USAID/Nicaragua Title II Development Assistance Programs 2002-2008

FINAL EVALUATION

Implemented By:
Adventist Development and Relief Agency
Catholic Relief Services
Project Concern International
Save the Children USA

Performed By

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Table of Contents

ACRONYMS

ACODEP	Asociación de Consultores para el Desarollo de la Pequeña y Mediana Empresa/Association of Consultants for Small & Medium Enterprise Development
ADRA	Adventist Development and Relief Agency
AINC	Atención Integral a la Niñez en la Comunidad/Holistic Children's and Community Care
ARI	Acute Respiratory Infection
BPA	Best Practices in Agriculture
CAPS	Comité de Agua Potable y Saneamiento/Water and Sanitation Comité
CATIE	Centro Agronómico Tropical de Investigación y Enseñanza/Center for Research and Teaching for Tropical Agronomy
CEPRODEL	Centro para la Promoción del Desarrollo Local/Center for the Promotion of Local Development
CEPS	Centro de Estudios Para la Promocion Social
CRN	Casa Rural del Nino
CRS	Catholic Relief Services
CS	Cooperating Sponsor
DA	Direct Assistance
DAP	Development Assistance Program
DHS	Demographic Health Survey
EMPROQUISA	Empresa de Productores de Quilalí S.A./Producers' Enterprise of Quilalí
FFP	Food For Peace
FFW	Food For Work
FIDER	Foundation for Research and Rural Development
FINDESA	Financiamento Nicaragüense para el Desarollo S.A./Nicaraguan Finance for Development Inc.
FODEPRAG	Fondos de Desarollo de la Production Agrícola/ Agricultural Production Developmnt Fund
FODEM	Fondo de Desarrollo de la Mujer/Women's Development Fund
FUNICA	Fundación para el Desarrollo Tecnológico Agropecuario y Forestal de Nicaragua/Agricultural & Forest Technological Development Foundation
INIES	Instituto Nicaraguense de Investigaciones Económicas y Sociales
INTA	Instituto Nicaragüense de Tecnología Agropecuaria/Nicaraguan Agricultural Technology Institute
IPM	Integrated Pest Management
LOP	Life of Project
MAGFOR	Ministerio Agropecuario y Forestal/Ministry of Agricuture & Forestry
MCH	Maternal Child Health
MFI	Microfinance Institution
MINSA	Ministerio de Salud/Ministry of Health
MINED	Ministry of Education
MSU	Michigan State University
NGO	Non Government Organization
NRM	Natural Resource Management

ORT	Oral Rehydration Therapy
PCI	Project Concern International
PFID	Partnership for Food Industry Development
PROCENI	Programa Comunitario de Extensión y Nutrición Integral/Holistic Community Extension and Nutrition Program
PROCOA	Productores y Comercializadores Agrícolas S.A./Agricultural Producers and Marketers Inc.
PROCONTSA	Productores y Comercializadores No-Tradicionales S.A./Non-traditional Producers and Marketers Inc.
PROCOSAN	Programa Comunitario de Salud y Nutrición/Community Health and Nutrition Program
PVO	Private Voluntary Organization
SCF	Save the Children Federation
SILAIS	Sistema Local de Atención Integral de Salud/Holistic Local Health Care System
SIVINDA	System of Nutritional Vigilance and Food Distribution
SOPROCON	Sociedad de Productores y Comercializadores de Responsabilidad Limitada/Society of Producers and Marketers of Limited Liability
TT	Toxoide Tetanico/anti-tetanus vaccine
VIP	Ventilated Improved Pit (Latrine)
WSS	Water Supply and Sanitation

I. Executive Summary

The northern Departments of Nicaragua, including all those where Title II-supported activities are taking place, are generally characterized as poor, neglected, and facing difficult topographical and weather conditions. Rural communities rely on agriculture for their livelihoods, yet productivity and income are low and health conditions have been abysmal. Four U.S. Private Voluntary Organizations were awarded PL 480 Title II grants for implementing their Development Assistance Programs during the period FY 2002 through FY 2008 to improve the food security conditions in selected northern communities. The implementers, called Cooperating Sponsors (CSes), are Catholic Relief Services (CRS), Project Concern International (PCI), Adventist Development and Relief Agency (ADRA), and Save the Children USA (SCF).

The overall strategic objective of this Food For Peace (FFP) program is to improve food security for rural families, to be achieved through increased income from agricultural and non-agricultural activities, improved health and nutrition of women and children, and improved sanitary conditions. The program began in 2002, and at present it has ten months remaining until close-out.

The program results to date can be summarized as generally successful in reaching the targets of increased productivity and profitability in agriculture, increased income generation in off-farm activities, diversified diets and improved nutrition for all participating families, improved availability of potable water and sanitary conditions, and reduction in the prevalence of malnutrition in young children. For participants in commercial agriculture and small business, the impacts of the program on income have been significant and in some cases dramatic. Even for the much greater number of participants working in subsistence agriculture, while it is difficult to quantify cash and in-kind income gains, the quantity, variety, and nutritional value of crops has certainly grown.

Over 63,000 mothers have learned to track the weight gains of their young children and administer more nutritious diets during early childhood. Education programs for better health practices, care for diarrheal disease and acute respiratory infection, safe motherhood, and adoption of the "Community Health and Nutrition Program" are ongoing. Hundreds of village health volunteers have been trained to assist and advise them, with the support of the Ministry of Health (MINSA). Potable water and latrine installations have made major contributions to village hygiene and general health within selected communities.

Food For Work programs have supported the rehabilitation of roads, the conservation and reforestation of lands, performance of public works, and preservation of water resources. Temporary jobs were created for 97,732 people and food deficits in the dry season (February to May) were reduced. Over 44,000 manzanas (one manzana equals 1.725 acres) are protected under natural resource management norms and more than 10,000,000 trees were planted.

In terms of sustainability, many of the farms and agribusinesses established under this project have acquired the production, management, and marketing skills necessary not only to maintain their significant income achievements, but to grow and reach more producers after project end. In health, water, sanitation, and small-scale agriculture, the project has made visible and positive

impacts that can endure as long as beneficiaries continue to practice what they have learned, although there are doubts about the ability of the public health system to provide critical services for the new maternal/child health program hitherto obtained through Title II support. Replication is not likely for many of the activities being implemented, other than commercial agriculture, since most rely on technical assistance, training, donation of technologies and inputs, or transportation from the project for their introduction to new beneficiaries. The infrastructure and environmental work undertaken with Food For Work is, of course, designed not for sustainability but rather the impacts that are possible while food distribution continues.

Combined participation reported by the Cooperating Sponsors total 257,379 beneficiaries to date. Following is a brief discussion of the accomplishments in each sector by each of the Cooperating Sponsors.

Income generation in agricultural and non-agricultural activities

Most FFP resources are dedicated to agriculture, though there also were loans and technical training oriented toward petty commerce and small manufacturing. In the agriculture sector, the great majority of beneficiaries grow basic grains and/or cultivate small family fruit, vegetable, and staple gardens. A smaller proportion is involved in commercial horticulture using modern inputs and technologies, and these are the beneficiaries who have realized the greatest income gains.

PCI assisted 1,518 farmers, or 117% of its goal of 1,300, women equaling only 15% of participating farmers. Interventions included organization and technical assistance to coffee and potato growers, among others. Productivity has improved, but more work is needed to make new producer organizations self-reliant. To support commercial agriculture, PCI used FFW rations to rehabilitate or build 93 kilometers of rural roads and to protect 2,300 manzanas (one manzana equals 1.725 acres) of hillsides with various reforestation activities (250,000 trees planted) and soil conservation measures. Credit programs have assisted the development of 80 non-agricultural businesses. Average annual net income for participating farmers grew 156% in five years, reported on 12/07/07 to have grown from $246 to $631 by 2006.

CRS has introduced commercial vegetable farming and productive technologies, and has assisted growers with organizational training, credit access, and marketing. Its agricultural activities have reached 6,812 farmers, representing 136% of its target. Twenty-one percent of these were women. While the impact on incomes of the more technological of the farmers (who have productive lands) have been impressive, the very poor have not realized a noticeable economic improvement – although there have been some gains in food security. CRS and its local credit partners lent a total of $3,057,497 toward the adoption of new crops, livestock, and productive technologies. Over 570,000 trees have been planted and 19,000 manzanas now exhibit natural resource management practices. Average annual net income increased over five-fold in six years, currently shown at $1,900 per annum for participating producers.

ADRA's agriculture program concentrates on several categories of farming: kitchen gardens, basic grains, commercial crops and value chains. Particular emphasis has been put on four producer-owned for-profit marketing companies that are now operating on a sustainable basis

and are already winning recognition from institutional clients nationwide for their quality and reliability. Beneficiaries number 16,841 in agriculture, of which 58% are women. One hundred and forty of these receive support for their income generation activities and net average income has grown to $3,600 per annum by FY 2007; the remaining 97% subsistence farmers receive assistance with basic grains production and family gardens. ADRA's credit component lent $524,476 to support agricultural activities and $4,931,113 for other income-generating activities. Using FFW, ADRA rehabilitated 110 kilometers of roads and planted over 6.2 million trees, two-thirds of which have survived for one year or more.

SCF's agriculture program has reached 20,170 beneficiaries, 54% of them women, achieving 118% of the life-of-activity target. The program includes support for garden, basic grains and commercial farming through technical assistance, training, and input provision, but with a greater effort on small-scale basic grains farming. A more recently initiated commercial agriculture component is now showing promise. SCF rehabilitated 712 kilometers of roads, supported soil conservation of 1,477 manzanas, and reforested through planting of nearly 1,000,000 trees using FFW resources.

Improved health and nutrition of women and children

The health and nutrition activities under this project have emphasized weight gain monitoring and counseling, improved nutrition, and distribution of wet and dry rations to mothers of young children and pregnant women. These strategies have been responsible for nearly or completely surpassing target reductions in the incidences of underweight children in selected communities in the northern parts of the country.

The PCI health program component reached 12,904 beneficiaries (pregnant and lactating mothers, children under two years old) in 112 communities by training 454 village health volunteers, monitoring the health of young children and pregnant women, providing guidance on their health care, promoting better nutrition, and developing community birth plans. PCI helped introduce the 'Safe Motherhood' program in 14 communities and its success is leading to further expansion. Malnutrition was reduced 35% to a current prevalence of 14.6% among the targeted 10,194 children under two years old.

CRS has been educating parents on health issues relating to young children, distributing food, monitoring weight gain among children, providing guidance on health care and training community health volunteers. Its program has reached 2,865 males and 10,933 females, while providing support to 290 volunteers. Training has featured nutrition, prevention of diarrheal and respiratory diseases and promotion of breastfeeding. Overall, chronic malnutrition appears to have stabilized, as CRS has been recently more focused on municipalities with more severe problems. Exclusive breastfeeding adoption, at 80% in the target communities for infants under six months old, is a significant increase over the baseline and far above the national rate. A disaster preparedness planning exercise was carried out in 30 communities.

ADRA's health programs have reached 70,031 beneficiaries in 154 rural communities, counting all participating mothers and children. In addition to its feeding and health monitoring for small children and pregnant women, ADRA's social medicine outposts in rural communities have

brought affordable medicines to hitherto uncovered locations on a sustainable basis. The establishment of MINED 'Base Houses' was a new feature under the ADRA program, where community health activities are now concentrated. This approach contributed to the reduction of chronically malnourished children under two years old, down from 46% in FY 2002 to 12% in FY 2007. Similarly, the percentage of wasting children was dramatically reduced from 53.5% in 2002 to 16.4% by FY 2007.

SCF reached 23,824 health beneficiaries, or 232% of the planned life-of-activity target. These included 13,210 mothers and 10,614 children. (Many of these mothers are counted in other participation categories rather than under Health in the Beneficiaries Section V D.) SCF concentrates community health activities at 'Community Children's Centers' and great improvements in reducing chronic malnutrition of children under two years old was achieved, from 22% in FY 2002 to 10% in FY 2007. In addition to food distribution, weight gain monitoring, and training of mothers for improved infant nutrition, SCF's health component also focused on early childhood learning through regular interactive play and stimulation.

Improved sanitary conditions

The water and sanitation component of the project has targeted the lack of potable water and hygienic facilities in rural communities. The measures taken include well excavation, pump installation, aqueduct construction, distribution network installations, forming of community water management committees, latrine construction, and education on water- and hygiene-related health topics.

PCI's program constructed or rehabilitated 27 potable water systems, serving roughly 10,500 users in the Department of Jinotega, and participated in the building of latrines serving 1,194 households (6,567 beneficiaries). Since Jinotega is mountainous country, 21 of the potable water systems rely on gravity flow. Five wells were dug and one electric-powered borehole pump was installed. Community water committees were formed and assistance with management training was an important component, as were the establishment of user fee and maintenance systems.

ADRA has constructed 78 small potable water systems in Nueva Segovia and Madriz, of which most are wells with rope-and-washer pumps. They serve approximately 6,800 users. ADRA also assisted in the construction of latrines for 1,000 families. Community trash clean-up and garbage management was a precondition for participation.

Project funding

Total commodity and financial resources reported by the Cooperating Sponsors, since inception and anticipated for FY 2008 are 37,121 metric tonnes of rations and monetized commodities, and financial resources of $39,191,487 in 202e funds and sales of monetized commodities (mainly wheat). Adjustments to originally planned levels were made during the initial implementation period (FY 2002 – FY 2006) and then again in the extension period (FY 2007 – FY 2008). The reductions over planned resource levels, reported anecdotally at roughly 20% of the totals, resulted in some corresponding reductions to certain planned activities, their targets, and their achievements.

Recommendations

Within the framework of the substantial achievements of the Food For Peace activities, following is a summary of recommendations for implementation during the remaining ten months of the Development Assistance Programs (DAPs) and for future activities carried out by the Cooperating Sponsors in Nicaragua. Some recommendations could be useful anywhere that similar conditions and program objectives prevail. These recommendations are general in nature; more specific ones appear at the ends of the technical sections.

With the objective of improving rural farming welfare through income generation, agricultural promotion should be targeted toward those families who have enough quality land, water, and human/financial resources to provide a viable starting point. Assistance to poor families not having these requisite resources should focus more on health, education, and employment creation, avoiding use of scarce development funds in attempts to make such marginal farms more commercial. For the best results, agriculture should be market-oriented and guided by good business principles. Producers can increase their profitability and efficiency by associating into enterprises that handle their combined processing, marketing, input purchases, and technical support needs.

In health, water and sanitation activities, sustainability should be encouraged through cost recovery, i.e. community pharmacies that cover their procurement and operating costs through the prices they charge, local health committees who collect funds to meet the costs of medical emergencies, and metering and commensurate charging for water consumption.

Assistance programs should build in 'graduation' systems for participants, whereby beneficiaries are moved out and no longer receive resources after a reasonable period (roughly three years for most programs) and replaced with people not assisted earlier. Programs need to be designed whereby those who receive assistance at a basic level should be expected to cover more of their costs at the next level, and be able to reach a higher level of productivity, until after a set period they are expected to assume complete responsibility for their activities and become independent. Project resources can then be redirected toward a new set of beneficiaries.

Those Cooperating Sponsors (CSes) who have credit programs need to finish defining and implementing their exit strategies, specifically determining what will be done with the loan capital now being used (by the CS or other microfinance institutions) and how some beneficiaries will be moved from project-based lending to local microfinance institutions. Availability of credit is an essential input for commercial agriculture by small and medium-scale producers. Any development program focused on commercial farming should factor credit into the equation. Unsubsidized credit availability should be considered an essential component of sustainable agriculture activities.

In general, CS infusions of technology or materials as grants or as subsidies should be made with forethought of the ultimate result being sought. When the intended result is income generation, then replacement costs should be factored into calculations of net income and provisions should be made for replacement when a fixed asset is fully amortized. When the result sought is less

tangible (such as improved nutrition and general health), the creation and maintenance of local, community-based capacities should be a major focus of resource use.

With less than ten months left before termination of the DAPs, it is recommended that no new, untried Title II pilot activities be undertaken by the CSes. If additional resources will be available to continue or expand existing, successful activities, then efforts to segue them into those 'new' initiatives should be started very soon. Not all last-year work plans consider this possibility, but perhaps this is most prudent. Overall, close-out plans are reasonable, although the need to rely on MINSA to pick up most health interventions is unfortunate.

The CSes are encouraged to reinforce and prioritize the nutritional strategy by focusing on the most vulnerable mothers, malnourished children, and new participants in the health activities being implemented during the last ten months of the DAPs. It is recommended that the CSes consider spreading the 'Social Medicine Outpost', plus the 'Base' and 'Children's Community' House models to other communities and to take them into account for other food security programs that the Nicaraguan government or other stakeholders may implement in the future.

For all targeted communities, it is recommended that the CSes strengthen the health messages on behavioral and sustainable changes. This could include more emphasis on hygiene and overcoming cultural or social inhibitors to behavior changes.

Each CS measured progress through their DAP in different ways. This made joint reporting more difficult, as well complicating the measurement of effectiveness through different approaches and strategies. For future development assistance interventions, we recommend that a concerted effort be made to standardize the progress indicators to be used by the implementing organizations tackling the same problems/needs. This standardization should include the definitions of the indicators and the methodologies used to collecting data.

Income growth for individual participants is a valuable progress measurement. However, it is less useful when participating producers are not differentiated by baseline income or crop type, as subsistence farmers and more advanced commercial farmers are lumped together inappropriately when measuring net income. Also, showing average net income is less useful than reporting median net income, as enormous gains by a handful of farmers can overshadow income stagnation or even deterioration by a much larger group of subsistence farmers and still show a big improvement in average net income.

Cultural conditions make it difficult to include similar numbers of women and men in commercial horticulture/business activities and family health activities; yet it is important to improve the gender balance and include more women and men, respectively. One strategy may be to actively recruit young women and men as participants who are still open to change and who recognize the need for inclusive roles in the household.

When projects finance or partially finance technology adoption (including machinery, plants or livestock, buildings, equipment) it is important to keep the cost of the technology in line with the scale and profitability of the activity. When a particular intervention is considered experimental and risky and when a project seeks farmer involvement without unduly exposing them to harsh

financial penalties, there are measures that can be taken to mitigate risk to farmers. A project can include provisions to compensate farmers at a certain level in the event of failure; that level could cover their costs and be equal to their opportunity cost for whatever they would be growing otherwise.

Model farms should be the best of the regular farms, rather than special creations of projects that benefit from unusual levels of resources. Artificially-created model farms do not make legitimate examples for replication.

If Food For Work or other programs support reforestation, a component of the effort should be to include coverage for one or two years of post-planting maintenance in addition to planting, and monitoring of tree survival rates should be done.

All CSes should soon reach formal agreement with USAID on the disposition of equipment, supplies, and funds that were obtained through the DAPs. With such agreements in hand, the CSes can initiate transfers to other organizations or other dispositions by September 2008.

II. Introduction

The Evaluation Team, headed by Timm Harris, was selected by Adventist Development and Relief Agency, Catholic Relief Services, Project Concern International, and Save the Children USA to perform the final evaluation of the four corresponding Development Assistance Programs, in compliance with the requirements of USAID's Food For Peace Program and the Terms of Reference established by the four Cooperating Sponsors (CSes). The evaluation commenced in early November 2007, with the completion date set for December 14, 2007.

