasonal	75	28	2.4	0.9

Cipriano Antonio Contreras



Mr. Contreras hails from El Refugio, Ahuachapán and before working with IDEA was farming traditional crops such as yuca and tomatoes. He has been a farmer for 30 years and linked up to the IDEA program in December 2002. Contreras expressed appreciation and gratitude for everything he has learned from the project. "I thank God for IDEA. It has opened my eyes to new possibilities and opportunities to improve not only the life of my family, but of other members in the community," Contreras said. He is now able to afford putting his own children through school, as well as the

four young men he now employs in the morning before they leave to attend school. He has the money and resources to teach these young men, who do not have fathers, the importance of hard work, responsibility, and the desire to do the best you can in life. His income is almost ten times what it was before entering the program, increasing from \$2,300 to more than \$20,000, on sales of \$30,000. He still farms 1.5 manzanas, but he has doubled his cropping cycles, and by employing production practices promoted by the project, has increased yields by 650 percent. He stresses the importance of safe IPM practices to his workers, and swears by the new production practices and technologies he uses such as drip irrigation, live barriers, yellow traps, protective netting, and use of fertilization calendars. He has already invested nearly \$18,000 in his farm, including for a small-scale greenhouse to produce seedlings, a small packhouse, and inputs such as hybrid seeds, fertilizers and pesticides. "It would be a blessing to work with Fintrac in the future. The work we have already done has given me the initiative and confidence to try new things, invest, and to always continue producing," Contreras said.

Credit

More than 46 percent of the clients surveyed had never used credit before working with the IDEA project. Of those who did, three had received supplier credit for seed or other input supplies, and 11 had received formal bank credit for either production or equipment loans, using their land or house as collateral. Banks that provided credit to these clients included Banco Fomento, Banco Hipotecario and Banco Procredito.

FARMER DATA AFTER GRADUATING FROM IDEA

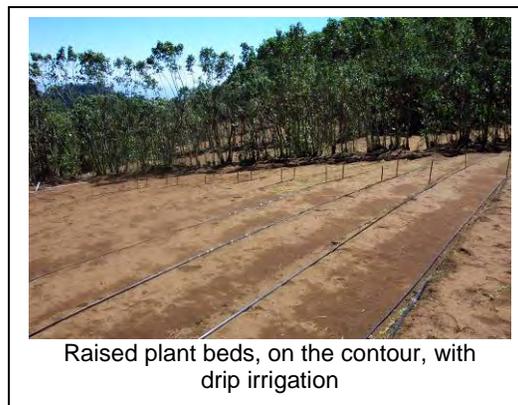
Area Cultivated/Crop Cycles

At the time of our survey, graduated clients were farming an average of slightly more than three manzanas, but because of the new crop management approach promoted by the project, clients produced an average of two crop cycles per year, with some producing as many as 12 cycles per year. Therefore, graduated clients on average more than doubled the intensity of their production as a result of IDEA intervention.

Production Practices

- Irrigation

Graduated IDEA clients surveyed were farming 91 manzanas with drip irrigation, an average of three manzanas per client. Drip irrigation is critical to increasing farm productivity because it enables clients to produce crops throughout the year. It also allows for direct application of fertilizer, minimizing waste and harmful runoff, and it uses one-seventh the amount of water that sprinkler irrigation systems use. For each new client, IDEA provided drip irrigation equipment and assisted with installation on a cost-sharing basis (client provided labor, pump and accessories). Graduated clients, expanded their drip system by 200 percent on average using their own investment. One client installed drip irrigation on 16 manzanas, while another added 10 manzanas. Five clients did not expand beyond their initial drip system provided with IDEA seed capital.



Raised plant beds, on the contour, with drip irrigation

- Soil Preparation

Soil preparation practices among clients have improved significantly. Today, 82 percent of IDEA graduated clients practice subsoil (deep) plowing, 91 percent plow and harrow. In addition, elevated and contoured plant beds, which improve water drainage and prevent hillside erosion, is now practiced by 97 percent of graduated clients surveyed.

- Seeds

Ninety-seven percent of graduated clients surveyed now use hybrid seeds, and 76 percent use seedlings instead of planting seeds directly in the field. These practices dramatically increase yields by improving plant productivity, increasing disease resistance, and decreasing the field time required between planting and harvesting, allowing for more intensive cropping systems and higher yields per unit of land.

- Plant Nutrition

IDEA clients, with the assistance of field technicians, performed regular soil sample analyses. Because of the lack of reliable local soil testing laboratories in El Salvador, only 55 percent of graduated clients still conduct regular soil testing and use these results to regulate fertilizer applications. This is a concern because soil testing is critical to decisions on plant nutritional mixes and optimum

productivity. Ninety-seven percent of clients now use starter solutions when planting and apply fertilizers through drip irrigation systems (fertigation). This is a dramatic increase from pre-IDEA practices.

- Disease Control

After graduating from the IDEA program, 87 percent continue using the Fintrac recommended crop programs, 97 percent use recommended chemical application techniques, and 97 percent adhere to using only EPA-approved chemicals.

- Pesticide Safety

Eighty-one percent of clients interviewed use protective clothing, boots, gloves, masks and air filters when applying pesticides and 97 percent use IDEA-installed chemical mixing sites when mixing and disposing pesticides. Although an alarmingly high number of graduated clients, 35 percent, do not have easy access to chemical container recycling centers, 97 percent do use on-farm disposal barrels for empty chemical bottles and also use locked chemical storage sites away from their living quarters. These are important pesticide safety practices introduced by IDEA that will reduce farm chemical poisonings in El Salvador.

- IPM Practices

As a result of IDEA assistance, 81 percent of graduated clients routinely use IPM practices as the principal approach to control pest problems on their farms. This includes sticky traps (74 percent), crop scouting (81 percent), biological controls (84 percent), and/or mechanical barriers such as low-cost greenhouses or protective netting (84 percent). These practices, while requiring an upfront investment in material and some additional labor, can reduce pesticide use by more than 50 percent, so clients see immediate value in adopting them.



- Postharvest Handling

All IDEA clients now use improved postharvest practices, such as grading, improved handling and packaging, and 20 percent have invested in plastic containers for transporting produce to market. There is still a lack of refrigeration capacity at the farm level, as well as with farm-to-market transport, but clients

use practices such as early morning harvesting, storing in shade, and other methods to improve produce quality from farm to market.

- Crop Diversification

Crop diversification has increased dramatically, with all assisted clients shifting from low-value staple crops such as corn, sugar cane and dried beans, to high-value vegetables like tomatoes, green peppers, cucumbers, onions, green beans and squash. In addition, those growing vegetables initially increased their crop cycles from an average of one per year to two per year.

Dora Alicia Rodriguez

Ms. Rodriguez is a very strong-willed IDEA client from El Refugio, Ahuachapán. In 2002, despite the urging of her husband to quit the business, she committed herself to succeed in vegetable production and agreed to receive project assistance. As a result she has become one of the project's most successful clients, dramatically increasing tomato, pepper, and cucumber yields, resulting in sales increases of 460 percent to \$56,000 this past year, and increases in income of nearly 550 percent to almost \$38,000. Rodriguez was producing tomato, green pepper, and cucumber before working with IDEA but has since diversified into onions and green beans. She now farms year-round, adheres to the



EPA approved chemical pesticide use, and actively employs IPM practices, significantly reducing the use of chemical pesticides that she heavily depended on in the past. One important innovation introduced by IDEA that Rodriguez employs throughout her farm is protective netting to keep virus-spreading insects off of her vegetables. "I am sure that the netting does work, because in my previous tries, I was not able to harvest a single chili," Rodriguez said. She also stresses the importance of fertilization and following crop production calendars. Rodriguez invested \$6,435 of her own money to purchase equipment such as irrigation tubing, sand filters, water pumps, as well as on a small-scale greenhouse. She has increased employment on her farm by 78 percent. "I will take what I have learned with me and incorporate these practices no matter where I am or which horticulture products I am growing," Rodriguez said.