As per the Evaluation Contract, more focus is placed on the results achieved and the impact of the Development Assistance Programs. Audits of fund and commodity allocations have already been done and resource usage *per se* was not reviewed. The Monitoring and Evaluation systems of the CSes were not evaluated in detail, nor was the quality of the data generated by the individual Monitoring and Evaluation units investigated or audited for accuracy. Observations and receipt of data showed that all CSes appeared to have excellent monitoring and evaluation systems. Data Quality Assessments were performed in April 2007 on all four CSes and their respective DAPs and all received high marks from the assessment team. This allowed the Evaluation Team to concentrate on accomplishments, performance and meeting of targets, as well as the changes and benefits of assistance efforts through FY 2007.

Upon arrival of four Evaluation Team members (November 12, 2007) and unification with the five Nicaraguan Team members, the first tasks were to reconstruct a timeline for the performance and completion of evaluation benchmarks, finalize a detailed guideline for field and office questions, and specify individual field data collection methodologies for each CS (see Appendix VIII C). Joint and individual meetings were held with the CSes. Liaison personnel were selected and field sites to be visited were identified, concurrently with review of such relevant documents as the DAP Agreements and Amendments, Annual Progress Reports, detailed statistical reports, and others (see list in Appendix VIII B).

After the first week in Managua, the Evaluation Team (divided into two sub-teams covering two CSes each) proceeded to the field for nine days, working first with SCF in the Department of Chinandega and with PCI in the Department of Jinotega, and second with ADRA in the Departments of Nueva Segovia and Madriz and with CRS in the Departments of Jinotega, Estelí, and Matagalpa. Site visits, discussions and interviews were held with CS representatives and their field staff, local implementing partners, participants and beneficiaries (both in groups and individually), and governmental officials (see Appendix VIII A).

Upon return to Managua, the reunited Evaluation Team reviewed its findings, discussed them with USAID/Nicaragua and the CSes, sought additional data, and prepared a first draft of the evaluation. This was shared with the CSes and USAID for review and comments. With these inputs, the Final Evaluation report was completed. It was presented mid-December and a wrap-up presentation and discussion were held.

III. Background

USAID's efforts to assist Nicaraguans with improved agriculture, credit access, health, education, and nutrition have been ongoing since the inception of USAID assistance back in the 1960's. After a hiatus in the late 70's and through the 80's, efforts were renewed in 1990 and are continuing to date. With the impetus from Title II and the expanded vision of food security, USAID/Food For Peace (FFP) and USAID/Nicaragua, through their implementing partners, are emphasizing economic growth and a better educated and healthier populace.

Adventist Development and Relief Agency, Catholic Relief Services, Project Concern International, and Save the Children USA submitted DAP proposals in mid-2001 to USAID/FFP and were awarded five-year grants for Title II food security efforts through food supplements, Food For Work, and monetization of commodities. Subsequently the DAPs were extended through FY 2008. Direct Distribution Commodities and funding have been allocated as follows.

Name	MT Commodities	202e	Monetization	Total $ thru FY 08
ADRA	10,875	$1,354,089	$8,529,863	$9,883,952
CRS	10,260	$879,634	$7,559,686	$8,439,320
PCI	9,610	$1,291,308	$9,256,761	$10,548,069
SCF	6,376	$1,327,215	$8,992,931	$10,320,146
Totals	**37,121**	**$4,852,246**	**$34,339,241**	**$39,191,487**

Throughout the implementation period, there were significant difficulties in balancing levels of effort and implementation schedules with resource allocations. Delays in reception of commodities and financial resources, coupled with unplanned reductions in their overall amounts led to periodic delays or even cancellation of activities. Consequently, accurate planning and setting of performance targets were harder to calculate and the ability to adjust quickly and flexibly to changing circumstances became increasingly part of operations. Food For Work activities were perhaps the most adversely affected, as recipients sometimes did not receive full rations or on time and some scheduled work had to be curtailed. Despite these problems, FFP activities were successful and a major part of USAID's development efforts. The program was used to bolster USAID efforts with a coffee price crisis and with the aftermath of Hurricane Felix. USAID/Nicaragua and other Missions around the world generally included FFP activity achievements as part of country-wide accomplishments, even though this was not mandatory. Results were increasingly included in annual reporting (this became the operational norm for FY 2006 onwards) and FFP activities were melded into country strategic plans. Certainly for USAID/Nicaragua the pending termination of Title II activities in FY 2008 will bring an enormous reduction in the number of Nicaraguans benefiting from USAID assistance and a major reduction in the impact of its program.

V. Activities and Accomplishments

In the Activities and Accomplishments section of the evaluation, each activity is addressed under the individual Cooperating Sponsor (CS) and is organized with the same basic format in the following order: specific problems and needs of the target population; intervention goal and/or purpose; description of the CS intervention and key performance results; evaluation findings and conclusions; and evaluation recommendations for short-term and long-term actions by the CS and its implementing partners. Where problems and needs are the same for all CSes, as well as the goal and purpose, these will be noted under the activity heading. The Cooperating Sponsors are the most important non-governmental organizations working with their target communities and the progress achieved is largely attributable to their efforts.

A. Health

Weighing children in Jinotega

Entering health statistics in Estelí

The major elements in the CS assistance to health in the targeted communities has been maternal/child health (especially for young mothers and children under two years old) and nutrition of the family. The communities covered in health have been selected under the following criteria: the prevalence of malnutrition, the communities located in dry zones, and priority given to those communities targeted for CS agriculture interventions.

All CSes are working within existing structures being operated through the Ministry of Health at the community level, concentrating heavily on the efforts of community health centers and health volunteers ('brigadistas'). Initially the program started using the Community-based Integrated Care for Children Strategy (AIN-C), which was recently reformed with more emphasis in nutritional aspects, such as growth monitoring sessions, nutritional education and food utilization. The new Community-Based Health and Nutrition Strategy (PROCOSAN), is being implemented at different adoption rates in all Departments through the "Local Systems of Integral Attention on Health" (SILAIS). The SILAIS works in coordination with the health centers, Base Houses, Community Children's Centers and with health personnel and volunteers. PROCOSAN´s strategy focuses on strengthening the interrelation between the health services and the community, on reducing the prevalence of malnourished children, and on promoting

better eating practices for the family's nutritional improvement.

In addition, PROCOSAN, as an institutionalized program at the SILAIS level, is designed to: improve community health practices and care seeking behavior; increase coverage of maternal/child heath (MCH) service delivery; and improve early childhood stimulation. PROCOSAN´s efforts focus on the promotion and surveillance of each child's monthly growth through monitoring and growth promotion sessions.

The global results presented by the CSes have demonstrated that the majority of beneficiaries have achieved results much better than national results and those of neighboring communities outside the CS coverage areas. According to the Nicaraguan Demographic and Health Survey (DHS 2007), the national prevalence of chronic malnutrition for children under five years old is 17%. In the areas of Nueva Segovia, Chinandega, and Jinotega it is evident that most of the Title II interventions have achieved significant results in lowering the rate of chronic malnutrition. Per the CSes' FY 2007 Results Reports, the change from FY 2002 to FY 2007 in malnutrition are; ADRA – from 49.3% reduced to 11.6%; SCF – from 22.4% to 9.6%; PCI - from 22.6% to 14.6%; and CRS (no significant change) – from 17% to 16.8%.

1. Catholic Relief Services

Catholic Relief Services has been implementing the USAID Title II Program in the Departments of Jinotega, Matagalpa, and Estelí, where most of the people are living in poverty. Low income levels, insufficient food supplies to meet basic nutritional needs, and inadequate practices and utilization of available food, are factors that contribute to malnutrition in the population, especially children and pregnant women. Together with these limitations, there have been insufficient markets and poor transportation conditions for local products. According to the Nicaraguan Demographic and Health Survey (DHS 2007), in the Department of Jinotega 33% of children under five years old are suffering of chronic malnutrition, in Matagalpa 26% are chronically malnourished, and in Estelí the level is 11%.

The goal of the health component for the Catholic Relief Services (CRS) Title II Development Assistance Program (DAP) is to "**Improve Health and Nutrition for Women and Children under Two Years of Age**". CRS works in collaboration with the Ministry of Health (MINSA) to facilitate the implementation of the Community Integrated Child Attention (AIN-C) and the new Community-based Health and Nutrition Program (PROCOSAN) strategies, the latter now being implemented in half of the municipalities. The intermediate results for the health component are: 1) appropriate community-level management of the principal illnesses that cause death of children under five years old; 2) improved community-level pregnancy and post-partum access to information concerning child development; and 3) improved nutrition of pregnant women and children under two years of age.

Working in coordination with MINSA, CRS has implemented the health component of the DAP in 106 communities in Matagalpa, Estelí and Jinotega, designed to improve the overall health and nutrition conditions of malnourished pregnant and lactating women and malnourished children under two. The activities carried out to meet the DAP objectives were the following: 1) health and nutrition education to caregivers; 2) distribution of food for pregnant women and children under two; 3) growth monitoring of children under two years; 4) community education on health practices for children under two; and 5) volunteer training in health interventions for children under two and pregnant women.

Sessions on health and nutrition education, food preparation and proper utilization have been delivered to primary caregivers. Some of these activities are cereal fairs, health schools and mothers groups to enhance their abilities to prepare different food and have the opportunity to shared their own recipes. Direct distribution of supplementary food rations to beneficiaries is carried out by the community development committee. The number of rations distributed during the life of the project in the health program was 253,370. The number of beneficiaries reached until June of 2007 were: 3,750 pregnant women, 4,267 lactating women, 5,498 children between 6 and 24 months of age, and 103 children ages between two and three years, for a total of 13,618.

Children's growth and health development has been monitored through weighing sessions that take place at the community base houses. Sessions are facilitated by three volunteers for every 25 children. These sessions are conducted according to the norms established in the PROCOSAN Technical Operational Manual. Home visits are programmed to follow the progress of children

identified who have not shown standard weight gains for two consecutive months.

CRS volunteers carry out educational activities to improve community knowledge on diarrhea and Acute Respiratory Infection prevention, management and recognition of danger signs, adequate immunization, and breastfeeding. Educational material (posters, manual etc…) are provided by the MINSA. These activities take place during the weighing sessions and community organized activities.

Community volunteers' training was provided by the Ministry of Health, in collaboration with CRS, for the application of the AINC and PROCOSAN strategies. The latter of these is being implemented by volunteers in 50 of the 106 communities where CRS works. Volunteer training included appropriate use of the MINSA monitoring and referral system, health interventions for children under two years old and pregnant women, and how to deliver health massages during individual home visits and community educational session. They have learned to prepare community maps, maintain records and effectively communicate with the mothers.

CRS has carried out activities in order to reduce the vulnerability to disasters of the target communities. These activities were initiated in October 2005 in the municipalities of San Nicolás, La Trinidad, San Duinicio, Esquipulas, y Jinotega. Taking in consideration the high vulnerability of these municipalities, CRS has been focused on delivering training about disaster management to the municipal prevention committees, development of risk maps, distribution of filters for water purification, and delivering first aids kits. Through its partners, CRS has been able to count on the support of municipal authorities, MINSA, community committees, and private voluntary organizations.

According to the CRS FY 2007 annual results report and other documentation provided to the evaluation team, the organization has accomplished the program objectives of the health component. The weighing sessions appear to be a well-accepted activity, given the number of mothers present and their willingness to participation when they were asked questions about the program and what they have learned. The percentage of children who attended to all of the weighing sessions was 97% in FY 2007. The baseline for this indicator was 81%. The indicator for the percentage of children with two consecutive unsatisfactory growth periods decreased from 8.0% to 6.5% from FY 2002 to FY 2007.

Concerning prevalence of chronic malnutrition, the reported results show little evidence of change in the baseline prevalence rate, which was reported at 17% and with the current prevalence is 16.8%. CRS explanation for this result is that the later sampling was drawn from areas that have more elevated levels of malnutrition. This was the result of a decision to concentrate effort in areas of greater needs.

A significant increase was observed in the number of mothers that exclusively breastfed their children during the first six months of life. The baseline rate was 54%. The percentage accomplished by FY 2007 was 80%. According to the Nicaraguan Demographic and Health Survey (DHS 2007), nation-wide 31% of the children under six months old are receiving exclusive breastfeeding.

Another significant improvement was observed in the administration of food to infants during episodes of diarrhea. CRS' FY 2007 results report indicates that the percentage of children that received an equal or greater amount of food during episodes of diarrhea increased from 24% at the baseline to 78% this year.

CRS has implemented the MINSA Birth Plan (Safe Motherhood Plan) in 17 communities in the Department of Jinotega. The plan is not being implemented in the rest of the communities yet. Volunteers and midwives are trained to make referrals, follow up on pregnant women's conditions, and to educate their husbands on pregnancy and birthing conditions. They have set up pregnant women clubs for support. The percentage of women having received doses of anti-tetanus (TT) increased from 40.7% at the beginning of the project to 91% in FY 2007. Men's knowledge of pregnancy risk signs has shown improvements. The percentage of men who knew at list two danger signs of pregnancy in FY 2002 was 19%, improving to 63% during this year.

Volunteers are an essential part in the implementation of the health programs. They help the community to organize and facilitate community meetings and assemblies, they conduct weighing and education programs and they counsel participants. At present, CRS has trained and supported 290 community volunteers (64% are women and 36% are men) and assisted 90 midwives.

As concerns community level natural disaster management, CRS has led work in organizing emergency committees in 30 highly vulnerable communities in the municipalities of San Nicolas and La Trinidad. 540 members of the municipal disaster prevention committees were also trained in disaster management. Thirty emergency risk maps for those communities were prepared, 185 water purification filters were provided, and 30 community first aid supplies kits were delivered.

CRS' previous presence in the area of intervention before the DAP has been an important factor in the success of the program. During meetings and interviews people expressed their confidence in the organization. It was also evident in the large numbers of people present during the evaluation meetings with beneficiaries, municipal authorities, and implementers. To accomplish the program objectives, CRS counts on a staff of 14 distributed in three locations: Caritas Matagalpa, Caritas Jinotega and Caritas Estelí, of which ten are men and four are women. It was noted that men from the communities rarely attend health-related events or activities.

Recommendations

CRS should continue to promote inclusion of men in health activities. It would be beneficial to develop gender workshops for men and women and other activities such as expanding the number of men's health clubs or encouraging father participation in weighing/counseling sessions.

It is unfortunate that there is little statistical evidence of change in the prevalence of malnutrition. The reported data show little improvement in malnutrition rates. One explanation given was that the lack of improvement is the result of a change in the sample weighting being taken from new communities with higher levels of malnutrition. However, this still leaves CRS without needed information for determining the value of efforts and whether changes in their efforts should be

made. It is reasonable to assume that since the weighting shift went from lower malnutrition prevalence communities to high level ones while the percentage of prevalence stayed constant, there has been progress. However, having exact data by community would have been useful in determining intervention effectiveness. In the absence of complete data, no definitive statements can be made on the impact of CRS efforts to reduce malnutrition. CRS should make a conscientious effort to reestablish reference points by community for its malnutrition work.

If the data from the new reference baseline continue to show inadequate improvement of the CRS efforts focused on malnutrition, we recommend that CRS investigate the reasons that some families have not adopted better nutritional practices, after sharing with the participating families the poor results achieved to date. Exploring cultural practices that may inhibit good nutritional practices with these families can serve as a beneficial communication tool and to make an improved nutrition campaign a joint effort for all concerned. Additionally, closer follow-up and encouragement by brigadistas and other health personnel with the families of malnourished children could be beneficial.

2. Project Concern International

In the Department of Jinotega, most people live in rural areas. This is the region Project Concern International has chosen for development assistance under the DAP. One major problem within the municipalities of the Department is malnutrition among the population, especially in children under five years of age. According to the Nicaraguan Demographic and Health Survey (DHS 2007), 17% of the children under five are suffering from chronic malnutrition. This situation is a result of the high incidence of poverty which limits their access to food, and lack of availability of proper knowledge on the correct utilization of food. Repetitive episodes of diarrhea and respiratory illness that affect the children in these communities constitute other elements that influence their nutritional condition, as does a lack of knowledge concerning appropriate health care for infants and children. Attention to pregnant women is one of the biggest priorities in Jinotega. Maternal deaths registered there in 2006 totaled 163. This figure represents the third worst at a national level in terms of death caused by pregnancy problems. Health services coverage is very low in rural areas. The MINSA has minimal staff dedicated to education of rural families about good health and nutrition practices and to mortality reduction.

The goal of the health component for the Project Concern International (PCI) Title II Development Assistance Program (DAP), is to "**Improve Health and Nutrition for Women and Children under Two Years of Age**". PCI works in collaboration with MINSA to facilitate the implementation of the new Community-based Health and Nutrition Program (PROSOCAN) in the Department of Jinotega. PCI is the most important non-governmental organization working with the target communities and the progress achieved can be largely attributable to PCI's efforts. The program objectives are: 1) to improve health and nutrition practices adopted by training promoters and volunteers, 2) to improve mothers' knowledge of health and nutrition practices, and 3) community adoption of practices for monitoring care of pregnant women and children under three years old.

Working in coordination with the Ministry of Health MINSA, PCI has been implementing the DAP in 112 communities in the municipalities of La Concordia, Pantasma, Yalí, San Rafael del Norte and El Cuá since January 2002, reaching a total of 12,904 beneficiaries. The major activities carried out to meet the DAP objectives are the following: 1) health and nutrition education to caregivers; 2) distribution of food for pregnant women and children under two; 3) growth monitoring of children under two years; 4) community education on health practices for children under two; 5) volunteer training in health interventions for children under two and pregnant women; 6) community organization.

Health and nutrition education to caregivers is usually carried out by PCI volunteers at the community base houses during the weighing, home visit and educational sessions. Pregnant and lactating mothers receive information on preventable diseases, breastfeeding, weaning food administration to children, danger signs of acute respiratory infections (ARI), use of oral rehydration therapy (ORT), and other related issues. Educational materials are provided by the MINSA and the education programs are carried out by community volunteers trained by PCI. Weighing sessions are conducted according to the norms established in the PROSOCAN Technical Operations Manual of MINSA.

PCI provides complementary food rations in order to improve daily nutritional intake for pregnant and lactating women and children between the ages of 6 and 23 months. Distributions take place bimonthly at the community base houses and are carried out by the food distribution committees. The total number of beneficiaries reached is 12,904, of which 79% are children under two, 17% are pregnant women, and 4% are lactating mothers. There have been 82,843 food rations distributed to date. Women participate in food preparation sessions, where they share recipes and information about nutrition.

MINSA, in cooperation with PCI, has provided volunteer training for the implementation the program's activities. Volunteers are trained by PCI to deliver person-to-person and community health education, to help with community organization, and to facilitate community meetings to discuss health issues. In order to carry out the program's activities, PCI has adopted the health strategies of the MINSA. Initially the program used the Community-based Integrated Care for Children Strategy (AIN-C), and this is still being used in 44 of the communities. The remaining 68 are using the newly implemented strategy entitled the Community-based Health and Nutrition Program (PROCOSAN). This strategy is designed to promote behavior change for improved health and nutrition of women and children.

To reduce maternal mortality rate, PCI has been implementing the MINSA's Birth Plan strategy since 2006. The established number of communities to be reached by this intervention in the remaining part of the project was 14. Since this number has been reached, the work is now projected to be expanded to 63 communities during the remaining time of the DAP, as a PCI collaboration in supporting the effort of the MINSA to combat maternal mortality. Since 2006, there have been no birth-related women mortalities in the 14 communities using the Birth Plan strategy. Men are actively participating as board members and volunteers. Out of a total of 107 people involved in the strategy, 52% are women and 48% are men.