- Months Per Year of Farming

After receiving IDEA assistance, surveyed graduated clients increased the number of months they farmed from an average of 8.5 to 11.5 months per year, and 75 percent now farm all 12 months of the year.

- Market Access

After working with the IDEA project, graduated clients selling directly to wholesalers or retailers increased from 16 percent to 39 percent, which should improve prices and terms received by farmers. An equivalent number still sell their produce through middlemen (38 percent), while half of the clients surveyed now transport their own products to market, an increase of 21 percent from pre-

IDEA intervention, another indication of more direct producer linkages to buyers and the diversification of the farm enterprise.

There were concerns raised by many graduated clients of the reduced access to market information, as well as reduced support with market contacts after IDEA assistance ended, despite the fact that IDEA continues to supply market information through input suppliers and other sources. We suspect that the termination of weekly client visits by IDEA technicians after graduation is one reason for this concern.

Farm Income

As a result of IDEA intervention, client sales and incomes have grown dramatically. This is because of several factors, including changing the production mix away from low-value to high-value products, dramatically increasing yields per unit of land, and increasing crop cycles per year. Annual sales for the 31 clients surveyed totaled \$933,000, an average of \$30,098 per client. One client sold more than \$96,000 worth of tomatoes, green peppers and cucumbers. Total net income after expenses was more than \$519,000, or an average of \$16,747 per client. Sales increased an average of 695 percent, and net income increased an average of 753 percent as a result of IDEA intervention. In one case, a client's sales decreased and he suffered a net loss for the year. This client has a full-time job away from his farm and had left the operation to a paid manager, who did not follow the IDEA program. Pre and post-intervention sales and income data for individual clients are presented in Annex A.

Employment

In all cases we documented significant increases in seasonal and full-time farm employment after IDEA intervention. This is because of several factors:

- Vegetable production is generally more labor intensive
- Requirements of IDEA's production package, including plant bed preparation, seedling production, pest management, and increased crop cycles
- Irrigation and crop calendarization, which results in year-round activities on multiple plots on the farm

Table 2: Post-IDEA Employment

Employment	Men	Women	Average Men	Average Women
Full Time	216	24	7.0	0.8
Seasonal	199	60	6.4	1.9

Full-time employment increased 314 percent (from 58 to 240) and seasonal employment increased 150 percent (from 103 to 259). Employment of women also dramatically increased (380 percent full time, 114 percent seasonal),

although women comprise only a small percentage (10 percent full time, 23 percent seasonal) of the total employment pool.

As expected, average farm payroll also increased significantly from \$5,000 to more than \$75,000 per year, a 1,400 percent increase. Horticulture production using the IDEA methodology is labor intensive, but also results in significant increases in sales revenue and incomes for farmers. This additional revenue is in part spent on labor, and also on other household goods and services, which is discussed below.

IDEA uses a three-pronged approach to the credit dilemma: First, IDEA provides cost-sharing grants to project “lead partners” through our Technology Fund programs so that increased production and sales of high-value horticultural products can be achieved quickly without relying exclusively on slow or unresponsive credit facilities. Returns on these investments often result in an increased willingness on the part of credit institutions to provide loans to the agribusiness sector. Second, we introduce a calendarized production program that increases farmer cash flow and spreads it out more evenly over the year – requiring less upfront capital to begin production and allowing farmers to self-finance most, if not all, of their investment and working capital needs. Third, we provide business development services to assist clients in preparing loan applications and negotiating with potential lenders, while at the same time assisting credit providers to assess loan applications and locate potential borrowers.

Credit

Graduated clients were much more likely to access formal credit. Our survey found that 71 percent of clients had used formal bank or trade credit to purchase equipment, inputs, invest in other businesses, and for other uses. This was an increase of almost 60 percent from pre-IDEA levels and is indicative of both the need to invest more funds in farm activities, and the improved creditworthiness of graduated clients.

Banks used by clients to obtain credit included Banco Fomento, Banco Hipotecario, Banco Procredito, Banco Salvadoreno, as well as the Caja de Credito.

Information Resources

Clients were asked where they obtained technical and market information after graduating from the project. While they were receiving IDEA assistance much of this information was provided directly by project technicians during weekly client visits. We wanted to determine whether clients were obtaining information from their buyers, from other resources, or whether there is an information gap that is not being met.

Access to reliable market information was clearly a concern of all graduated clients. Nearly unanimously, as one would expect, they wanted to continue to receive IDEA assistance in production and marketing. After graduating, they have relied on a variety of information sources, including buyers, government

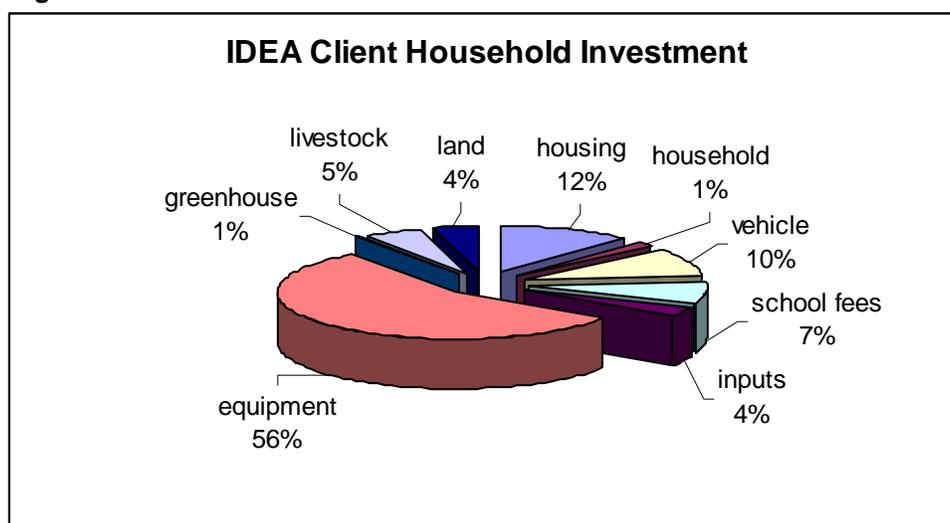
extension agents and even local NGOs. In their opinion, none of these other resources were as reliable as what was provided through IDEA.

INVESTMENT DATA

Investment in the Household

To further gauge the impact of the program on the client's family, a series of questions were asked regarding investment decisions in an attempt to identify priority expenditures that were possible because of increases in household incomes.

Figure 1: Household Investment



The 31 clients surveyed have made approximately \$343,000 in direct investments in their farms or households in the last year. Of this amount, more than \$190,000 (56 percent) was spent on equipment such as tractors, pumps, drip irrigation, plows, protective netting, etc. The next greatest expenditure, \$42,000 (12 percent) was made on housing improvements, expansion, and new purchases. Clients spent approximately \$34,000 on vehicles, \$18,000 on livestock, and more than \$14,000 on land. Seven percent of client household investment, or nearly \$25,000, was spent on school fees. The balance was spent on farm inputs (seed, fertilizers, pesticides), and miscellaneous household items such as furniture and appliances. One farmer built an additional greenhouse for tomato production for \$2,300.

Investment in Businesses

Five clients invested more than \$43,000 in either a new or existing business ventures. The investments were made in a small retail shop, a cellular phone business, a small van for a passenger transport business and a gas station. One client invested in a fruit orchard.