Community organization activities constitute a key element for the success of the program. PCI's DAP activities focus on the participation of community members in the program as main decision makers in order to strengthen the community capacity to address challenges and identify the most effective solutions and best use of resources.

Findings in terms of malnutrition after PCI implementation of the DAP show improvements. From a baseline established at 22.6% in FY 2003 it was reduced to 14.6% in FY2007. This represents a 35% reduction in the number of children that presented malnutrition in relation to the baseline. According to the Nicaraguan Demographic and Health Survey (DHS 2007), the percentage of children under five with chronic malnutrition at a rural level nationally is 17%. Percentage of children 0-35 months that are under weight went from 9% in 2002 to 6% in 2007. This represents an overall reduction of 33% in the number of children 0-35 months that were underweight before the PCI intervention.

In the field mothers and volunteers interviewed during weighing sessions demonstrated knowledge of good health practices specifically in breast feeding, acute respiratory infections, pregnancy danger signs, and diarrhea danger signs. It was observed that most of the mothers were breastfeeding their children and that most of the children look healthy and well-nourished. The PCI FY 2007 results report indicates a decrease in breastfeeding practices from the baseline

at 56% to 50% this year. However, the national level average for breastfeeding practice is only 31% (DHS 2007) and Jinotega is well above the national level.

Knowledge of child care and preventable diseases in children was improved. The percentage of mothers that know at least two appropriate foods for children under one year changed from baseline at 68% to 90% this year. According to PCI, the percentage of mothers with children under three years that can identify at least two danger signs of diarrhea went from 18% at baseline to 31% in 2006. No significant change was reported in the number of mothers that continue to offer food to children under three during episodes of diarrhea (57% at the baseline, 61% this year).

Changes are observed in the knowledge of women concerning pregnancy risk signs. 86% of the mothers know at least two danger signs of pregnancy vs. baseline of 55%, and 67% recognize at least two delivery danger signs, compared to 17% that was established as a baseline. Nonetheless, the number of women who received attention regarding their pregnancy at the health centers decreased from the baseline at 68% to 58% this year.

In the program area, 454 community volunteers are working today, of which 44% are male and 56% female. The total number of men involved in child integrated health care programs during the FY07 was 795, surpassing the target by 6%. These numbers are very significant in a culture where the care of the child traditionally has been a responsibility of the mother. Good practices in using the health information system and referrals documentation were observed. The data collection charts, referral forms for children and pregnant women, a cumulative results for weight gain were reviewed and these were complete and up to date. In addition, to date PCI has trained 66 community leaders (34 women and 32 men) in gender topics.

The communities have benefited from PCI's effort to train local individuals to assume responsible staff positions in the organization. The direct result is a highly qualified local staff that is close to and committed to the communities. At present, of the 37 staff members working at the PCI office in Jinotega, only two are not from the area. The health component staff is composed of a total of 12 members of which seven are male and five are female.

PCI has gained trust within the communities where it operates. It was observed that PCI personnel, community leaders and some of the beneficiaries know each others names at every community we visited. PCI staff is skilled professionals, yet plainly avoid any attitude of superiority or elitism with the people living in the target areas. They treat people as equals, showing genuine interest and concern about their families and listening to their complaints and needs. These relationships, though a subtle indicator, have clearly helped PCI in establishing the trust necessary for building organizational capacity at the community level, a key prerequisite for project success, empowerment of the community, and long-term sustainability. In field visits PCI staff appeared competent in managing the program and to have a good understanding of the needs of the communities.

Other observations, somewhat troubling, worth noting are: a significant lack of latrines in some of the communities, water purification at the home level was not in evidence in communities without improved water supplies, it is not clear that all members of program participating

families (i.e. children) have received relevant health messages, and volunteers giving health messages did not always appear to be modeling the appropriate health related behaviors.

Recommendations

During field visits it was seen that important health related messages had been delivered and recipients could articulate them well, but the actual behavioral change was not always evident. A focused behavior change methodology would improve program impact. PCI should consider possibilities for adopting a behavior change approach, which draws upon difficult case examples where new behavior change methodologies have been elaborated, tested and refined in a Latin American context. In situations where the target population already demonstrates understanding of what the desired behavior is and why the particular behavior would be to their benefit, the critical steps in obtaining meaningful behavior change are the identification of the specific barriers to that change and the development of strategies for the systematic elimination of those barriers.

Brigadistas associated with the health program are committed and are major assets, but not all are consistent role models for the behavior they have been enlisted to promote (e.g. home hygiene, latrine cleanliness). Training should encourage full adoption of proper health habits and facilities, such as presence and use of clean water and latrines.

Follow-on health activities should consider the possibilities for broadening the sanitation component of PROCOSAN, working through the communities, MINSA, municipal authorities, and NGOs. Better health care and nutrition should be coupled with better sanitary conditions in the home and community. This could include additional latrine construction, water purification education activities and resources (such as household chlorination, solar water heating and ultra violet light exposure for purification, or filtering).

Older children should be included as full members of the family for participation in some educational activities related to health. They are now occupying a passive role instead being used as valuable resources for positive change. In many countries, health education campaigns have targeted children as the agents for change within their communities. Such efforts as anti-smoking campaigns, trash collection and personal hygiene programs through children have been successful in changing the practices of the entire population. Older children are excellent change agents and multipliers: they are better than adults at absorbing information and at adopting new behaviors.

3. Adventist Development and Relief Agency

The Departments of Nueva Segovia and Madriz are still facing one of the highest rates of chronic malnutrition in Nicaragua (21% and 30% respectively, according to the DHS, 2007). Over one out of every five children under five years old in Nicaragua was chronically malnourished. This critical situation still remains a serious problem, especially in rural areas where lack of food in the household, poor feeding practices, and poor gastro-intestinal utilization of food are the main factors of food insecurity. These problems can diminish children's mental and physical performance capacity of performance. The critical time for a child is the weaning period – between six and 36 months - given that growth is insufficient due to earlier nutritional deprivation and the absence of breastfeeding practices.

The basic goal of the ADRA health program is that at the end of the strategy period mothers will be familiar with good health practices and will have improved their own practices at the household level to better maintain their health and nutritional status and that of their children (especially those under two years old). Also, an additional premise of the ADRA program is that families in food insecure areas will have diversified their incomes by engaging in higher value market production with improved infrastructure to reduce marketing and other transaction costs. ADRA is the most important non-governmental organization working with the target communities and the progress achieved is largely attributable to ADRA's efforts.

In the case of ADRA, the health goal focuses on efforts to reduce incidence of chronic malnutrition in the departments of Nueva Segovia and Madriz by adding food distribution and by improving nutritional practices through public MCH programs. To this end, ADRA has introduced community interventions to improve food intake and use through integrated health, nutrition, sanitation, and potable water programs. These efforts directly support the USAID/Nicaragua's Strategic Objective of "Better Educated, Healthier, and Smaller Families" and respond to the Intermediate Result of "Improved Maternal-Child Health and Nutrition".

It has been found that many mothers understand the messages about how to feed their children properly, but often lack the resources to be able to put their new knowledge into practice. ADRA´s intervention focuses its efforts on the reduction of food insecurity in vulnerable populations. Target populations include those who are at risk of food insecurity because of poverty levels, geographic vulnerability, community infrastructure and risk for disasters, educational level or illiteracy of their parents, among other characteristics.

That is why ADRA´s community-based health program focuses on sustainability, on the need of promoting behavior change interventions such as exclusive breastfeeding for children less than six months, monthly growth monitoring sessions, complete vaccination cards, use of oral re-hydration therapy, and prenatal check-ups.

ADRA's health and nutrition program has reached out to roughly 48,000 people in 154 rural communities in Nueva Segovia and Madriz. The central feature of this program for all the health community activities are the Base Houses ("Casas Bases"), where monthly growth monitoring sessions of children up to five years old take place. Besides, in the Community Base House the health volunteers ("brigadistas") carry out monthly sessions on food preparation with mothers,

nutritional health, and control of diarrhea diseases, control of respiratory infections, maternal health, and hygiene–sanitation activities. ADRA adapted the MINSA Base House for use at the community level, with a focus on monitoring and follow-up on children's weight and could constitute a model for other nutrition projects.

At the Base Houses, individual records are taken of every child that is weighed and the current nutritional state is registered in relation to the expected weight. The technician of ADRA consolidates the information on a quarterly basis and gets a measurement of the status of malnutrition, broken down by community. This information is digitized by ADRA's health information specialist in the data base where they track information on all the interventions of project.

The MCH interventions develop its main effort on the training of the brigadistas and "lead mothers" in order to provoke a behavioral change in childhood nutrition. From the Base House, volunteers and mothers promote family gardens, nutritional fairs, community sessions for nutritional analysis, the growth monitoring sessions and the group preparation of foods where mothers from different communities participate.

One of the new strategies that ADRA encourages in nine communities is a program called Social Medicines Outpost (SMO). This initiative answers the need of making more easily available and accessible primary care medications to the people of fewer resources in the communities. After six years of operations, it is apparent that these popular pharmacies are adequate and self-supporting alternatives for improving availability and accessibility to medicines, especially for the poorest people of project communities. It enables the most vulnerable population, especially single mothers, to have a more permanent access to basic medications.

Through ADRA's DAP and the selected communities, there is a dramatic reduction in the prevalence of chronically malnourished children under two years old, from 49.3% at the baseline to 11.6% in FY 2007. Wasting children reportedly constituted 53.5% at the baseline, improving to 16.4% by FY 2007. This decrease in the prevalence of malnutrition is significant and clearly demonstrates the effectiveness of the strategy for nutritional behavior change that ADRA encourages, as well as the impact of the increase in the family income, the access to family gardens, and the access to credit for income generation.

This nutritional impact among boys and girls under two years old is linked to two other current results: the practice of exclusive breastfeeding by lactating mothers is at 88% for those with children under six months and the attendance of 77% of children at growth monitoring sessions according to FY 2007 figures. Attendance was reportedly down because of Hurricane Felix and adverse rainfall in recent months and the goal of 83% was not met.

In terms of child growth patterns, 64% of children under five years old achieved satisfactory gains. Since September 2007, access to more remote communities has been blocked by flooding and road damage and they were not taken into account in the annual health survey. However, these are the most food insecure in the target population.

The program health information system shows, as a result of the promotion of the family garden

strategy, that 413 men, 2,548 women, and an additional 630 “mother leaders” participated in this activity and received training on nutritional values, food preparation and general concepts of nutrition. It is known that green leaves are rich in iron and the intense orange vegetables are rich in vitamin A, and so new crops, such as carrots, lettuce, and spinach and beet leaves, were added to the family gardens in order to respond to the need for micronutrients in dry zones.

As planned, during FY07 MCH rations were not distributed. It would have been reasonable to think that this might affect the coverage of the programs at the community level, yet only 8% of children less than five years old did not achieve satisfactory growth for two consecutive months. Regarding maternal health, 80% of pregnant women received at least three prenatal check-ups and 91% received ferrous sulfate, in accordance with MINSA standards, achieving 88% of the proposed goal. The impact of promotion of institutional delivery is shown with 89% of deliveries being carried out in health units.

A total of 75% of women of child-bearing ages reported to use a modern family planning method, representing more than the proposed goal. A total of 6,430 women received talks about sexually-transmitted infections and HIV/AIDS.

Once in FY 2007 there were difficulties at PROSALUD (private supplier) in providing medicine supplies to the social medicine outposts (SMOs). Therefore, ADRA only opened two new SMOs, instead of the five originally planned. Those two sold $162 of sales in the first 15 days of operation. Exchanges of experience sessions have been held between MINSA dispatchers and dispenser agents, in order to strengthen direct coordination between SMOs and health unit pharmacies.

It is important to highlight a paradigm change in ADRA's philosophy over the last years, which is evident in the field where we can see community-based interventions guided to avoid paternalism and to promote more autonomy and control by the communities of their own development. For example, it is worthy to see local volunteers to do their training work on health and tracking weight sessions without the so close supervision of the program technicians. Mothers get strongly involved in the care of the community family gardens and in the preparation of foods although there are not more rations of food delivered by Title's II program. Finally, there's a close horizontal link between the agricultural and nutritional component making easier to most communities a comprehensive vision of food security. This approach was incorporated into the Nueva Segovia and Madriz SILAIS, with ADRA’s help, as part of the “Activity Guide for Monitoring Health” (called AMAS). This pilot was important for national level implementation and is being incorporated in a new MINSA nutrition program.

Recommendations

During the implementation of the program ADRA has achieved an important effect in the food production through strengthening horticulture, by improving access to food, by supporting specific small business to women, and by improving behavioral change for the right food utilization. It is advisable to reinforce a strategy that focuses on the most vulnerable mothers, (single mothers), unsupported mothers of credit institutions, and women without credit history neither guarantees to respond to a credit. They tend to be neglected when synergies or sectoral

linkages with agro-business are pursued.

Although ADRA´s methodology to measure the nutritional impact of the program on an annual basis is totally at random, the sample size used for selecting children is only 6% of the target children less than two years old. It is recommended that the sample size used for the annual health and nutrition impact evaluation be increased to 30 % of the universe (30 clusters methodology equivalent to 300 children's total), if funding is available to cover the increased cost. In this way impact indicators will have a bigger statistical weight and the impact of the nutritional interventions would be more evident.

The data base is very valuable and useful to make strategic decisions in the field. An adequate crossing of variables (association's or probability analysis) would be very opportune to demonstrate with more statistical weight the cause and effect in response to some interventions of the program. For example, it would be helpful to associate diarrheal prevalence with those mothers that practice exclusive breast-feeding until six months. The information system in health is flexible, reliable, and appropriate to take strategic decisions in the implementation process of interventions. The data could be used to provide feedback more frequently to volunteers in the communities and the SILAIS's staff, through sessions of information analysis. It is important to point out that MINSA will start next year a new Comprehensive Attention Health Model that will be implemented nationally. ADRA and other PVOs might need to adjust their strategies to this new scope of work in each region.

Session training in home financial administration techniques and home visits to children with unsatisfactory weight should be increased by the leader mothers and encouraged by the volunteers. The visits made by the volunteers and mother leaders have improved the capacity of recipients handling their incomes and it has trained them better to make adequate decisions in the use of their finances to give priority to alimentary safety over other needs. Since the SILAIS in Nueva Segovia will initiate the implementation of the AIS / PROCOSAN strategy, it would be helpful to have an exchange with the other CSes to share lessons learned in the PROCOSAN's implementation.

It would be useful to measure the utility of the SMO for improving community, even if only in time and money saved in local procurement of health supplies. This could be a good opportunity to promote the individual counseling, the weighing and guidance sessions and the references to the health posts. The SMOs also represent an opportunity to improve community information by taking advantage of the interaction with clients to monitor information that may escape from the records of the Base House.

Base Houses in each community of the project have shown to be the pivot of adequate food utilization and nutritional impact on boys and girls weighed, and the central focus of the community dynamic, where monthly weight sessions get linked to other agricultural activities, financial credit, food preparation sessions and environmental sanitation. The "Base House" is a model that has made a great impact on mother’s health and malnourished children when linked up to food production and income generation initiatives. It is recommended that other health assistance providers consider using the model in other communities and to take them into account for other food security programs that the Nicaraguan government or other stakeholders

implement in the future. Obviously, there is a cost associated to the adoption and implementation of this strategy to determine its feasibility. If this strategy were adopted by MINSA it would be critical to analyze costs for local organization, volunteer's network, Base Houses supplements, budgetary support, and a health information system on the ground.

4. Save the Children USA

The Government of Nicaragua Ministry of Health sub-strategy, entitled Community-Based Health and Nutrition Strategy (called PROCOSAN) is being implemented in the target communities by Save the Children, health volunteers, and MINSA in the Department of Chinandega. The selected area includes 109 communities in four municipalities facing the problems of general health and malnutrition among children less than five years old. According to the DHS 2007, among children under age five 17.0% suffer chronic malnutrition in Nicaragua's rural areas. The same study, which included anthropometric measurements, shows that in the Department of Chinandega, 16.7% suffer chronic malnutrition in this age group.

Save the Children program, is also supported by USAID/Nicaragua's Program entitled "Improve Maternal-Child Health and Nutrition", and targets the need for improving maternal and child health service delivery, for improving health practices and care-seeking behavior, for improving hygiene and sanitation, and for improving early childhood stimulation.

Save the Children´s support of PROCOSAN focuses their efforts on three objectives: to strength the interrelation between the health services and the community; to take prevention and attention actions on behalf of the health service providers; and to promote key eating practices for the family's nutritional improvement.

SCF´s program aimed at reducing malnutrition among young children supports the USAID Mission's objective of "Better Educated, Healthier, and Smaller Families", given that children who are better nourished and healthier will be able to function better in school, and mothers who are well can better care for their children and lead more productive lives. The purpose of SCF´s health and nutrition intervention is to improve maternal-child health and nutrition by improving key family practices, strengthening access to selected MCH services, and providing food rations. In addition, this strategy attempts to improve community health practices and care seeking behavior; increase coverage of MCH service delivery; and improve early childhood stimulation.

PROCENI activities, as part of a food security strategy at a communal level, focus efforts on promoting availability, access, and utilization of foods. Food utilization represents the last impact in the security initiative that the PROCOSAN strategy of the Local Systems of Integral Attention on Health (SILAIS) implements in the Department of Chinandega. SCF´s nutritional intervention focuses on the promotion and surveillance of each child's monthly growth through monitoring and growth promotion sessions. It serves as the basic platform for delivering all health and nutrition activities in the SCF strategy, including community mobilization, and decentralization of health services. Communities-based activities also include MINSA provision of basic health care services including vaccinations.

The adequate utilization strategy of foods for children under 24 months old has two fundamental tools at the communal level: conducting the monthly growth monitoring sessions and using the Community Children's Center (both a place and a set of activities, CRN in its acronym in Spanish). The first tool includes the weight monitoring, record and the data updating, negotiation and counseling, distribution of micro-nutrients (iron and vitamin A), and promotion of exclusive breast-feeding for the first six months of life. The second tool (CRN) is the program used for

conducting sessions with mothers in each community that take place once or twice a week to learn on hygiene and hand washing, improved recipes and snacks, early stimulation with children under two years old, and educational training meetings on control of diarrhea, prevention of respiratory infections, maternal health, promotion of the ante-natal control, family planning, immunizations, etc. Currently there are 144 CRNs, located in 87 out of the 109 communities being served. In the CRN, mothers prepare and consume a "wet ration" that consists of rice, lentils, oil, cereal and corn meal, donated by the USAID.

In addition, communal fairs (ferias comunitarias) of foods are developed once a year by the communities in order to stimulate mothers to maintain their interest in getting better knowledge of food preparation and food utilization. As part of these communal fairs mothers sell jellies, caramel toppings, and cakes made by mothers with products of her own kitchen gardens and that can generate them an additional income to meet her own family needs.

The SCF approach is divided in two sub-strategies: food distribution (Title II food rations), and economic opportunities. Both efforts seek to achieve food availability all year through familiar organization to promote food production and commercialization. The emphasis is on the basic grains production, the diversification and commercialization of farm products, having like base the establishment of familiar kitchen gardens.

The second and third levels of assistance concern association's formation strategies and the constitution of companies respectively. These families in these associations (see Section IV B 4) use their own resources and are developing commercialization and agriculture- business strategies, which include associations with entrepreneurial vision, post-harvest and agro industry, productivity, diversification, marketing and commercialization.

Through SCF, 3,740 families have been engaged in Food's for Work (FFW) activities that have included road improvement, nurseries establishment, and support to the Communities' Health Campaigns (Tornados Populares de Salud) of the MINSA. Some 6,376 tons of foods have been distributed to date.

The results of SCF's health activities are shown through nutrition progress indicators that are monitored by System of Nutritional Vigilance and Food Distribution (SIVINDA). The information that flows from the field is first entered into the SCF data base. During the weighing/guidance sessions and CRN's meetings, the health volunteer fills in the weighing results and guidance messages delivered, later feeding these into the SIVINDA system.

It is noteworthy that the community volunteers (brigadistas) type the information into the PROCOSAN's data bases, showing children's immunizations, pregnant women, application of vitamin A and iron, and monthly growth. SIVINDA provides information on the nutritional status of children by municipality and community and by child, children's vaccines and the prevalence of respiratory infections and diarrhea. When SCF participates in the Extended Technical Councils that monthly take place in the SILAIS, they share information on the weight sessions and coverage's of the different primary health programs.

In terms of impact on nutritional status, SCF´s health and nutrition intervention has achieved a

reduction of the prevalence of global malnutrition (Weight for Age of children under two years old) of nearly 200%, dropping from 14.2% at the baseline to 5.4% in FY 2007. The decrease of chronic malnutrition by 100% is also excellent (22.5% at the baseline compared to 9.8% to date), with a decrease of 2.54% annually.

For the total population of children under two years old in the four municipalities it is reported that 73% showed satisfactory growth, whereas among the children participating in the SCF program the level of satisfactory growth totaled 89.4%. 100% of children under the age of six months had satisfactory growth. This may well be related to the high percentage of children under six months old who were exclusively breastfed (58% of mothers in FY 2007 vs. 37% in FY 2002) and behavior changes of the mothers participating in community activities during the life of the project. Early childhood stimulation strategy has had a real and sustainable impact on 96% of the children who show normal development vs. 81.5% in FY 2003.

The project also has an impact on maternal health. Reportedly 64% of pregnant women received two tetanus shots - which exceed the FY07 goal of 60%. It was reported that 97% of the inoculated mothers attended prenatal control during their last pregnancy. About 87% of deliveries were attended by trained health personnel, which is a significant indicator of progress in terms of hospital deliveries. Additionally, 77% of the home deliveries were attended by trained birth attendants. In addition, 95% of all mothers had at least one post-partum check up, which matches FY07 expected results. The impact evaluation of SCF's strategy relies on the measure of nutritional indicators that are monitored by SIVINDA.

A stand-out result is the close relationship of coordination that exists between the SILAIS Chinandega and SCF. This is apparent in many ways, including adoption of the SCF indicators by the SILAIS, the institutionalization of the PROCOSAN's strategy at the departmental and community levels, the joint strengthening of the brigadistas network, a flexible and efficient reference and non-reference system designed and adopted by both the SILAIS and SCF, and the joint trainings with MINSA. This interaction between the SILAIS and SCF has had a profound impact on coverage and performance, as well as on the reduction of the malnutrition of the Height for Age Z scores (HAZ or chronic malnutrition), 22.4% in FY02 vs.9.6% in FY07; Weight for Age Z scores (WAZ or global malnutrition), 14.2 % in FY02 vs. 5.3% FY07; and Weight for Height Z scores (WHZ or acute malnutrition), from 2% FY02 vs. 0.9 % FY07.

The program has achieved a 75% graduation of the target communities, which have been covered by the SILAIS for the follow-up and accompaniment. The other 25% is only awaiting the graduation ceremony, having already completed the requirements established by MINSA. The graduated communities have reached the impact criteria required under the SCF strategy, including: a reduction of at least 20% of prior malnutrition, a community-based reinforced network of volunteers, and 70% of the children under 24 months old have satisfactory monthly growth and at least 28% with satisfactory growth during three months in sequence. The graduated communities at the four municipalities are: 20 of 27 in Somotillo, 22 of 25 in Villanueva, 34 of 50 in El Viejo, and 6 of 7 in Puerto Morazán. All graduated communities were assisted by SCF.

Recommendations

The last rations (25 Kg. of cereal and 2 oil cans of 3.7 Kg each) of supplemental foods were delivered in September 2007. For the last ten months of the program SCF should try to assess the impact of no additional rations being given. Will attendance drop at weight assessment sessions, will participating children show declining weight gains? What will be the effect in terms of sustainability on coverage and the nutritional status?

The CRN constitute the nucleus of all the communal activities, in such a way that all the communities covered by SCF should have a CRN in their community. Even though it is certain SCF has reached the CRN's number that is obligated to have in the DAP it is also important for the sustainability of this strategy to promote and expand this successful model in the rest of the communities of the zone (27 without CRNs). MINSA in Chinandega has expressed their commitment to taking responsibility for expanding this strategy in other communities.

New communities have recently become incorporated to SCF program. It was evident during the focal groups with mothers that in some of these new communities there is a need to strengthen educative health sessions with new mothers to generate behavioral sustainable changes over the next year. In other words, recently integrated mothers need an individual accompaniment out of the weigh sessions or the CRN meetings to insure that the nutritional indicators do not move back to the previous spot and that they health messages are clearly understandable.

In this same sense it is also recommended that a better distribution of the program efforts is warranted, focusing more on those children that have recently been incorporated to the program and those who show unsatisfactory weight during two months in sequence. In order to maintain the same level of success on health nutritional indicators over the next year in those graduated communities it would be advisable that the program have a Health Coordinator to supervise the project area during the final stage of the project. This is important for three reasons: the need of closer monitoring of the families added recently to program activities, the need of supervising the transition of those graduated communities from SCF to MINSA, and support to the SILAIS in the process of institutionalizing PROCOSAN as a community strategy. To this end, the Chinandega SILAIS Director has requested SCF assistance with training the SILAIS team in food preparation linked to better kitchen gardens and nutritional initiatives strategies. This can constitute a fundamental pillar of the up-coming Comprehensive Attention Health Model of MINSA.

Finally, it is important that SCF´s nutritional program strengthens its links with the SCF´s program of economic opportunities, to take the advantage of the whole potential of local available foods. The communal food fairs, developed once a year by the communities, could include programs promoting better knowledge of food preparation and income generation.

B. Agricultural Production, Processing, and Marketing

Tomato quality control in Totogalpa

Vegetable seedling production in Kilaca

The four organizations implementing the Title II Program in Nicaragua are all providing assistance to small-scale farmers in different communities within the Departments of Chinandega, Madriz, Nueva Segovia, Jinotega, Esteli, and Matagalpa. Other than the Atlantic Departments, these are the poorest parts of the country. The forms of assistance vary, but the major elements are technical assistance and training in agriculture production, processing, and marketing, credit and limited operating costs, and provision of limited inputs. Similarly, the participating producers and products vary considerably, but for the most part emphasis is placed on farmers averaging 3.5 manzanas of land producing commercial crops. Progress made by these farmers through the Title II Program is not measured in any uniform way, but all use a sampling system for many performance indicators. Most used product sales, income, production, and resource management or proxies for these core indicators. All underwent a Data Quality Assessment in April 2007 and the monitoring and evaluation systems, as well as the data generated, were found to be sound and reliable.

All four CSes reported gains in production, sales and income, plus increased land area using environmentally sound practices. Various proxies and statistical techniques were used in measuring these gains and therefore uniform, combined reporting can't be done.

1. Catholic Relief Services

In the Departments of Jinotega, Estelí, and Matagalpa, CRS has identified populations with chronic food deficits during certain periods of the year. Additionally, income levels for the general population within the targeted ten municipalities are extremely low, with half averaging less than $1 per person per day. CRS is working to increase food access and availability, by increasing agriculture productivity of certain crops, livestock, and the value-added of those products, as well as improving incomes of the participating farmers through improved marketing.

Through the USAID DAP, CRS is partnering directly with the following non-profit local organizations: Caritas Jinotega, Caritas Estelí, Caritas Matagalpa, and the Foundation for Investigation and Rural Development (FIDER), the latter in the Municipality of La Trinidad, Department of Estelí. Caritas is a faith-based local non-governmental organization (NGO), with the departmental branches administered by regional Catholic dioceses. FIDER is a local NGO operating solely in Estelí. The major agricultural DAP initiatives CRS has been implementing since 2002 include efforts to increase production of certain crops through use of improved technologies, promote better and more effective farm inputs, improve soil and water conservation practices, provide farm credit (shown in Section IV.D), and strengthen agricultural organizations. New varieties of non-traditional, high value products (vegetables) have been introduced through CRS. (Traditional crops normally include maize, rice, beans, and corn.) Technical assistance and training to farmer groups (community groups, enterprises and cooperatives) and individual farmers are provided by CRS, the three Caritas branches, and FIDER, helping over 6,800 families at present. CRS has also provided a variety of farm inputs and production and processing-related infrastructure to certain farmer groups.

Some of the technologies that have been introduced include: the use of wind and erosion barriers (contour bunds and hedges); drip irrigation; organic fertilizer application; horticulture seedlings produced in greenhouses; dikes and ponds for water conservation; processing/collection plants for selection, cleaning, and packaging have also been supported through the program, in partnership with local farmer groups. Some improved farm inputs include: improved varieties seeds; irrigation equipment (pumps and irrigation materials); organic fertilizers; and greenhouses or 'tunnels' for seedling production. Soil and water conservation practices promoted mainly consist of pond and dike construction, contour bunds and hedge installations, crop rotations, and improved fertilizer applications, including use of organic fertilizers. New products that have been successfully introduced include Chinese vegetables, varieties of bell peppers and chayote, cilantro, mint, celery, and spinach. Other crops have been introduced into geographic areas where they weren't grown before, such as onions, tomatoes, cucumbers, and lettuce. These have been introduced to (and adopted by) farmer groups (enterprises, cooperatives, and communities), as well as individuals, at intervals over the last five years. They are located in 131 communities of four municipalities.

Improved agricultural practices (often called BPA or Best Practices in Agriculture), better types and uses of inputs, and high-value commodity production have been implemented by beneficiaries of CRS technical assistance. Reportedly, 6,812 families have participated over the last five years, representing 136% of the life of program (LOP) target, with still a year to go.

Women represent 21% of the participating farmers. CRS estimates that 2,407 jobs were generated or maintained through these farming operations.

The importance of agriculture marketing has not been overlooked by CRS and major efforts have been made to help targeted farmers and more importantly farmer groups understand marketplace dynamics, to identify and penetrate new markets, to establish better relationships with reliable buyers, and to obtain better prices for their products. Quality control has become an important consideration among horticulturalists and many CRS-assisted farmers now sell to such established buyers as Horti-Fruti (part of La Union and Pali, a supermarket chain partially owned by Walmart) and La Colonia (another supermarket chain). CRS has identified over 3,003 farmers (44% of those assisted through the DAP) as being involved in some form of processing and marketing activities. New crops have been successfully introduced and marketed, including Chinese vegetables, varieties of green peppers, chayote (merliton), cilantro, garlic, and mint. CRS technical staff helped farmers link up with buyers, helped teach farmers quality control and product selection, provided price information in various markets, and helped attempts to penetrate new markets. At this stage, efforts to export targeted farmers' products (except onions to Costa Rica) have not been successful, but better local market linkages have been established.

CRS measures improvements in various ways, including participation levels in different activities, volume of sales from products sold by DAP beneficiaries (including high-value 'non-traditional' crops), increased use of soil and water conservation practices, strengthened agriculture-based organizations, use of agricultural credit, and employment opportunities. The most significant measure of progress is income, since improved sales and production do not necessarily translate into more income for the farmer (production increases may be coupled with higher input and operating costs and sales alone do not reflect these, but net income/profit does reflect all these elements. Participation levels in all activities met or exceeded the targeted levels, with the sole exception of the percentage of women who participated remained fairly static at around 20% (except in training, where women's participation was closer to one-third). Volume of sales in FY 2007 for commercial farmers (3,003 DAP beneficiaries) were impressive, with $3,943,000 sold, 26% higher than sales in FY 2006. However, this gain is somewhat softened, since 6% more families participated and land under cultivation for commercial purposes increased 13%. Production levels were not reported.

For the income measure of progress, results are mixed. The average income level has made dramatic increases, improving from the baseline in FY 2002 of $334 to $1,900 in FY 2007. This remarkable gain, however, was largely due to the success of the top 5% of the participating farmers (taken from a statistically selected 380 producers out of 5,000, using the Lot Quality Assurance Sampling system) and the number of the poorest subsistence farmers (those with under $334 net income per year) is still high at 47% (2,356 out of 5,000). The number of the very poor was reduced by 7% since FY 2002 (344 producers), but it is still only 3% better than the FY 2002 baseline. The median net income has not changed significantly.

A major finding is the lack of progress in improving the agricultural income of the poorest farmers. It is apparent that the marginal lands and small hectarage (coupled with reliance on rainfall in normally 'dry' areas) are simply not sufficient in themselves to lift these poor farmers out of poverty. Their dependence on agriculture for their livelihood condemns them to remain

extremely poor and vulnerable. These lands are too poor to warrant expenditure of scarce donor resources for their improvement. Alternate employment creation or opportunities, combined with programs for improving health and education for the very poor, are more appropriate areas for assistance. The gains made by farmers participating in commercial farming and producing, processing and marketing higher value crops are encouraging and show the positive impacts of CRS interventions.

Recommendations

The sustainability of the gains made through CRS-supported activities with commercial farmers is apparent when the market linkages are reviewed. Market access is ensured if farmers maintain the quality of their produce and apply BPA, since demand for horticulture products remains high and sales prices allow a reasonable net income to the producer. However, the marketplace is dynamic and competition among producers can be fierce, especially from farmers in other Central American countries. Direct linkages to buyers and avoidance of middlemen is necessary to maintain profitability and so consolidated sales by groups of farmers will remain important, as will reduction or stabilization of production costs. CRS is encouraged to continue assisting farmers find and maintain market linkages with their production and processing efforts.

We encourage CRS to continue technical assistance and training, as well as to make contributions for new infrastructure and pilot activities, to small-scale farmers participating in commercial farming, having the requisite viable lands and water resources for entry and diversification into commercial farming, and having net incomes under $3,000 per annum. Graduates from the CRS DAP initiatives should be replaced by new entrants into the commercial arena. The areas of support provided in the past, in terms of technical assistance, training, and limited inputs for new activities and new participants, have been appropriate and effective. We recommend that agricultural assistance efforts focus on farming families with incomes greater than $334 and should continue to emphasize improved production techniques and technologies, better quality and cost-effective inputs, value-added processing, and market information and diversification.

2. Project Concern International

The Department of Jinotega was a combat zone during the 1980's and was severely hit by Hurricane Mitch in 1998. Much basic infrastructure is still missing, with poor road access, limited electricity availability, communication difficulties, few potable water and sanitation resources, and inadequate social services. Coupled with steep hills and valleys, Jinotega's agriculture sector faces numerous challenges with food deficits and low incomes for the bulk of the population. Through the Food For Peace Development Activity Proposal, Project Concern International (PCI) is working to improve food security for rural families in Jinotega, through increased agricultural income, improved sanitary conditions, and better health and nutrition of women and children. Focusing on agriculture, PCI continues to work with selected farmers to improve production, processing, and marketing of particular commodities.

PCI's efforts to improve agricultural capacity and marketing are currently reaching 1,518 farmers (15% women) from 67 different communities, exceeding the Life-of-Project target of 1,300 with ten months of implementation to go. These efforts have evolved significantly, from rather limited initial interventions with disorganized groups of farmers to much more focused support to specific target farmer groups who have shown particular promise. Technical assistance (six technicians at present are employed by PCI), training, procurement of inputs and construction of infrastructure are the general instruments employed. PCI is now concentrating on farmer organizations as a major means of reaching producers; two large agriculture organizations formalized in 2006 (one business enterprise focused on potatoes with 180 members and one coffee cooperative with 336 members) and eight "Community Microfinance and Commercialization Enterprises" (with a combined total of 333 members). The cooperative and all nine enterprises are legally constituted as corporations. These represent 56% of the participating farmer population. These groups, however, were only formed in 2006 and appear to have a long way to go before they are viable, sustainable institutions. Revenue does not cover expenses (the potato producers' firm, SOPROCON, stated that only 40% of costs were met by income and that PCI was financing most operational costs) and credit availability through the groups was inadequate. Collective sales of produce have yet to occur, yet all do have legal status as *bona fide* agro-businesses.

PCI's technicians spread assistance and training to individual farmers through a system of 'training of trainers', whereby the technician trains four farmers, who in turn each train four farmers who in turn train an additional four, thus reaching, in theory, 84 farmers with each one-on-four training or general technical assistance rendered by the technician Other elements of the program include the use of demonstration plots (20 were done on new types of fortified corn), provision of farm inputs (including fertilizer, aspersion pumps, one motor pump, sprinkler-irrigated greenhouse, and four collection/sorting/storing centers), market information on pricing, training (all participants have received training on numerous subjects), production planning, facilitation of contacts between producers and potential buyers, improvement of product quality, produce storage reliability, and application of Best Practices in Agriculture (BPA) and integrated pest management (IPM).

Marketing assistance by PCI to participating farmers has largely consisted of identifying reputable buyers, bringing those buyers and producers together, facilitating equitable sales

agreements and contracts, helping farmer groups to understand the needs and standards of buyers, to sort and pool commodities that meet the buyers' requirements. The progress in improving commodity marketing is measured in several ways: percentage of producers who fulfill quality standards for their products; percentage of farmers who receive pricing information; number of farmers trained in commercialization; and percentage of farmers who are part of agro-businesses that have commercial plans. Sales increased from $2,716,000 in 2002 to $6,347,000 in 2006, a gain of 133%. Over the same period, production gains were much lower, growing from 10,482 tons to 13,594 tons in 2006 (a gain of 29%). This very modest gain in production was offset by much better prices. PCI has determined that 87% of the producers fulfill the necessary quality standards for competing in the formal marketplace, 90% have been receiving relevant pricing information, and 68% are part of organized agro-businesses that have commercialization plans. These results meet or exceed the targets set for FY 2007.

PCI uses the Lot Quality Assurance Sampling system and the sample size generally of 114 participants. Recognizing that the system has some limitations (e.g. the great variation in income levels for farmers growing different crops and having different-sized farms), it provides a reasonable methodology for calculating most results. Some key accomplishments to date are noted. The average net income of participating producers went up 156%, from $246 in 2002 to $631 in 2006. Post-harvest loss of basic grains was an excellent 0.85%, much better than the target of 5% and the 5% shown as the baseline. (The performance target should have been adjusted when annual results were dropping significantly.) Grain storage silos were provided both before and during the DAP. Understanding and use of conservation and integrated pest management (IPM) practices met or exceeded the targets for FY 2007, with most farmers applying at least two conservation (85%) and two IPM (60%) practices. Production gains, when comparing FY 2002 with FY 2007, were only 30% (10,481 tons vs. 13,594 tons). The percentages of farmers receiving pricing and marketing information (90%) and having business plans (67%) were on target. For farmers implementing production plans (53%), achievement fell short of the 60% target, as did women in leadership roles (10%), well below the planned 15%.