ANNEXES

ANNEX A: SUMMARY BEFORE & AFTER DATA ON PRODUCTION/SALES/INCOME

NAME	PRE FINTRAC ASSISTANCE						POST FINTRAC ASSISTANCE					
	Crop	Area (mz)	Cycles	Sales	Costs	Net income	Crop	Area (mz)	Cycles	Sales	Costs	Net Income
Noel Perdomo Valenzuela	Sugar Cane	12	1	10,200	4,800		tomato	2.5	1	18,430	12,200	
							green pepper	0.5	1	8,076	3,000	
Total		12		10,200	4,800	5,400		3		26,506	15,200	11,306
Dora Alicia Rodriguez	tomato	0.25	1	5,000	1,500		tomato	0.33	3	20,000	5,000	
	green pepper	0.6	1	3,000	1,500		green pepper	0.5	2	18,000	5,000	
	cucumber	0.5	2	2,000	1,100		cucumber	0.5	3	5,000	2,500	
							onion	1.5	2	8,000	3,500	
							green bean	0.5	3	5,000	2,000	
Total		1.35		10,000	4,100	5,900		3.33		56,000	18,000	38,000
Cipriano Antonio Contreras	tomato	0.5	1	2,000	1,140		tomato	1	1	15,000	5,000	
	cucumber	1	1	2,000	570		green pepper	0.5	2	15,000	5,000	
Total		1.5		4,000	1,710	2,290		1.5		30,000	10,000	20,000
Gilberto Atilio Rodriguez	cucumber	0.5	1	172	500		cucumber	0.75	1	937	333	
	cabbage	0.5	1	3,428	3,000		tomato	0.5	1	3,200	2,000	
							green pepper	0.5	1	7,500	2,000	
							green bean	0.25	1	1,750	250	
							cabbage	0.25	1	4,500	1,500	
							radish	0.125	1	1,000	125	
Total		1		3,600	3,500	100		2.375		18,887	6,208	12,679
Joaquin Armando Mejia	Corn	0.5	1	229	109		cucumber	0.25	4	1,600	1,200	
							tomato	0.25	2	12,000	2,400	
Total		0.5		229	109	120		0.5		13,600	3,600	10,000
Victor Manuel Barrientos	tomato	0.5	2	1,400	1,300		onion	2	1	14,000	5,000	
	green pepper	0.5	2	1,980	1,200		corn	2	1	3,400	750	
	corn grain	2.5	1	1,143	120					17,400	5,750	
Total		3.5		4,523	2,620	1,903		4		34,800	11,500	11,650
Jose Adolfo Rivera	citrus fruits	1	1	520	220		green pepper	0.5	1	8,200	2,000	
							cucumber	0.5	1	3,600	600	
Total		1		520	220	300		1		11,800	2,600	9,200
Manuel de Jesus Andrade	green pepper	1	2	3,400	1,500		green pepper	2.5	1	46,000	20,000	
							cucumber	2.5	2	15,000	12,500	
Total		1		3,400	1,500	1,900		5		61,000	32,500	28,500
Carlos Paisés	Sugar Cane	17		11,900	6,800		onion	1.25	1	4,400	3,200	
							green pepper	1	1	1,200	4,000	
Total		17		11,900	6,800	5,100		2.25		5,600	7,200	-1,600

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NAME	PRE FINTRAC ASSISTANCE						POST FINTRAC ASSISTANCE					
	Crop	Area (mz)	Cycles	Sales	Costs	Net income	Crop	Area (mz)	Cycles	Sales	Costs	Net Income
Noe Orellana	Corn	1	1	460	250		tomato	0.75	2	10,500	8,000	
							cucumber	1.25	5	15,000	2,500	
							onion	0.75	1	1,600	3,000	
Total		1		460	250	210		2.75		27,100	13,500	13,600
Narcisso Lopez	Cucumber	1	2	3,056	1,300		cucumber	1	1	7,000	2,000	
Total		1		3,056	1,300	1,756		1		7,000	2,000	5,000
Jaime Arnoldo Iraheta	Corn	2	1	915	435		tomato	1	3	23,400	15,000	
	Cucumber	0.5	1	1,930	1,100		green pepper	3	1	49,000	22,500	
							small cucumber	1	10	24,000	12,000	
Total		2.5		2,845	1,535	1,310		5		96,400	49,500	46,900
Jose Antonio Escobar	corn	3	1	700	250		corn	1	1	1,428	450	
	watermelon	0.5	1	3,000	600		green pepper	2.5	1	48,600	18,000	
							tomato	0.5	1	6,400	2,800	
							cucumber	1	2	4,900	2,000	
Total		3.5		3,700	850	2,850		5		61,328	23,250	38,078
Ricardo Arce Medoza	Corn	0.25	1	115	54		cucumber	0.5	1	4,130	1,500	
							squash	1	2	4,110	1,400	
Total		0.25		115	54	60		1.5		8,240	2,900	5,340
Jose Alberto Lopez	none	0	0	0	0		squash	1	1	2,206	400	
Total		0		0	0	0		1		2,206	400	1,806
Adelo Gallegos	Sugar Cane	22	0	15,400	8,800		tomato	1.5	1	20,000	8,250	
							cucumber	1	1	3,300	2,000	
							green pepper	1	1	15,000	7,000	
							onion	1	1	3,200	2,000	
Total		22		15,400	8,800	6,600		4.5		41,500	19,250	22,250
Carlos Humberto Gallegos	none	0	0	0	0		green pepper	1	1	11,000	5,500	
							tomato	0.5	1	6,400	4,500	
Total		0		0	0	0		1.5		17,400	10,000	7,400
Ruben Echegoyen	none	0	0	0	0		fruit trees	11	1	31,200	24,960	
Total		0		0	0	0		11		31,200	24,960	6,240
Juan Carlos Infantozzi	platano	4	1	1,600	1,100		platano	17	1.5	2,700	2,500	
Total		4		1,600	1,100	500		17		2,700	2,500	200
Israel Sanchez Diaz	none	0	0	0	0		squash	2	2	7,800	3,600	
							green pepper	1	3	54,000	18,000	
							tomato	0.5	1	4,000	3,000	
Total		0		0	0	0		3.5		65,800	24,600	41,200

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NAME	PRE FINTRAC ASSISTANCE						POST FINTRAC ASSISTANCE					
	Crop	Area (mz)	Cycles	Sales	Costs	Net income	Crop	Area (mz)	Cycles	Sales	Costs	Net Income
Francisco Antonio Mondragon	green pepper	1	1	175	1,500		cucumber	0.5	2	4,550	2,000	
	tomato	1	1	195	1,000							
	cucumber	1	2	2,400	200							
Total		3		2,770	2,700	70		0.5		4,550	2,000	3,550
Baltimore Garcia Perdomo	cucumber	1.5	1	1,520	980		green pepper	2.5	1	48,000	12,000	
	tomato	0.5	1	2,720	1,200							
	green pepper	1	1	2,540	1,100							
Total		3		6,780	3,280	3,500		2.5		48,000	12,000	36,000
Rene Humberto Martinez	cucumber	0.5	2	3,200	350		tomato	0.5	1	7,500	4,000	
							pepper	0.75	2	8,000	4,500	
							cucumber	0.75	2	4,368	3,500	
Total		0.5		3,200	350	2,850		2		19,868	12,000	7,868
Rene Alberto Ayala	Corn	8	1	3,660	1,740		green pepper	0.5	1	24,000	4,500	
							cucumber	0.5	3	5,040	3,000	
							tomato	0.5	1	3,500	2,500	
							corn	0.5	1	750	200	
Total		8		3,660	1,740	1,920		2		33,290	10,200	23,090
Miguel Angel Rivera	green pepper	0.5	1	3,600	2,000		green pepper	1	4	57,600	32,000	
	cucumber	0.5	1	3,000	750		cucumber	0.5	12	14,400	9,000	
	watermelon	1	1	6,000	1,100							
Total		2		12,600	3,850	8,750		1.5		72,000	41,000	31,000
Jorge Marquez	none	0	0	0	0		cucumber	0.25	12	7,200	4,500	
							green pepper	0.5	2	15,000	5,500	
							squash	2	1	2,223	1,150	
Total		0		0	0	0		2.75		24,423	11,150	13,273
Oscar Alfredo Mondragon	green pepper	0.5	1	4,550	1,000		green pepper	0.5	2	10,500	4,000	
							cucumber	0.5	2	1,840	1,500	
	Total		0.5		4,550	1,000	3,550		1		12,340	5,500
Alberto Ericson Jobel Munoz	Corn	1	1	2,100	600		jalapeno peppers	1	1	15,500	4,000	
	Beans	1	1	700	400							
Total		2		2,800	1,000	1,800		1		15,500	4,000	11,500
Manuel de Jesus Lobo Gaitan	cucumber	0.5	1	480	250		cucumber	0.5	2	3,600	800	
	squash	0.5	1	130	110		squash	0.75	1	2,160	900	
Total		1		610	360	250		1.25		5,760	1,700	4,060
Jose Heriberto Bonilla	Corn	4	1	4,906	2,943		green pepper	2.2	1	49,000	15,000	
Total		4		4,906	2,943	1,963		2.2		49,000	15,000	34,000
Hermes Guardado	coffee	3	0	0	0		greenhouse tom	0.157	1.3	29,250	9,030	
Total		3		0	0	0		0.157		29,250	9,030	20,220
TOTAL		100		117,424		60,952		94		933,048		519,150