Arguably the most significant measure of progress in agriculture is net income per farmer and the gains overall have apparently been good. According to the data obtained through the LQAS system (taking a sample of 19 farmers from each of six areas of intervention), net income has more than doubled in five years, growing from an average of $1,816 net income per year to $3,670 in FY 2007, with 79% showing a growth of 10% or more in net income during the last year. The median net income is not available. The data do not distinguish between the poorest elements of the target population and others, nor do they separate basic grain farmers from coffee and horticulture growers. This concern is somewhat obviated by the fact that most of the participating producers are commercial farmers and most participants have shown continuing gains over the last three years.

Production gains, as noted earlier, were quite modest. This may be a reflection of the level of effort by PCI during earlier phases of the project, new crops introduced that have lower yields per land area, or because of cyclical yields in coffee production. One measurement, "…% of producers that increase their harvest yield per unit of area", does report that annual improvements in yields have been realized by 60% of the farmers in FY 2007 and this is certainly a positive indication. It is surprising that PCI is not required to include gross sales of

participating producers in the annual results report, as sales is the basic measure used by USAID/Nicaragua for showing progress the Economic Growth Strategic Objective.

Even with these data reservations in mind, there is evidence that PCI agriculture assistance efforts have made significant contributions to the progress made by participating farmers. Income has improved, new markets have opened up, better and more reliable crops are being sold for higher prices, and greater cohesion has been achieved by assisted farmer groups.

Recommendations

One universal observation was that farmers appreciate and desire continued technical assistance and training in the production, processing, and marketing of their produce. In the target geographic areas only PCI has been providing such support. It is also apparent that past support has contributed to improvements in income and yield, although a better breakdown by farm size and crop for participants would help analyze the impact. It would be useful if PCI, in its final year of activities, could better measure the full impact of its contributions to production (given the limited gains in yields of FY 2002 and FY 2007). With that information, decisions could be made on whether further outside assistance to farmers who fit the selection criteria for such help would be cost effective and worthwhile. We are reasonably confident that this will be the case.

It is recommended that all reporting in future PCI agricultural programs include measurement of sales, production and net income for different categories of participants and that either the sampling size be greatly increased and separated by commodity or all participating farmers be included in the data collection system.

Efforts that are in early stages of implementation, including operation of the potato/malanga processing and packing plant and assistance to the ten organizations established by the program (credit/commercialization enterprises and one cooperative), will still be in need of financial and technical assistance after September 2008. PCI is the organization best positioned to provide that support and hopefully resources will be found to continue the organization's work in agriculture and with these groups. The organizations themselves have been in operation for less than two years and have a long way to go before they are self-sufficient (eight enterprises rely totally on volunteer staff). Without support from PCI or a similar body, it is very possible that they will fail shortly after assistance is curtailed.

3. Adventist Development and Relief Agency

ADRA works in areas where food insecurity has been a historic problem. The largely agrarian population of Nueva Segovia and Madriz Departments has, in many cases, been trapped in a pattern of poverty, due to low productivity of marginal lands, lack of capital and technology for productive improvements, and lack of access to good, stable markets for their products. Poverty has in turn affected birth weights and nutrition of children and limited economic opportunities for young people coming of age in rural communities.

ADRA's agriculture program is designed to increase family nutrition and economic opportunity by increasing agricultural productivity, especially among high-value non-traditional crops. ADRA's income generation activities have been oriented toward populations who have access to the resources necessary to take fullest advantage of technical improvements and realize appreciable economic improvements. These criteria include fertile land, water for irrigation, access to markets (proximity to main roads), and access to credit. Farmers meeting these criteria have benefited from ADRA's program designed to build capacity in non-traditional crop production, or more specifically, irrigated horticulture. This program has included training in commercially-oriented production, modern agronomic methods, and business management and decision-making for 140 producers.

To rural populations who lack one or more of these criteria for commercial horticulture, the ADRA poverty reduction and food security program has offered other opportunities, including training in increased productivity of basic grains (maize, beans, sorghum), training in the use of small-scale drip irrigation systems, crop diversification to include an array of non-traditional vegetables and fruits in family gardens, and delivery of high-yielding hybrid seeds, drip irrigation equipment, and small-scale greenhouses for vegetable seedling production. The basic grains activities reached 6,190 farmers, or 103% of the target of 6,000. Family gardens reached 2,795 families, or 112% of the target of 2,500.

Tangentially, the food security and income generation program has received material support from the environmental activities undertaken with Food For Work Work (noted later in the evaluation). Rural access roads used by commercial vegetable growers have been rehabilitated, contour bunds have been constructed in marginal lands, and hillsides and roadsides have been reforested with both wood and fruit species. Road rehabilitation contributes to the viability of commercial horticulture by improving market access, and the planting of fruit trees (hog apples, mango, cashew, avocado, citrus, etc.) will contribute to family nutrition, and perhaps to limited income generation, when the young trees begin to bear fruit.

The most dramatic part of ADRA's agriculture program is the development of commercial horticulture. ADRA has used a complete value chain approach, addressing each stage of production and marketing, from credit access, to seedling production, to irrigated greenhouse and open field production, to post-harvest handling, quality selectivity, and sales to large contract purchasers as well as wholesale intermediaries serving urban. The program includes a great deal of highly specific and detailed technical training for seedling producers and vegetable growers. Just as importantly, it has built the business management capacities of seedling producers, farmers, and producer-owned marketing companies formed under the program. Most

participants in these activities were formerly basic grain growers plagued by low productivity, limited market access, and low returns. Through these interventions 140 vegetable producers have become specialized market-oriented producers operating according to universal business principles, serving both national and international markets.

Entry into high-productivity, high-value production systems requires substantial capital investment. ADRA has been active in providing credit on soft terms (0% interest initially, rising to 8% in 2005, compared to 24% or more per annum at commercial banks.) This credit has been used by 140 horticultural producers for the purchase of drip irrigation systems (lease to own) (motor pumps, water tanks, pipes, valves, filters, drip tape), plastic row covers, hybrid seed, fertilizers and pesticides, labor, and other production inputs. Aside from the subsidy represented by low interest rates, farmers have basically paid for most of the materials they use. The exception is greenhouses, which are used by dozens of producers. In addition to cash credit, ADRA has provided subsidies and in-kind loans in the form of greenhouses that cost $5,000 or more. Users are expected to repay US$2,400 for each greenhouse, or approximately 50% of the lowest-cost model, over the course of eight cropping cycles ($300 per cycle.)

Another crucial input is seedlings. High-value commercial production requires the use of disease-free certified seedlings, and these are grown in a special facility in Loma Linda (community of Santa Clara in Nueva Segovia). The facility is owned and operated by a private entrepreneur, who has benefited from training sponsored by ADRA and by ongoing technical support. Loma Linda has produced 8.1 million seedlings since 2003. It supplies vegetable growers all over northern Nicaragua and as far away as Granada. The seedlings are produced on contract with individual growers and producer companies and cooperatives, who order them according to vegetable orders that they in turn receive from institutional clients. The greenhouses and water system were built with $20,000 of financing from ADRA, of which the owner is repaying 50%, interest-free, on a lease-to-own basis. Repayment will take five years, meaning that the foregone interest cost would be worth more than $6,000 at prevailing commercial interest rates, in addition to the $10,000 capital subsidy. The manager told evaluators he makes 10-15% profit.

Planting dates, and therefore seedling delivery dates, are calculated backward from the vegetable purchase dates specified by large buyers such as Hortifruti S.A. Farmers stagger their planting dates, putting a new crop into the ground typically every 15 days, in order to keep up continuous production. This is in response to the wishes of buyers.

Another basic requisite for this type of production is water. Water strategies used by farmers depend on their individual conditions; some are located near year-round springs in the hills, which they tap and transmit to their fields and greenhouses using gravity flow. Others have individual wells and pumps. In three productive areas around Totogalpa in Madriz, year-round surface water is not available. Hydrological data showed the presence of a deep aquifer in a small, relatively flat valley. Using a grant from another USAID project, ADRA had three borehole wells drilled in 2005. These wells are up to 90 meters deep, with submersible electric or diesel pumps that fill 50,000 liter tanks. From the tanks the water is distributed to growers via pipes, and the water delivery is metered. Growers pay $0.40 per cubic meter of water and the money generated pays for the operation of the pumps, as well as a fund for repair and

maintenance.

All of these production-related interventions would be futile without a robust marketing component. To that end ADRA has assisted the start-up of four producer-owned marketing companies: EMPROSESA in Jalapa, EMPROQUISA (Empresa de Productores de Quilalí S.A.), PROCOA (Productores y Comercializadores Agrícolas S.A.) in Mozonte, and PROCONTSA (Productores y Comercializadores No-tradicionales S.A.) based in Totogalpa. Each of these companies has a collection depot and relations with both input suppliers and produce buyers. These forward and backward linkages facilitate the bulk purchase of inputs such as seedlings and agro-chemicals, as well as negotiated production contracts designed to maximize income to producers. Each of these companies is owned by shareholders, who are also producers, and is run by an executive council elected by the shareholders. The companies also purchase horticulture products from other producers who are not shareholders. From time to time the companies raise capital by creating and selling additional shares. The companies employ workers for the purposes of accounting, warehouse management, technical services to producers, and market development.

The producer companies, like individual growers, have received extensive technical and management training. Their technical activities include collecting production at the depots, sorting according to quality standards used by the buyers, and appropriate packing and storage. Management activities, besides collective bulk input purchase and output marketing, include tracking of costs and profits, continuous market monitoring, payment of taxes and employee wages, and other fiscal functions. These companies are for-profit entities dedicated to the maximization of income to growers and shareholders.

The marketing component of the horticulture program has built strong relationships with commercial wholesale buyers such as Hortifruti/Walmart, Sopas Nejapa, Mercado Mayoreo, and others. The prices paid by these large buyers finance the rest of the production chain. Demand from wholesale clients has grown to 663.5 metric tons per year. ADRA agribusiness staff have continued to broaden the pool of potential and actual wholesale clients, such as Mount Dora Farms in Honduras and “Texas”, thus protecting growers against future disruptions in the purchases of any individual client. Export markets are specifically targeted with the support of Nicaexport, a government and private sector export promotion agency. Diversification of marketing options is one component of sustainability.

In the interest of professionalizing its agribusinesses, ADRA contracted with an external evaluator, the Centro Agronómico Tropical de Investigación y Enseñanza (CATIE), to perform an analysis of their management strengths and weaknesses. The analysis came out generally positive but recommended some areas for strengthening, such as physical capacity and business training for shareholders and boards of directors.

In contrast to the commercial horticulture activities, agricultural interventions oriented toward poor and marginalized communities that lack the basic conditions for commercial horticulture are small-scale, designed for family nutrition (subsistence agriculture), and involve a greater proportion of subsidies than credit-financed larger scale activities. These families are given, free of charge, productivity-enhancing technologies for small-scale agriculture such as hand-bailed

micro-drip irrigation systems, non-grafted fruit tree seedlings, hybrid seed for maize, beans, and vegetables, and micro-greenhouses. The basic grains and family garden activities work through local groupings, especially in the case of vegetable seedling production in the micro-greenhouses of mothers' groups, but production is carried out on individual land parcels, and the produce is consumed or sold by households. The family gardens program is targeted specifically toward mothers of young children.

The results of the income generation aspect of ADRA's agriculture program are as dramatic as the intervention itself: One hundred forty formerly poor maize and bean farmers now have net incomes averaging over $3,600 per year in 2007, and are able to pay for new or improved housing, the education of their children in the primary and secondary levels, and better nutrition and clothing for family members. Breadwinners can also afford to stay home rather than traveling to find itinerant work, which is an intangible but significant improvement in living standards, contributing in material and psychological ways to the welfare of children. Significant amounts of the income generated through the productive activities are reinvested for the continuation and expansion of the production itself, as well as in other economic activities such as petty commerce, thus consolidating income generation. Perhaps more significant than immediate financial income is the observable conversion of subsistence-level small farmers into business people conversant in the language of production costs and profit margins, productive investment, and the evolution of markets.

On a community level, places such as Totogalpa and Mozonte, where horticultural promotion has been concentrated, have undergone dramatic changes from areas of rural poverty to centers of specialized high-value production. A Hortifruti purchasing agent, for example, expressed his wish to be able to buy all of his table tomatoes from these areas because of the quality of the product and the organization of the producers. As one woman who is both a producer and a shareholder of PROCONTSA put it, there is more money circulating among producers and all other community members - buying and selling many new goods and services.

ADRA beneficiaries surpassed the majority of the objectives set for the agricultural activities in 2007. They achieved 105% of overall productivity for vegetables in FY 2007 (254 kilograms per manzana vs. 243 kilograms/manzana). Direct sales of crops to market buyers were practiced by 82% of producers vs. a target of 70%. Targets for yields of certain crops were surpassed as well, such as 48,200 pounds per manzana for jalapeños vs. 35,000 (138%), industrial tomato (1,757 boxes/manzana vs. 850 or 207%), baby vegetables (16,358 pounds per manzana vs. 11,000 pounds or 149%). On the other hand a few indicators were missed: Open field table tomatoes, for example, were produced at 4.37 kilograms per square meter vs. the target of 7.0 kilograms (62%); seedling production at Loma Linda was at 90% of the target of 2 million, but fulfilled 100% of seedling demand for FY 2007. In general, achievements vs. targets bear out the positive impacts visible in the field.

In terms of sustainability, both individual producers and the companies that represent them have already acquired the capacities necessary to continue operating and expanding on their own. ADRA has developed and supported the entire value chain; upstream and downstream linkages necessary for the perpetuation of the sector are in place. Should one market fail, beneficiaries have the capacity to identify others; should certain crops become unprofitable, they have the

technical expertise – or know where to get it – to develop others.

The smaller-scale interventions on behalf of subsistence farmers in marginal areas show some improvement, although production and sales figures are not available. The use of silos reduces the traditional loss of 30-50% of stored maize to nearly zero, making more of production available to eat. The cultivation of fruits and vegetables in family gardens diversifies the diets of poor families, adding particularly foods rich in vitamins that improve resistance to disease. The fact that the families produce their own fruits and vegetables and even selling some, rather than having to buy them as before, increases disposable cash as well.

These small-scale beneficiaries in the basic grains and family gardens components make up 4,101 out of the 4,241 participants in the agriculture program, or 97%. The dramatic income increases described above therefore apply to the 3% of agriculture program participants involved in commercial horticulture; for the rest, the impacts are positive but much more modest and are not quantified.

Unfortunately the sustainability of some of the small-scale interventions appears doubtful, since the donations of miniature greenhouses, hybrid seed, micro-drip systems, and other production factors are simply not replaceable without project resources. They have not led to sufficient income generation for beneficiaries to procure these things on their own. It is hoped that people will continue the family gardens using manual methods after the greenhouses and drip systems wear out, and that basic grain farmers will learn the necessity and the means of procuring hybrid seed by the time the project is over.

Participation in ADRA's commercial agriculture program has permitted beneficiaries to improve their lives by sending children to school (including secondary level), buy or renovate their houses, keep vehicles running, and start other family businesses such as *pulperías* or corner grocery shops. Those participating in the smaller-scale basic grains and family gardens component have been able to increase disposable income by growing what they formerly had to buy and even selling some, and improve family nutrition by eating more vegetables. One woman used her increased grain earnings to begin trading in grains, and ended up sending her son to university in Estelí.

Recommendations

Gender balance in ADRA's commercial agriculture activities requires some adjustment. Men outnumber women 119 to 21 as participants in commercial horticulture, and in the case of PROCONTSA's 26 producer/shareholders, only one is female. ADRA technicians have, in some cases, specifically recruited individual women for training and participation; this should occur more frequently. Housewives' domestic duties have been cited by both men and women as obstacles to their participation in business. Recruitment efforts could therefore place some emphasis on young women who as yet have few children and domestic duties, and who may be more business-oriented.

In any future program of a similar nature, the inclusion of high-quality fruits along with vegetables would expand economic opportunities, and would be practical in some locations that

are less well suited to irrigated vegetables. Tree crop production takes longer (at least three years before the first crop) before yielding economic results, but requires much less expenditure on labor, and provides more stable production in the face of droughts and storms. Grafting not only improves fruit quality, but hastens the first yields, and nurseries that provide grafted and ungrafted seedlings are a rural microenterprise opportunity – as long as they are treated as such and not subsidized. Species that could be promoted in this zone include mangos, citrus, avocados, cashews, hog apple, and tamarind.

Developing or identifying additional low-cost technologies might bring them within the reach of more poor farm families. Potential examples include; small greenhouses constructed with plastic sheeting and locally-built frames, and hand or treadle pumps manufactured locally.

The results of ADRA's agriculture program show that significant and quantifiable income increases for larger numbers of participants are best achieved among commercial farmers. These include farm families operating above the subsistence level, with some resources to invest, and possessing the requisite land and water resources as well as market access, but who have not yet achieved the level of affluence that could be possible with the aid of technical assistance, training and credit. This stratum of the rural population can yield the best costs-to-benefits per unit of project resources invested, and the income generated also could foster employment, other businesses linked to agriculture, and unrelated community businesses catering to these farm families and their employees. In short, more attention should be devoted to farmers such as those in ADRA's commercial horticulture program.

4. Save the Children USA

Rural areas of Nicaragua's northwest are often isolated by distance and rough roads, and the main sector of economic activity, agriculture, suffers from a relatively dry climate. The climate limits the kinds of crops that can be grown, and the difficulty of market access constrains commercial opportunities for growers. In addition, extensive tracts of land in the Department of Chinandega are under the control of large landowners who grow sugar cane and peanuts or graze cattle. Landholdings for poor communities are generally small and are often located on marginal hillsides.

The impact of low productivity and profitability on family nutrition is notable in traditionally high incidences of malnutrition and slow growth in infants and small children. Save the Children's Programa Comunitario de Extensión y Nutrición Integral Strategy (hereafter called SCF's strategy) is designed to increase food availability through improved grain production and storage, production and marketing of high-value non-traditional commercial crops, irrigation, and small animal husbandry. Together, these activities are meant to increase the amount and variety of food produced in rural areas, improve storage so that more of it is available for consumption, and increase purchasing power among poor families to improve their access to food and health services. A second main component of the SCF strategy deals directly with maternal and child health.

Save the Children's strategy starts with a community resource diagnostic, in which communities are classified into one of three levels, from subsistence at Level 1 to those families fully engaged in the cash economy at Level 3. This community welfare status classification determines which interventions are chosen for promotion, and the level of contribution expected from beneficiaries. The poorest families in Level 1 benefit from outright donations of equipment, inputs, and livestock; those in Level 2 contribute 20% toward purchase, and those in Level 3 pay 100% of acquisition costs. As families benefit from Save the Children's interventions, they are expected to move up to the next level. As they reach Level 3 they are supposedly self-sufficient to continue and expand their new agricultural activities using their own resources.

Families with no access to land whatsoever may be oriented toward business activities. Those who have only the yards around their houses are taught to use those yards for food production, and are given fruit tree seedlings, seeds for small vegetable gardens, and/or small livestock such as laying hens, sows or stud hogs, or milk goats. These micro-scale productive activities are designed to generate additional food for the families, and to a lesser extent to generate cash income when there is a surplus that can be sold.

Families with access to some agricultural land are taught techniques for increased productivity of basic grains (such as use of hybrid seed and increased planting densities); cultivation of high-value vegetables using drip irrigation, greenhouse seedlings, and agro-chemicals and organic inputs; and collective marketing of both grains and vegetables via informal groups or cooperatives, in order to procure and use market price information, identify buyers, and negotiate better prices. These families are given, with an 80% or a 100% subsidy, drip irrigation equipment and the first round of inputs, barbed wire for fencing, and technical and marketing training. Save the Children does make a thorough effort, however, to link producers both with

input suppliers and with purchasers for their produce, so that they have the information necessary to carry on the activities independently. To this end they have published a guide, in the form of a booklet titled *Guía de Comercialización Agrícola para Pequeños Productores*, which contains lists of input suppliers and output buyers, as well as graphic illustrations of seasonal price fluctuations for a variety of horticultural crops. Save the Children also organized in 2007 a fair where producers, suppliers, and purchasers could meet and exchange information.

Nearly half of SCF's agricultural producers are members of groups whose purpose are collective marketing and leveraging of optimal prices for their crops. There are 40 such groups, including 32 informal associations, 7 cooperatives, and one enterprise. SCF trains the groups in collection of production at designated sites and times for pick-up by clients, in organizational capacity, market development, and production techniques. In addition, a connection is built in many cases between these groups or individual producers and external credit sources such as Financiamento Nicaragüense para el Desarollo S.A. (FINDESA), the Centro para la Promoción del Desarollo Local (CEPRODEL), Fundación para el Desarrollo Socioeconómico Rural (FUNDESER), the Taiwanese Mission, Fondo de Prestamos Agropecuarios (FODEPAGRO), Banco ProCredit, and Cooperativa El Progreso, so that beneficiaries can acquire the capital necessary to enhance and expand their operations.

When Level 2 and Level 3 beneficiaries make 20% and 100% contributions, respectively, toward the cost of the production technologies they use. The payments are put into a community fund governed by a committee of women, who allocate the monies to community members of their choosing for development activities. Since inception, 1,380 poor women have received grants of recycled project money in this way.

In Somotillo, in collaboration with the town government, Save the Children set up in May 2007 an agribusiness center, the *Centro de Agronegocios de Somotillo*. This center offers market information, technical consultation, and a link to a credit program funded by the Spanish government and managed by the Mayor's office. The Centro itself is housed within the local government offices, but the salaries of its three employees are paid by SCF, so its future after the end of the SCF program is uncertain. Save the Children has hired a consultant to draw up a three-year business plan for the Centro, which will recommend a menu of services and the fees to be charged to farmers in order to fund its indefinite operation.

Non-traditional crops included in the agribusiness promotion include tomatoes, peppers, watermelon, cucumber, pineapple, squash, and sesame. Seedlings are produced in several small-scale greenhouses operated by community groups, and purchased for distribution to farms. In the early crop cycles the main client is Save the Children, which buys the seedlings for distribution to new horticulture practitioners. As time goes on Save the Children's prominence as a client diminishes, and in at least one case a seedling production group caters exclusively to neighboring farmers.

All families in the program are eligible to receive donated grain silos for grain storage. Most are made of galvanized sheet metal by local artisans, but some families have used plastic bags. Users are taught how to dry grain and protect it from pests during storage.

Save the Children strongly encourages the formation of producer groups, either informal associations, formal cooperatives, or enterprises. Thus far eight formal groups have been formed, including seven cooperatives and one enterprise. SCF provides training for group formation and management.

Some tree nurseries have been established also, but not as independent operations; they exist mainly to supply seedlings for reforestation works carried out with Food For Work. In terms of the areas reforested in this way, no monitoring is done to determine the rates of survival of the seedlings, so the numbers given for the quantities of trees planted does not give any indication of the numbers of additional trees, or reforested area, actually growing in the project area a year or more after planting.

In terms of achievement of project indicators, 1,696 families have increased production of non-traditional high-value crops, which is 170% of the target of 1,000 families; 89 manzanas of land was under irrigation at the end of FY2007, or 111% of the target of 80 manzanas; 588 producers were using irrigation to produce high-value crops, which is 16% below the target of 700; 2,698 households had increased their production of small livestock (in some cases from a baseline of zero), which is 270% of the target of 1,000 families; 778 households were marketing their products through the improved channels, or 104% of the target of 745; and 47% of producers were organized into associations with marketing plans vs. a target of 30%, or 156% of the target.

For organized groups, registers are kept of production costs, sales earnings, and net profits. (This information was used to compile the *Guía de Comercialización Agrícola*.)

For subsistence-level family garden and basic grains producers it is more difficult to track cash and in-kind income per producer, per family, which is the critical measure of family welfare improvement. Figures supplied by SCF show that an average subsistence gardener increased the variety of home-grown vegetables from four kinds to seven during the program, and increased the overall quantity of vegetables from 79.4 pounds to 183.0 pounds, a 230% rise. In addition, the quantity of home-grown plantains and cassava (both staple foods) rose from an average of 19.5 pounds to 52.0 pounds, a 267% increase. This gives some idea of the impact of family gardens on family nutrition.

Beneficiary satisfaction is high with the collaborative marketing of field and horticulture crops. Producers say that they regularly earn 10% more for the sale of the same crops as compared to when they sold individually. In addition, those growing grain using improved spacing and seed realize yield improvements on the order of 25-30%.

Producers also appreciate the value of their linkages to both input suppliers and produce purchasers. They have received the *Guía de Comercialización* and regularly cite it for its lists of contacts. Though the commercial agriculture activities under SCF are new within the last two years and have thus not had time to prove that they are definitively self-sustaining, evidence available at this point suggests that beneficiaries' mastery of technical production techniques, financial management, and marketing, will make the activities permanent after the end of the project.

According to both SCF staff and beneficiaries, most of the common vegetable crops have come to the area through the SCF intervention. Field observations suggest that their cultivation will continue and will grow in the future, which would be another sustainable result from the project. Imitation of project activities by non-beneficiaries is always a sign of the value of the intervention; neighboring farmers have been known to buy drip irrigation systems and vegetable seedlings and copy their SCF neighbors.

The technical production techniques taught by SCF are thorough and are mastered by producers in every type of community. They understand and practice methods such as "ferti-gation", staggered planting, solarization of soil to reduce nematode incidence, etc. This is a tribute to the skills of SCF field staff.

Small livestock has proven to be a low-cost way of involving even the poorest families in sustainable and replicable income generation. Families keeping chickens harvest eggs and meat while their bird populations grow. Goats and pigs reproduce and are shared among the families within communities in Chinandega so that from a few initial donations, many families benefit. These animals provide meat and cash, and the goats also yield milk which is used directly in child nutrition. Hog stud fees, at about $20, bring regular cash income.

Female participation in all of the activities is high. Women make up 37% of marketing and agribusiness groups, which serves as a model for similar projects. In most other aspects of SCF women are a majority.

Recommendations

At this late date in the program, Save the Children field technicians are still performing many services for farmers that they should be able to do for themselves, or obtain from permanent sources such as local service providers. For example, project staff still send soil samples to Managua for analysis and then instruct farmers in which soil amelioration measures to take; they perform market analyses and recommend to farmers which crops will be the most profitable in a given cycle; and they deliver inputs to farms rather than accompanying farmers to the source to procure them. The activities could be made more sustainable if technicians accompanied and instructed beneficiaries, rather than performing these tasks for them.

Model farms are a traditional impulse of donor-funded agriculture projects, but their value depends on how they are carried out. When project staff decide which farms are to be models, and then deliver high levels of goods and services over extended periods, model farms are not effective. Farmers brought to such sites understand that these model farms work as well as they do because of the unusual levels of project resources that they receive, and that their relevance to the farmers' own situations is therefore limited. A better system is to work with highly-performing beneficiaries, providing them with technical advice but no more material resources than any other beneficiary receives. As a self-made model farm reinvests and develops, project staff can then honestly tell other farmers that this level of development is possible using the same resources that everyone else has. SCF has such stand-out beneficiaries who could serve as more appropriate models for their peers.

In the adoption of profitable production technologies such as drip irrigation or small livestock, the experience of other projects has demonstrated that beneficiaries can and should be expected to pay for the cost of the investment out of their earnings, using credit. This serves three purposes: 1) It inculcates a spirit of investment for profit, which is a key element in business training; 2) It keeps the cost of investments in line with their profitability; 3) It conserves project funds for use with a greater number of beneficiaries. This is in keeping with SCF's approach with provision of pumps and fungicides, where beneficiaries are expected to pay or repay 100% of the costs.

The distribution of grain silos on 80% or 100% subsidy is completely unsustainable, but this could be improved by expecting Level 2 and 3 families to pay most or all of their cost, and by involving beneficiaries in the procurement process. Most recipients of grain silos at present would not be able to order another if they needed to.

Likewise, the system of recycling recovered costs into community funds for solidarity distributions, while charitable, is not sustainable. It is actually a means of passing project monies into community donations. Especially in the case of Level 3 beneficiaries who pay 100% of the cost of technology adoption, they should pay it directly to the supplier, as in any normal business transaction, with the project playing the role of facilitator rather than intermediary. This would prepare beneficiaries to interact with suppliers on a permanent basis. Even when the project provides a subsidy, the beneficiary could still interact with the supplier, accompanied by project personnel.

Monitoring should be done of reforested areas to measure survival rates after one, two, and three years. This would provide an indicator that tree planting has yielded an actual benefit, and that the seedlings planted in exchange for food rations have not all died from drought or been eaten by cattle or overwhelmed by weeds.

In the case of failure of certain agricultural activities, heavy rains and drought have alternately been cited as the cause. Since neither of these is an unusual event – and since even greater events like hurricanes can be expected with some regularity – agricultural activities must be designed to take them into account, i.e. by raising and protecting garden beds in communities like Cosigüina where family gardens were completely wiped out by rains in October, or by promoting them only in areas not subject to flooding.

C. Microfinance and Microenterprise

Pulpería in Nueva Segovia

Expanded farm in Madriz

The availability of credit is essential for effective agricultural activities and most small businesses. Timely access to financial resources for the purchase of farm inputs, including equipment, seeds, fertilizer, tools, and labor (as well as stock purchase, rent/mortgage, or labor for small enterprises) can be critical for optimizing potentials and opportunities in commercial agriculture. All programs that have increased income through commercial agriculture or businesses as a desired result need to factor in credit as a crucial element that must be present for success.

1. Catholic Relief Services

While the overall goal of the CRS DAP is to improve food security of poor rural families in the Departments of Jinotega, Estelí and Matagalpa, the credit component goal is to provide a sustainable mechanism for financing the purchase of agricultural and commercialization inputs to better enable producers to improve their farms, processing/storage plants and to process crops according to market demands. The original target was to finance up to 2,200 small and medium size farmers located in municipalities with high poverty rural areas with farms of one to five manzanas, often characterized by soil erosion, fertility loss and deforestation.

The market-driven strategy being promulgated by CRS requires that the credit component complements and supports the program agricultural activities by financing farmer agricultural inputs which support this approach. This strategy also requires the farmer to shift in production from basic grain and subsistence operations to higher value crops that will ultimately result in higher incomes and improved standard of living. The credit program has mitigated the risk that the target population has historically faced in obtaining agricultural loans from the Nicaragua financial sector. Loans were made to finance dairy cattle, oxen, small animals (chicken and

pigs), fruits and vegetables, crop retention and infrastructure. The credit programs are being implemented by several long-term CRS development partners, namely Caritas Esteli, Caritas Matagalpa, Caritas Jinotega, and The Foundation for Investigation and Rural Development (FIDER), all of which have offices in targeted municipalities.

CRS/Caritas/FIDER reported cumulative loans of $3,057,497, with payments to date of $2,660,022, benefiting 1,228 farmers, 31% of which were women. During the same period the percentage of families increased incomes through Agriculture , microfinance, and commercialization interventions on average exceeded baseline hurdles by 25%. The number of farmers who improved production on at least two high value non-traditional crops such as vegetables, fruit trees, etc., increased on average by 50%. Majority of these farmers have received credit to great effect. Field observations and review of the use of loan funds also lend weight to this conclusion. The credit methodology, largely employed by the program, is to provide credit through Solidarity Groups, and taking real property as collateral.

The CRS/Caritas/FIDER combined loan portfolio (through the DAP only) was reportedly $567,546.00. Caritas Matagalpa manages 54% of the DAP-supplied loan funds, followed by Estelí 31% and the 15% balance is FIDER – Jinotega.

Caritas Jinotega and FIDER Jinotega, combine their expertise in the agricultural and credit sector to identify and finance for the most part vegetable growers (82%) and livestock producers (15%). Also, they combine their expertise and due diligence to maintain a healthy credit portfolio, with loan losses at 2.2% of total outstanding loans during fiscal year 2007.

Caritas Estelí and FIDER Estelí clearly identify the target population that will most likely benefit of the technical assistance, improved seed variety and new agricultural practices and will repay loans at end of planting cycle. During the five years of the program, DAP-supplied credit has financed collection centers, organic vegetable production, irrigation, livestock and small marketing centers. The Caritas Estelí/FIDER Esteli loan portfolio now has 69 solidarity group clients, for a total of 208 borrowers, of which 59 were women.

Caritas Matagalpa, CRS biggest partner with 54% of DAP Credit resources, provides credit to 182 solidarity groups, consisting of 685 individuals (of which 275 are women) in fifteen rural communities throughout the Matagalpa Department. Lending methodology, like other Caritases and FIDER, is to use solidarity groups and require, depending on the amount of the loan (e.g. mortgages, liens on animals, inventory and crops). Interest rates depend on what is being financed and range from 24% to 36% per yea. Rates that may seem high but are acceptable when compared to other microfinance institutions or local commercial bank rates. Loan amounts also are reviewed, whenever practical, with the Caritas Agricultural team. This can be difficult because the area covered by the Caritas Matagalpa program is the most extensive of all other CRS/Caritas/FIDER programs, while the agricultural team is in Sebaco and the credit team is in Matagalpa.

Caritas Matagalpa identified serious problems in 2005, both financial and managerial. The magnitude of the problems led to the firing of all top administrative personnel and a new management team was installed in early 2006. Defaulting loans, including falsified records and

older, rolled-over loans, may total as much as $1.1 million for the total Caritas Matagalpa credit portfolio. One of the priorities of new management was to determine the quality of the loans portfolio, a process that has taken almost two years, since it requires an analysis of the loan documentation, collateral and personal visits to each individual borrower and because there was evidence of fraud in some of the loans. During the course of 2006 and 2007, CRS/Nicaragua and the Caritas Matagalpa management team have worked together and established a series of internal controls, processes and procedures regarding loan disbursements, and recoveries, collateral management, policies regarding loans provisions and charge offs. Also a needs assessment was done on Caritas Matagalpa and, jointly with CRS/Nicaragua, an institutional plan was developed to strengthen Caritas Matagalpa. Implementation is ongoing.

Caritas Matagalpa has made provision for $160,992.52 for a possible write-off of DAP-financed loans. However, CRS considers that the actual charge-offs will be approximately $84,750 or 28% of its loan portfolio, which currently totals $567,000. The loss will probably be taken in FY 2008.

Recommendations

We recommend that Caritas Matagalpa DAP Credit activities continue with the strengthening plan already in place and that all parties involved be advised of all important developments. More timely reporting (e.g. loan defaults and staff firings) should be done.

CRS should provide additional training and oversight of Caritas credit personnel for the remaining period, especially with determination of loan quality (including ones in default), recovery potential, and internal systems controls. Before a decision is made to formally transfer DAP loan capital to the three Caritas credit institutions and FIDE, CRS (and USAID/Nicaragua) should be confident that those funds will be properly used for productive loans and that good financial controls are in place.

When the loan losses and defaults have been thoroughly checked, Caritas should be urged to seek legal counsel on determining whether funds can be recovered in cases of misappropriation or falsification and whether there are benefits to pursuing legal recourse with all those found to be involved in fraudulent activities.

Consideration should be made for co-locating Caritas credit and agriculture activities. There should be daily interaction and communication between credit and agriculture staff. This would be improved considerably if they were working in contiguous offices.

2. Project Concern International

Small-scale producers have historically been unable to access and secure credit from either the commercial banks or even microfinance institutions, because lending to such farmers is considered risky and outside of the institutions' realm of experience and interest. Credit is needed to support the financial requirements of producers who are moving away from traditional agriculture into higher market value, non-traditional products, like organic mini-vegetables, oriental vegetables, malanga and quality tomatoes. The move to production, processing and marketing new and high value crops requires changes in agricultural methods, in availability of expertise and technical assistance, improved seeds, and access to new markets for those new products. PCI has identified the need to increase household income in rural areas by improving producer's agricultural capacities and increasing their commercialization opportunities.

PCI's overall strategic objective of improving food security for rural families will be attained by increasing income generation through improvement of agricultural activities in the selected municipalities of San Sebastian de Yali, Santa Maria de Pantasma, San Rafael del Norte, La Concordia and Santa Rosa del Cua. A critical tool for increasing income through agriculture is credit availability. PCI is working with ten organizations through which credit has been provided (mainly for procurement of agricultural inputs). Cooperative of Coffee Producers (COOMCAFE) is the umbrella organization incorporated in 2006 covering 22 communities in the vicinity of San Rafael de Norte and having 336 members (mainly potato and malanga growers). PCI also organized eight Community Microfinance and Commercialization Enterprises (CMCEs), four incorporated recently in four different communities of the Municipalities of Yali and Pantasma, with 333 members. Also, incorporated during the current year was the SOPROCON (Sociedad de Productores y Comercializadores de Responsabilidad Limitada) in the municipality of La Concordia, now having 180 members who concentrate on production of potato and malanga.

During FY 2007, SOPROCON has made loans to 180 member producers (27% women and 73% men). SOPROCON obtains the loan funds from PCI by consolidating the financial needs for a crop cycle from each of its qualified small producers, whose amounts have been approved by PCI agriculture staff. Once SOPROCON has tallied up all the requested amounts, it submits a request for funds from PCI-DAP along with necessary documentation to support the request. Once PCI has reviewed and evaluated the request for funds and finds them acceptable, the funds are transferred to SOPROCON. There are no charges on the loan made by PCI-DAP to SOPROCON. Agricultural inputs such as fertilizer, insecticides and/or seeds are given to each individual borrower in the form of a loan that must be repaid in cash to SOPROCON at the end of the planting cycle. The rate charged by the project is 18% p.a., and 1% commission is applied. SOPROCON repays PCI only the principal amount; interest earned is used by the enterprise
to cover operating expenses that presently cover only 40% of its operating expenses. The inability of SOPROCON to cover its operating expenses is a source of concern regarding its viability once the DAP program ends.

PCI's credit relationship with the CMCEs and COOMCAFE differs from that of SOPROCON in

that agricultural inputs are given directly to farmers instead of cash being disbursed. The objective is the same, as in the case of SOPROCON, interest charged by the CMCEs to its members is utilized to capitalize and strengthen the financial base of their organization. CMCE members agree to the rate of interest members will be charged, ranging between 3%-5% per month and an annual rate of 36%-60%. The interest rate charged by the CMCEs to its members is high because it's a conscious decision on the part of its members to capitalize their institutions rapidly. In the case of COOMCAFE, operating systems parallel those of SOPROCON.

PCI's credit program has provided $688,981 through 1,931 loans, benefiting 968 farmers. Recoveries total $525,962 with a loss/write-off of 3.60%. At close of fiscal year 2007, PCI had loans outstanding to SOPROCON members in the amount of $177,391. PCI, as part of its exit strategy, has decided to retain loan repayments and not re-lend them until the legal aspects of the CMCEs and COOMCAFE was completed. PCI has identified the Center for Studies and Social Advocacy (CEPS), a local NGO that has been working with PCI for many years, as a possible successor for taking over PCI activities in Jinotega over the course of the coming year. Un-lent funds and residual Title II resources are now projected to be $526,000 in local currency by September 2008. PCI lending has earned interest far above the expected 40%, showing a 134% return by the end of FY 2007. This provides justification for PCI's change in strategy of moving away from financing the actual agricultural cycle to support financing the commercialization activities of SOPROCON, CMCEs and COOMCAFE.