ANNEX B: SAMPLE SURVEY OF GRADUATED CLIENTS

1) Client information:

Name		
Village/town name		
Family size (adults and children) in household	Adults	Children (under 16)
Property size (mz)		
GPS location	Longitude:	Latitude:
Distance of farm from nearest paved road (km)		
Sector: Producer, processor, exporter, other		
Dates farmer received IDEA assistance (month/year)	From:	To:
Describe assistance received (production, post harvest, processing)		
Name of IDEA advisor who provided the majority of assistance		
Date graduated from program		

2) Baseline information for 12 months immediately preceding IDEA assistance:

Farm Characteristics <ul style="list-style-type: none"> • size (mz) • land area owned (mz) • land area leased (mz) • elevation (m) • irrigation (y/n) • irrigation system (y/n) if yes, drip, spray, gravity, other • elevated plant beds (y/n) • contour farming (y/n) • hybrid seeds (y/n) • seedlings (y/n) • fertilizer (y/n) 	
	# of manzanas:

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<ul style="list-style-type: none"> • fertigation (y/n) • pesticides (y/n) • pesticide safety practices (mixing site, protective clothing, container disposal) • IPM (y/n) • Mechanical barriers (y/n) • Greenhouse (y/n) 		
Number of days per year household members are primarily occupied with farming. Percentage of total household income.	Days:	Percent of total income:
Other principal occupation(s) of household members. Percentage of total household income.	Days/Occupation:	Percent of total income:
Types of crops grown (average area of each)	Crop	Average area (mz)
Number of crop cycles per year for each crop	Crop	Number crop cycles/yr
Total production per crop per crop cycle	Crop	Production (unit/mz)
Total sales per crop per crop cycle	Crop	Sales (\$)
Gross income (total sales) for 12 month baseline		
Net income (sales less expenses) for 12 month baseline		
principal market(s)	If multiple markets, estimate percentage to each	

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<ul style="list-style-type: none"> • IPM (y/n) • Mechanical barriers (y/n) • Greenhouse (y/n) 		
<p>Number of days per year household members are primarily occupied with farming. Percentage of total household income.</p>	Days:	Percent of total income:
<p>Other principal occupation(s) of household members. Percentage of total household income.</p>	Days/Occupation:	Percent of total income:
<p>Types of crops grown (average area of each)</p>	Crop	Average area (mz)
<p>Number of crop cycles per year for each crop</p>	Crop	Number crop cycles/yr
<p>Total production per crop per crop cycle</p>	Crop	Production (unit/mz)
<p>Total sales per crop per crop cycle</p>	Crop	Sales (\$)
<p>Gross income (total sales) for 12 month baseline</p>		
<p>Net income (sales less expenses) for 12 month baseline</p>		
<p>principal market(s)</p> <ul style="list-style-type: none"> • local farm market • coyote • wholesaler • retailer • international/export • other (explain) 	<p>If multiple markets, estimate percentage to each</p>	

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c. Terms of loan (interest rate, duration)	
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5) Consumption information

Provide total household income for year before receiving assistance and for most recent 12 month period. Obtain estimates for spending patters for both periods.