Recommendations

PCI should select, with USAID/Nicaragua concurrence, a local non-profit organization to carry on the work initiated (unless PCI can procure funding for continuation). Thereafter, PCI should reach agreement with that entity on an orderly take-over procedure, to ensure continuation of support for the ten local organizations and to ensure a smooth transition.

3. Adventist Development and Relief Agency

The overall purpose of the DAP is to improve food security in selected areas of the country, with ADRA's program concentrating on food access through increased income levels in Nueva Segovia and Madriz Departments. ADRA's credit services were designed to support income-generating activities in a primarily agrarian area. While there are established microfinance institutions (MFIs) in the project area, ADRA felt that it needed to offer credit on concessional terms during the early phases of its project. In agriculture, for instance, in order to mitigate risk to farmers participating in an unproven activity, ADRA initially offered interest-free loans, which would be impossible for an established and viable lending institution.

ADRA's program has included credit administered through two distinct channels. The first is oriented toward farmers participating in the commercial agriculture program, while the second is specifically for non-farm economic activities.

During the period 2002 through 2005 the agricultural credit program offered no-interest loans to support the technical activities of the agriculture program. The loans were structured as rent-to-own, where in the case of default the payments made to date would remain with the lender and be counted as rent, and the physical capital could be returned or repossessed; otherwise the borrower would assume complete ownership upon the liquidation of his or her loan.

In 2005 ADRA raised interest rates in the agricultural credit portfolio to 8% per year, which is still soft compared to commercially-available credit at 20% or more. As of 2007, ADRA discontinued this line of credit and has been encouraging borrowers to take new loans from existing local (sustainable) credit sources such as Asociación de Consultores para el Desarollo de la Pequeña y Mediana Empresa (ACODEP) and Fondo de Desarollo de la Mujer (FODEM). Interest rates for program participants at these institutions are 20%. Loans awarded by ACODEP to ADRA beneficiaries to date total $191,133, and by FODEM $108,867. Default rates for the ACODEP- and FODEM-administered loans are reportedly zero.

The total value of agricultural loans awarded by ADRA is $524,476. The average value of its horticultural loans was $3,543. Due to the failure of some of the original group of horticulture adopters, 28% of these loans defaulted and had to be written off. Due to the low recovery rate, ADRA discontinued direct agriculture lending and moved borrowers over to the local MFIs mentioned above. ADRA has recycled the remaining loan capital into its operating expenses. (This information was shared orally in a meeting between ADRA/Nicaragua officials and the Evaluation team on December 5, 2007.)

In the non-farm commercial credit portfolio, 1,891 clients benefited from a total loan capital of $664,522 in FY 2007. This was 105% of the target for beneficiaries and 102% of the target for total loan portfolio. First-time borrowers are awarded loans for six-month terms, which can be extended to 12 month for the second loans. Over the life of the project $4,931,113 has been disbursed in commercial loans. Total current loans as of this writing are $710,287 for 915 clients, with an average loan value of $776. These loans have carried a 17% annual interest rate since 2002. Of the 1,890 borrowers, 1,304 (69%) are women, who account for an equivalent proportion of the loan funds. Activities supported through this program include commerce,

tailoring, ceramic manufacture, and others. Commercial activities range from ambulant vendors, to pulperías, to trade in goods between towns. Prospective borrowers are interviewed about the economic activities they propose to undertake or expand with the loans, and the amounts are awarded as a function of these, ranging from $100 to $948. Loan recipients are also offered training in small business management. Repayment rates for the commercial credit portfolio have been 95%.

An ADRA document dated November 2005 and titled "Credit Sustainability Plan" stated that a separate, autonomous management entity would be set up starting in April 2006 to handle the commercial credit portfolio and capital. This has not occurred yet, and the evaluation team received no written plan for the commercial loan capital. Oral statements by ADRA officials made during a meeting on 12/05/07 indicate that the strategy in the 2005 Credit Sustainability Plan is still active. ADRA is seeking the permission of USAID to maintain this loan capital in its to-be-created internal, autonomous commercial credit agency for indefinite use in lending.

In horticulture, the rapid rate of technology adoption required for success in the technical activities has necessarily led to a heavy reliance on credit, especially during the first cycles of production. Thanks to the profitability of the activities, as well as to the business training from ADRA, those borrowers who did not fail in the early stages have repaid their first loans and have qualified for and taken second loans, and in some cases third loans. These beneficiaries now have sufficient credit histories and management capacities to qualify for commercially-available credit.

Recommendations

ADRA's rationale for offering credit on easy terms in the beginning was to reduce risk to farmers who were adopting strategies that ADRA itself considered experimental at that point. Since project staff were not yet sure of the results, they reasoned it was unfair for them to expect farmers to take loans at full market interest rates and be exposed to the consequences in the case of default. While such risk mitigation is justified, there are other ways to reduce risk to producers without distorting the credit market. For example, the implementing agency can make an agreement with farmers at the beginning to reimburse them in the case of failure. The reimbursement rate should cover their expenses and be equal to the opportunity cost, i.e. the value of whatever they would have grown ordinarily. The rate should be less than the normal earnings for the new crop, in order to leave producers an incentive to harvest and market the crop successfully if conditions permit.

The decision by ADRA to discontinue its agriculture credit program is understandable, given limited resource availability and the presence of microfinance institutions, especially ACODEC and FODEM. This softens the change for participating producers. ADRA is encouraged to work with both the participants and the microfinance institutions to ensure that credit for productive purposes remains readily available.

4. Save the Children USA

As in the case of other Cooperating Sponsors, Save the Children's program involves some productivity-enhancing investments. While SCF has assumed more of the expenditures for these investments than the other CSes and required less input from beneficiaries, there has been a need for beneficiaries to find outside financing in order to expand their income generation activities, especially after the initiating of the commercial horticulture component in 2005. SCF has assisted its beneficiaries to access loans and grants from external sources. The SCF program has no credit component *per se*, but in certain cases involving purchases not covered under SCF's plan (such as motor pumps), the agency has made loans in kind to be repaid in cash.

First, while SCF provides drip irrigation, seedlings, fence wire, and other agricultural equipment and inputs at an 80% or 100% subsidy in most cases, it does not provide any subsidy for the purchase price of pumps. It has, however, bought pumps on behalf of producers and allowed them to repay the purchase price, with no interest, over three growing cycles. These in-kind, no-interest loans are a real form of credit, and the 0% interest is a form of subsidy, given that in the mainstream credit market a producer who borrows $350 to buy a pump and pays it back over one year at 24% interest would pay over $50 in interest.

Save the Children actively assists its beneficiaries to access credit from outside sources such as Financiamento Nicaragüense para el Desarollo S.A. (FINDESA), the Centro para la Promoción del Desarollo Local (CEPRODEL), and others. Nearly 400 small producers, a quarter of them women, qualified for loans totaling $142,315 in FY2007 to support production of basic grains and non-traditional crops. SCF helps in the preparation of business plans and in the application procedures for loans. (It provides similar application support for grants such as those awarded by Fundación para el Desarollo Tecnológico Agropecuario y Forestal de Nicaragua or FUNICA.) Participating in income-generating activities is an additional asset for beneficiaries who solicit loans.

The Centro de Agronegocios in Somotillo, set up by Save the Children with logistical support from the local government, is linked with a credit program housed within the same government offices, called Fondos de Desarollo de la Production Agrícola (FODEPRAG). This fund was established by annual contributions from the government of Spain of €40,000 from 2005 to 2007. Producers who come to the Centro de Agronegocios can obtain services offered by staffers paid by Save the Children, such as technical training for production and business plan preparation. They can also be referred across the hall to this credit office to apply for loans that average $100. The agricultural loans are disbursed in kind in the form of production inputs, and repaid in cash by producers after harvest. In addition, loans for commercial activities related to agriculture, such as women who prepare and sell food, are available on a scale of $50. Repayment rates were 95% the first year and 92% in 2006; figures for 2007 are not finalized yet, but with the losses caused by the heavy rains, FODEPRAG is anticipating repayment rates of between 80% and 85%. At these repayment rates the fund will slowly shrink, so the Alcaldía is looking for other outside funding to replace the Spanish money.

Recommendations

Training beneficiaries to prepare business plans and credit applications is an important step toward making their operations self-sufficient. Beneficiaries interviewed in the field had only a faint grasp of what is in their plans and proposals, and do not appear able to repeat the process later when the project is no longer there. In the interest of sustainable improvements in livelihoods, the project should make every effort to train beneficiaries for independent credit access. If they lack the educational levels necessary, local consultants can be used – or trained – to help groups prepare their documents. As long as the groups pay for the service with their own funds, this can be a sustainable system.

D. Food For Work

Rural feeder road near Totogalpa

FFW tree nursery in Yalagüina

Food For Work (FFW) resources have been used to help conserve soil and water resources and to repair or construct rural tertiary roads in the Departments of Chinandega, Madriz, Nueva Segovia, Matagalpa, Jinotega, and Esteli. FFW has also served as a source of temporary work for thousands of people who otherwise might have been unemployed. Although not calculated by all CSes, one could calculate the number of temporary jobs generated as well. (Each ration is equal to 15 days of work, with 220 days of work being equal to an annual job.) Numerous activities are carried out under FFW, the great bulk connected with road repair and water/soil conservation. Difficulties in program implementation occurred when FFW allocations were cut for Nicaragua several years running. Planned activities had to be reduced in scope and some activities were reportedly dropped altogether. Some people worked for rations that were provided late and in some instances worked without receiving the rations normally allocated for their level of effort.

Nevertheless, FFW provides a greatly appreciated food source for families, largely during the dry season (February – May) when work is scarce in the north of Nicaragua. Roads were built (usually in partnership with the local Mayor's Office) or repaired, water and soil conservation infrastructures were built, reforestation has been carried out on private and public lands and along roadsides. The CSes reported that 97,732 people participated in the FFW programs. It is not possible to consolidate results of the FFW activities, as each CS uses its own definition of tasks and tremendous variations appear in the statistics. (For example, ADRA, PCI, and SCF showed 168 kilometers of roads constructed and repaired. CRS showed 1,802 kilometers of road repairs and construction, using a loose definition of road repair and including sections of roads repaired several times.)

1. Catholic Relief Services

CRS has mounted extensive FFW efforts in the Departments of Esteli, Matagalpa, and Jinotega. The work rations have been used to support the food needs of 11,000 people over the last six years (4,986 male, 6,014 female). Projects have included road repair, maintenance and construction, community works, water and soil conservation, and reforestation.

Progress in just numbers doesn't really capture the value of many of the works performed. A road repair may lead to huge gains in income, as products can thereafter reach new markets and thus be sold for significantly more than previously. The quality of goods would also improve, as produce reaches the market fresher, less damaged, and with less loss. Reforestation and conservation efforts generally improve land quality and thus its productivity. Water projects carried out through FFW can and do contribute to improved health, as they often improve the quality of water used in numerous ways by the family, serve productive purposes and thus contribute to income growth and reduced malnutrition.

CRS reports that water and soil preservation activities (terraces, erosion barriers, dikes, canals, waterway cleaning) helped to protect 19,076 manzanas (32,906 acres), along with communal labor projects requiring 1,109 person days to complete. Road repairs showed a total of 1,796 kilometers, but this includes roads repaired several times and does not differentiate levels of effort. Road constructed, widened or opened totaled 71 kilometers. Nearly 573,000 trees were planted and 30 nurseries established. Now CRS has switched from reforestation to regeneration of natural vegetation and over 1,200 manzanas have been regenerated.

Recommendations

With only limited resources left, and with just one dry season remaining, we recommend that CRS concentrate FFW efforts in those geographic areas where poverty is most prevalent. The works performed are all worthwhile and none is 'better' than the others. Therefore, it is suggested that works be chosen that are perceived (by the target communities and population) as the highest priority in their area.

2. Project Concern International

The Department of Jinotega has suffered from war and subsequent lack of attention for basic infrastructure. It has been hit hard by hurricanes and severe rainfall. It has been neglected for its isolation and low population. This can be seen almost immediately when the rural, unpaved roads are traveled upon.

The Food For Work program being managed by PCI has been directed at attacking this infrastructure difficulty. Recognizing that roads for vehicular access are fundamental for commercial agriculture operations, PCI and local communities, along with the Mayor's Office in most cases, teamed up to construct or rehabilitate 93 kilometers of roads through FY 2006. The program was terminated in FY 2007 due to a reduction of funds from USAID. The number of families having improved access to markets through improved roads totaled 1,580 by FY 2006.

Both these met the targets set for that period. Also in partnership with the Odorico Foundation, the MINSA Institute of Agricultural Technology, and SERVITECA (an environmental NGO), soil and water conservation activities have been carried out, protecting about 2,300 manzanas through wind and erosion barriers, reservoirs, dikes, terracing, tree nurseries and reforestation.

Recommendations

As stated earlier, there are only limited resources left and with just one dry season remaining. Therefore, we also recommend that PCI concentrate FFW efforts in those geographic areas where poverty is most prevalent. It is suggested that works be chosen that are perceived (by the target communities and population) as the highest priority in their area.

3. Adventist Development and Relief Agency

The Food For Work component of ADRA's DAP program supports the DAP goals of increased productivity and commercialization of selected crops and of improved nutritional status of children under five years old in selected communities. Activities are carried out by volunteers who receive dry food rations in exchange for labor on road maintenance, soil conservation, reforestation, cleaning of garbage, improvements in productive infrastructure, and water resource maintenance.

Three thousand seventy-one (3,071) participants benefited from Food For Work in FY2007, of which 63% were women. This represents an achievement of 31% of the target number of beneficiaries, due in part to late receipt of rations and transportation disruptions caused by severe weather conditions. Of the rations supplied, 70% were used to support natural resource management (reforestation and contour bunds), 13% to support rural road rehabilitation, and 17% to support water and sanitation.

One of the most prominent activities financed by FFW under the ADRA program is road rehabilitation. One hundred ten of rural roads have been rehabilitated under the program. The roads are chosen as a function of their importance to the horticulture and income generation activities, i.e. those that link producers to the main road. Besides a relatively smooth earthen road surface, rehabilitated roads have concrete chutes for streams to cross (on the same level, not below), gutters in certain places, and erosion-resistant shoring along high edges. Vetiver grass has been planted on surrounding steep slopes. In addition to the resources contributed by ADRA for labor, local government public works departments have been contributing heavy machinery for roadwork, and have pledged to maintain the roads once they are rehabilitated.

Soil maintenance activities consisted of construction of contour bunds and live fences on mostly private parcels, and were often combined with reforestation. ADRA partners have planted more than 6.2 million tree seedlings during the course of the project. FFW rations are of course used to pay for initial planting, but in contrast to other programs, rations are also given for monthly seedling care for two years after planting. Since young trees are tended, survival rates can be tracked, and in fact monitoring of survival rates by ADRA shows a 67% survival rate after one year. At ADRA's showcase reforestation example, in Comunidad Plan in Yalagüina, survival

rates appear to be closer to 100% even three years after planting; in fact the 4 m-tall saplings are so close together that they appear to require thinning, which ADRA technicians say is planned.

Lands selected for reforestation include those damaged by or vulnerable to erosion, such as hillsides, watersheds above wells and springs, and roadsides. Ideal reforestation is done on land protected by fencing and kept free of grazing animals; naturally it is also impossible to grow short-cycle crops with tightly-spaced tree saplings. Reforestation therefore can take land out of production, and landowners are not supposed to cut the trees for wood, other than collecting deadwood for fuel. Given the current restrictions on tree cutting, it is not clear how long the trees will have to be left untouched. When asked what, then, is the benefit to landowners, it is difficult to get a clear answer. Whatever the motivation may be, the nursery manager in Yalagüina insists that demand is greater than the 57,000 trees she produced this year. Since her nursery supplied several fruit species (noni, citrus, cashew) in addition to wood species, it makes sense that landowners large and small would ask for these.

Recommendations

Seedlings distributed for free incur no investment on the part of the landowner, who then has nothing to lose if the trees die. A farmer who pays for seedlings will generally protect his or her investment by insuring that the trees survive. In the interests of reforestation and of rural income generation, it is therefore recommended that tree nurseries be treated as rural enterprises and supported with technical and management training, as well as promotion of tree crops among farmers, rather than being undermined by free seedling distribution.

Also regarding tree nurseries, grafted fruit trees produce fruit that is much more valuable than wild varieties, and production begins earlier (three years vs. six years). It is also reasonably easy to learn and teach grafting. It is advisable to begin grafting as soon as fruit tree nurseries are established, in order to enhance the income generation potential of tree owners. This in turn would provide an incentive to plant more trees and insure that they survive.

The feeder roads rehabilitated by ADRA are noticeably smoother than others, which are often like boulder-strewn stream beds. Even three years after the work was done, roads are easy to drive on. It is of course one of the great 'promises' in development that local governments will take on work begun by projects, which in this case means road maintenance. The fact that local governments have already contributed the use of heavy machinery is a favorable sign, however. As commercial vegetable growers assume an ever greater importance in the local economy, it is not difficult to imagine that they will advocate successfully for the maintenance of the roads on which they depend for their market access.

4. Save the Children USA

The Food For Work component of SCF supports SO1, Increased Food Availability, and SO2, Improved Maternal and Child Health and Nutrition, through the distribution of dry food rations in exchange for labor on road maintenance, soil conservation, reforestation, cleaning of garbage, improvements in productive infrastructure, and water resource maintenance.

FFW rations were provided to 2,733 families, or 16,398 people assuming six individuals per household. The majority of the rations (65%) were used for maintenance work on 43 km of roads, while 23% went toward nurseries and reforestation with over 250,000 tree seedlings, 8% supported water resource maintenance, and the remaining 4% was divided among the other activities.

Soil maintenance activities consisted of construction of contour bunds and live fences on 40 manzanas of mostly private parcels. Community groups receiving rations would work jointly on one member's parcel one day, then another on a subsequent day, etc. People learned to use the A-level (a simple tool in which a plumb line hung from the apex of an A-shaped frame shows when the two feet are aligned horizontally).

The DAP amendment submitted by Save the Children in February 2004 specifies a target of 24,000 beneficiaries of FFW distributions for FY2007. The actual distributions therefore reached 68% of the target. Save the Children's 2007 annual report notes that PL480 food stocks were below anticipated levels because of some Call Forwards that arrived late. Of the stocks available, some were diverted to the Atlantic coast because of damage caused by Hurricane Felix in September 2007.

As mentioned elsewhere in this report, there is no information about the fate of the quarter-million tree seedlings planted during reforestation activities, since survival rates are not tracked. It is therefore not known if any of those seedlings is still alive a year later. In a dry climate like Chinandega Department, untended tree seedlings often succumb to dehydration within their first year. Cattle raising is one of the main economic activities in the area, which means that there is a high risk of seedlings being grazed and destroyed by livestock before they can reach a height where they are safe. If rainfall is abundant and there is no post-transplanting care (i.e. if FFW rations cover only transplanting and not subsequent work), then fast-growing weeds kill many tree seedlings by overshading them.