	12 month prior to IDEA	Most recent 12 months
Household income	\$	\$
Expenditures:		
• Housing		
• Furniture/appliances		
• Vehicle (auto, motorcycle, bicycle other)		
• School fees		
• Food/beverages/restaurants		
• Clothing, other (describe if large purchase)		
• Farm expenditures		
a. Labor		
b. Inputs (seed, fertilizer, pesticides)		
c. equipment (bedmaker, irrigation, tractor, plow, other- describe)		
d. building (barn, greenhouse, packhouse, other)		
e. Livestock		
f. Other (explain)		
• Other significant expenditures (explain)		

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6) Information resources

<p>Where did you obtain technical production information before IDEA? Where do you obtain it now? Choices: extension service/government, family/friend, input supplier, buyers/traders, newspapers/magazines, radio/tv, university/agriculture college, donor project (name the project), other (describe)</p>	<p>Prior to IDEA</p>	<p>Currently</p>
<p>Where did you obtain market information before IDEA? Where do you obtain it now? Choices: extension service/government, family/friend, input supplier, buyers/traders, newspapers/magazines, radio/tv, university/agriculture college, donor project (name the project), other (describe)</p>	<p>Prior to IDEA</p>	<p>Currently</p>
<p>Would you like to receive advice/assistance from IDEA on new crops and/or new markets? (y/n)</p>		

ANNEX C: CLIENTS SURVEYED, NAMES AND FARM LOCATIONS

NAME	MUNICIPALITY, DEPARTMENT
Noel Perdomo Valenzuela	Atiquizaya, Ahuachapan
Dora Alicia Rodriguez	El Refugio, Ahuachapan
Cipriano Antonio Contreras	El Refugio, Ahuachapan
Gilberto Atilio Rodriguez	San Lorenzo, Ahuachapan
Joaquin Armando Mejia	Atiquizaya, Ahuachapan
Victor Manuel Barrientos	San Juan Opico, La Libertad
Jose Adolfo Rivera	San Juan Opico, La Libertad
Manuel de Jesus Andrade	Zapotitan, La Libertad
Carlos Paisés	San Juan Opico, La Libertad
Noe Orellana	San Juan Opico, La Libertad
Narcisso Lopez	Zacacoyo, La Libertad
Jaime Arnoldo Iraheta	San Luis Talpa, La Paz
Jose Antonio Escobar	San Luis Talpa, La Paz
Ricardo Arce Medoza	San Pedro Masahuat, La Paz
Jose Alberto Lopez	San Pedro Masahuat, La Paz
Adelo Gallegos	San Juan Opico, La Libertad
Carlos Humberto Gallegos	San Juan Opico, La Libertad
Ruben Echegoyen	Tecoluca, San Vicente
Juan Carlos Infantozzi	Puerto Parada, Usulután
Israel Sanchez Diaz	Concepcion Batres, Usulután
Francisco Antonio Mondragon	San Miguel, San Miguel
Baltimore Garcia Perdomo	San Miguel, San Miguel
Rene Humberto Martinez	San Miguel, San Miguel
Rene Alberto Ayala	San Miguel, San Miguel
Miguel Angel Rivera	San Miguel, San Miguel
Jorge Marquez	San Miguel, San Miguel
Oscar Alfredo Mondragon	San Miguel, San Miguel
Alberto Ericson Jobel Munoz	Tecoluca, San Vicente
Manuel de Jesus Lobo Gaitan	Zacatecoluca
Jose Heriberto Bonilla	San Vicente, San Vicente
Hermes Guardado	Jayaque, La Libertad