Throughout the world tree crops are increasingly recognized as economically valuable and desirable, meaning that there is a market for tree seedlings. Depending on circumstances the species in demand among farmers can be wood trees, nut and spice trees, fruit trees, windbreak and hedgerow species, and occasionally fodder and soil conservation species. Many economically important wood, hedgerow, fruit, and nut species also have soil conservation and fodder value. Wherever there is a demand for seedlings, there exists an income-generation opportunity for a rural entrepreneur. With some training in nursery management and grafting, a farmer can run a profitable nursery business during the dry season when he or she usually has limited agricultural work to do. Not only does this create wealth for the nursery operator, it supplies neighboring farmers with raw materials for their income-generation activities, and it demonstrates that tree seedlings have economic value. By contrast, where nurseries are operated because a project pays the operators with food rations, and where the seedlings are given away for free, it is implied that the seedlings have no economic value and there is thus no income generation opportunity for village nursery operators. Seedlings distributed for free incur no investment on the part of the landowner, who then have nothing to lose if the trees die. A farmer who pays for seedlings will generally protect his or her investment by insuring that the trees

survive. In the interests of reforestation and of rural income generation, it is therefore recommended that tree nurseries be treated as rural enterprises and supported with technical and management training, as well as promotion of tree crops among farmers, rather than being undermined by the interference of FFW or free seedling distribution.

Also regarding tree nurseries, SCF has been operating them in some communities for two years or more and has not begun training people in grafting. Grafted fruit trees produce fruit that is much more valuable than ungrafted varieties, and production begins earlier (in two to four years instead of four to six years). It is also reasonably easy to learn and teach. In some cases Save the Children field staff do not themselves know how to graft fruit tree seedlings. It would be advisable to begin grafting as soon as fruit tree nurseries are established, in order to enhance the income generation potential of tree owners. This in turn would provide an incentive to plant more trees and insure that they survive.

E. Water and Sanitation

Water management system in Yupalí

Water meter in Yupalí

1. Project Concern International

A high incidence of preventable disease and malnutrition is evident in PCI target communities. Health related behavior change, nutritional improvement, and caloric increase interventions by themselves are inadequate to reduce disease and improve overall health without accompanying infrastructure improvements of potable water and sanitation. In turn, infrastructure improvements are unable to contribute meaningfully to improved health without the dissemination of knowledge about how such infrastructure is correctly used, application of this knowledge, the creation of local social structures for their maintenance and management, and the better awareness of the contribution to health of a clean environment within the home and community.

A goal of PCI's work is to contribute to the improved health of residents in selected rural communities through provision of improved potable water supply and basic sanitation facilities, along with focused training to ensure the proper management and use of them.

There are five specific activities under PCI's water supply and sanitation (WSS) effort: 1) formation of community water boards; 2) potable water system construction; 3) latrine construction; 4) WSS-related health education; and 5) addressing environmental issues. To date PCI has facilitated the construction or rehabilitation of 27 small potable water systems in collaboration with rural communities within the Department of Jinotega, serving about 10,500 beneficiaries from 30 communities. It has supported home latrine construction activities for 1,194 families (6,500 beneficiaries), generally in the same communities where the water systems have been built or rehabilitated. In some cases latrine construction activities have been provided through other organizations working in the same communities – resulting in differences between potable water and sanitation beneficiary numbers. In each of the selected communities, water board training, health education, and environmental education were carried out.

Of the 27 water projects, 21 are gravity flow aqueducts from mountain sources, five are hand dug

community wells, and there is one additional aqueduct driven by an electric pump from a well source. The water systems range in size from as few as 20 beneficiary families to a maximum of 186 families and with a line length approaching 25 kilometers. The service level for all the aqueducts is family yard taps, with the systems generally being pressurized 24 hours per day. The community wells are fitted with "mecate" pumps (low-cost, easy-maintenance solution common in Nicaragua using rope and washer pumps). PCI has used a community-focused participatory methodology for implementation of each of the potable water projects. Community water board training consists of multiple sessions in the community or at a training center, covering all basic practical aspects managing such an organization.

The latrines are of a VIP design, for single family use, a standardized model widely used in Nicaragua. Community wide, multi-session training is given at the time of construction of the latrine projects, on topics related to the construction of the latrines, their care and maintenance, health and hygiene, and home environmental issues.

PCI conducts all its projects in coordination with municipal authorities and MINSA, including cost sharing and personnel time, in addition to formal agreements for project implementation.

In its annual report for FY07, PCI indicates attainment of FY07 and LOA targets for most WSS activities, including numbers of water systems constructed and operating, water boards formed and functioning, number of latrine constructions, number of homes with adequate excreta disposal, and families that know at least two hygiene practices. The report acknowledges that PCI is short of targets in the following areas: community volunteers trained in personal hygiene, families trained in proper latrine use, and families that apply at least two personal hygiene practices. Reviewing previous years' trajectory of progress and the LOA targets, the minor shortfalls appear achievable before DAP completion.

The PCI staff responsible for implementation of WSS activities demonstrated wide knowledge in the area of small-scale water systems and rural sanitation. Activities being carried out in the communities visited all appeared to comply with technical norms or accepted practices for Nicaragua and the Central American region. PCI staff are fully capable of implementing WSS projects with a community centered, multiple contributor, sustainability oriented, participatory methodology. Evaluator visits to randomly-selected beneficiaries homes' revealed evidence of ample field presence of PCI staff over time, and the delivery of appropriate information regarding the formation of community water and sanitation organizations, along with health messages related to water and sanitation. At interviews conducted with key members of community water boards, board members demonstrated a solid understanding of management issues within a small water system, and each provided examples or evidence of different, individually tailored strategies for operational success and for overcoming problems. Noteworthy specific examples found in one or more of the systems were: 1) employment of a paid part-time person for both plumbing repairs and monthly fee collection; 2) separation of treasurer and fee collection functions; 3) use of water meters for equitable water delivery and cost apportionment, including base rate and block pricing provisions; 4) use of double receipts for user fee payments, providing documentation for both payer and payee in each transaction; 5) use of customized receipts with the community water organization name and logo imprinted; 6) widespread awareness among community populations of user regulations and of most important

clauses; 7) successful community level suspension of water service in a case of an infringement on user regulations; 8) community-facilitated legal protection of the water source and easements for passage of pipeline; 9) functional multi-community water system management; 10) inflation protected fee structure through dollar denominated user fees; 11) evidence of a "business enterprise with a social benefit mandate" style of thinking among the board members; 12) absence of a disempowered, charity, or "help-us" attitude among board members consulted; and 13) consistent 24 hour pressurization of the water systems.

Taken individually, these water systems are operating effectively and would rank well against others in the Central American region. Taken together, the combining of the best elements from each of the three systems constitutes a true 'best practice' community potable water system, indicating that truly exceptional results are within PCI's organizational and technical capacity.

Extensive documentation was compiled for each WSS project, including preliminary and in-depth investigations, community information, system design, engineering documents, legal documents, capacity building summaries, correspondence, budgets, and agreements between stakeholders including PCI, municipal government, Ministry of Health, and the community.

An interview with a municipal official provided evidence of meaningful, financial commitment to collaboration in implementing PCI projects and an appropriate understanding of the community participatory approach without charitable, paternal, or political overtones. This is unlikely to have been possible without substantial exposure to a competent non-government organization over a prolonged time.

Latrines constructed with PCI support were similar to others in Nicaragua in terms of design and materials. The quality of work, carried out generally by beneficiary families, was uneven but satisfactory.

Though the projects met or exceeded expectations in most regards, two weak areas were noted: 1) inadequate absorption of health related messages (health related behavior change); and 2) few or no measures for handling runoff water at the yard tap stands in the water system construction projects (environmental impacts). There is opportunity for significant improvement on these two fronts.

Recommendations

Given the strong performance of PCI, the following recommendations are in response primarily to forward facing objectives and seek to extract added value from the evaluation rather than just supply criticism or praise of completed activities. They are presented in summary form here; the complete list and useful future focused implementation details have been provided directly to PCI.

PCI works in areas with fast growing rural populations. An increasingly important priority will be to improve the medium-term future sanitation coverage within project communities. This is necessary for the sanitation coverage to not fall below the health benefit threshold of 80% latrine presence and usage for at least some acceptable time horizon after project completion. PCI can

plan for future population growth in its sanitation efforts in much the same way as it already does with all its water projects.

Carefully expanding the water metering work in aqueduct systems, with additional inputs from notable failures and successes with metering technology applied in a rural setting, would be a very promising area for future work for PCI. This should be supported by efforts to increase staff exposure to a range of WSS best practices in the Central American region.

Another area of concern is the continuing presence of poor hygienic practices and behaviors relating to water and sanitation in some assisted communities. This is not for lack of focused effort carried out by PCI's conscientious professionals – the weakness resides in the methodology, which appears to be more informational and one-directional rather than transformational and bi-directional. PCI would benefit tremendously from the application of advanced behavior change methodology (going beyond 'casa agua saludable', or 'home of good water') to sanitation, water use, and hygiene practices in the family home environment.

PCI-supported CAPS, while having overcome many of the initial difficulties of running a water system, will now face a new set of challenges. It would be worthwhile, and ultimately reduce costs, to devote attention to building additional strength in CAPS structures. Specific areas to pursue would be: formation of an umbrella CAPS association representing all the communities in which PCI has worked; advanced community water board training; and addressing counterintuitive gender issues within CAPS that are resulting in perpetuation of traditional gender roles.

One other issue for consideration is that of water loss and drainage control within the family patio setting where tap stands are placed in aqueduct projects. It would be worthwhile for PCI to give closer attention to the combined water waste, drainage control, and environmental impact issue occurring at family tap stands from the program goal and project design levels, rather than letting this be primarily the domain of the families to figure out on their own.

2. Adventist Development and Relief Agency

A high incidence of preventable disease, malnutrition, and poverty is documented in ADRA target communities. Health related behavior change, nutrition improvement, and caloric increase interventions by themselves are inadequate to reduce disease and improve overall health without accompanying infrastructure improvements of potable water and family level appropriate sanitation. In turn, infrastructure improvements are unable to contribute meaningfully to improved health without the dissemination of knowledge about how such infrastructure is correctly used, the creation of local social structures for their maintenance and management, and the better awareness of the contribution to health of a clean environment within the family living sphere.

A goal of ADRA's work is to contribute to the health of residents in rural communities within their radius of operation through provision of improved potable water supply and basic sanitation, along with focused training to ensure the proper management and use of the same.

According to initial project documentation submitted in 2001, ADRA proposed to work on the following key water and sanitation services (WSS) activities: 1) latrine construction; 2) home grey water filter construction; 3) community potable water system construction consisting of wells and pumps or mini-aqueducts; and 4) training in management and maintenance of water systems. These activities were linked to additional training to improve basic sanitary practices such as hand washing, addressed outside the WSS section.

To date, ADRA has supported the construction of 78 small potable water systems in collaboration with 65 rural communities in the Nueva Segovia and Madriz Departments. These consist of 60 hand-dug wells fitted with a “mecate” (rope and washer) pump, 13 machine-drilled wells with a “mecate” pump, and five mini-aqueducts with yard tap service level. These projects have reached approximately 6,800 beneficiaries. It should be noted that these are generally small systems serving neighborhood groupings, including the aqueducts, in which the median system serves less than 200 families. ADRA has also completed latrine projects for 1,000 families in 20 communities. The latrine ADRA activities are not tightly linked to the potable water projects, since some communities already had latrines or potable water, or another NGO covered or is covering part or all of one or the other improvement. In each of the selected communities, water board, health education, and some element of environmental education was carried out. All projects had a community clean up requirement as a precondition of project acceptance.

ADRA has used a community-focused participatory methodology for implementation of each of the potable water projects. Community water board training consists of multiple sessions covering all basic practical aspects managing a community water system.

The latrines are of a VIP design, for single family use, a standardized model widely used in Nicaragua. Community wide, multi-session training is given at the time of construction of the latrine projects, on topics related to the construction of the latrines, their care and maintenance, health and hygiene, and home environmental issues.

The grey water filter component of the project was not implemented, being judged a lower priority than other interventions. The evaluator concurs with this assessment, particularly as it applies to communities in drier areas. However, a related problem of inadequate drainage for grey water and leaking spigots in a potable water system with a yard tap service level was observed, and this may be a weak point in intervention planning and implementation.

ADRA conducts its projects in coordination with municipal authorities and the Ministry of Health, including seeking cost share from the former and personnel time inputs from the latter, in addition to no-objection letters from both for project implementation. ADRA project documentation demonstrates acceptable correspondence, disclosure, and understanding with appropriate authorities, as well as interaction with other NGOs and agencies carrying out related activities.

The principle ADRA staff responsible for implementation of WSS activities all demonstrated solid knowledge in the area of small-scale water systems and rural sanitation. Activities carried out in the communities visited complied with technical norms or accepted practices for Nicaragua and the Central American region. Field personnel had a well-worn copy of the community WSS training manual used in Central America and showed familiarity with it contents. ADRA staff appeared competent to implement WSS projects with a community-centered, multiple contributor, sustainability oriented, participatory methodology.

Evaluator visits to randomly selected beneficiaries homes' revealed evidence of a field presence of ADRA and the delivery of appropriate information regarding the formation of a community water and sanitation organization, along with health messages related to water and sanitation. In an interview conducted with key members of a community water board (of a mini-aqueduct), they demonstrated a solid understanding of management issues of a small water system. They also presented material evidence of operational capacity and ability to address problems: documented meeting minutes, bank book, receipts for purchases, customized receipt book with its own CAPS (Potable Water and Sanitation Committee) logo for fee payments, legal documents, and a successful defense of legal status challenge.

In visits to four communities where ADRA had implemented community well and pump projects, the Evaluation Team saw varying degrees of community involvement and management capacity, something normal in work with rural communities, but it was clear that it in the best cases good operational structures had been carefully nurtured. In two cases CAPS were organized in a manner similar to that used for small aqueducts, and included the charging of a monthly fee for repairs and maintenance. The other two use a 'when needed' strategy, collecting a fee only when a pump repair made it necessary. For community wells, either of these approaches is acceptable, as long as there is community-wide understanding and agreement on the responsibilities and commitments of the community members.

Documentation was compiled by ADRA for each WSS project, including investigations, community information, some elements of the system design, legal documents, capacity-building training attendees, correspondence, and agreements between stakeholders including ADRA, municipal government, Ministry of Health, and the community.

Latrines constructed with ADRA support appeared similar to others in Nicaragua in terms of design and materials. The quality of work, generally carried out by beneficiary families, was uneven, a normal and tolerable situation in most community projects attempting to make the transition from no formal family waste solution to universal latrine coverage in one step.

Though the projects met or exceeded expectations in most regards, three weak areas were identified: 1) inadequate threshold coverage of latrines in target communities; 2) incomplete absorption of health related messages (health related behavior change); and 3) missing measures for handling runoff water at the yard tap stands in the water system construction projects. It should be stressed that while there is opportunity for significant improvement on these fronts and summary recommendations are supplemented by a detailed addendum supplied separately, the level of achievement found is similar to that of many other small water projects in the Central American region.

Recommendations

It is clear that ADRA is firmly committed and on track in delivering professional, conscientious, high value work. The following recommendations are in response partially to the weak points mentioned earlier, and partially to the forward facing objectives and seek to extract added value from the evaluation rather than just supply criticism or praise of completed activities. They are presented in summary form here; the complete list and useful implementation details have been provided directly to ADRA.

An increasingly important priority in the WSS sector will be to improve both the immediate and the medium-term future sanitation coverage within project communities. This is necessary for the sanitation coverage to achieve, and to not later fall below, the health benefit threshold of 80% for at least some acceptable time horizon after project completion. While this coverage can be achieve through cooperation with other entities, the important thing is that it be considered from a comprehensive angle by at least one, and preferably all, of these entities. ADRA can and should plan for future population growth in its sanitation efforts in much the same way as it already does with its aqueduct projects.

A weak area for ADRA (and the sector as a whole) is in achieving the desired changes in health related behavior as it concerns water and sanitation. This is not for lack of focused effort carried out by conscientious professionals – the weakness resides most likely in the methodology. ADRA would benefit tremendously from the application of advanced behavior change methodology to sanitation, water use, and hygiene practices in the family home environment.

Another issue for ADRA to work on is that of water loss and drainage control within the family patio setting where tap stands are placed in aqueduct projects. It is in ADRA's interest to address the combined water waste, drainage control, environmental impact issue occurring at family tap stands from the program goal and project design levels, rather than letting this be primarily the domain of the families to figure out on their own.

ADRA could benefit from the formation of an umbrella CAPS association among communities

in which ADRA has provided water, including the community pump CAPS, to improve CAPS independence and reduce ADRA aftercare burden. This should be carried out in collaboration with other entities that are doing or have done water projects in the region, since the number of ADRA sponsored water systems alone is not enough to achieve organizational critical mass.

ADRA has good examples of functioning community water pumps. At least some of them have been spontaneously and serendipitously enhanced through an itinerant pump repair entrepreneur model for community pumps. This is not unusual, and often provides a healthy alternative to the community labor maintenance model espoused in community pump training manuals. Investigation into how to best support the entrepreneur model, and incorporating that knowledge into current and future work, can potentially relieve a training burden from ADRA while simultaneously providing better sustainability for its projects.

F. Functional Literacy For Adults

1. Project Concern International

Volunteer facilitators teaching to read and write in Pantasma, Jinotega.

During the "National Crusade of Literacy" carried out in the 1980s, literacy in the northern Departments had been improved dramatically, up to 78.5% of the population according to the Ministry of Education (MOE). The DHS 2007 indicated that literacy has since declined to 50% in the north. The major reason given for the decline was the lack of program continuation and sustainability to this program. The population has grown by 13,400 in ten years, to 66,919 and the number of illiterates has grown exponentially. Other reasons include: lack of education facilities and the distances between them, poor roads and isolation, household demands for labor and income, migration (up-rooting of families) and natural disasters in the Department.

Noting the low literacy level, PCI also saw a linkage between literacy and improved participation in organizations and their management, with increased women participation in social and economic activities, and with providing the target population one more tool to better carry out business and health activities. Therefore, PCI decided to include adult literacy as a component of their DAP in three municipalities in Jinotega, as part of the objective "Improve the Food Security for Rural Families". To meet this objective, PCI, in coordination with the MOE and community leaders, followed the 'Literacy for Life' Instituto Nicaraguense des Investigacion y Educacion Popular (INIEP) method. PCI formed 77 groups or study circles of ten to twenty participants within 41 communities. Within these groups, the target was to have 43% complete the one-year program, with a graduate/pass rate of 90%.

Using the INIEP method, of Literacy for Life approach includes reading, writing and arithmetic for participants and training for the facilitators (using fourth-sixth grade graduates), plus guidance provided by paid promoters. During the implementation of the literacy process, several instruments were adapted following changes in the program made by the MOE. The selection criteria for choosing the communities were in accordance with the MOE, PCI and the community's representatives.

The facilitators were selected with technical criteria's established by the MOE. The community leaders of the community propose the candidates and the literacy participants can approve or reject the proposal. If any is rejected, new candidates can be proposed and accepted if they meet the selection criteria. PCI provided funds to finance promoters, school supplies for participants, facilitators, and promoters, incentives (food and transport) for the facilitators, plus training and a stipend for the promoters.

At present, the program continues in one municipality, with 114 participants, 12 facilitators, and three promoters. PCI is planning on the transfer of the literacy component to the MOE, providing orientation and education materials, if necessary.

To date, PCI has formed 77 groups, with an inscription of 1,110 literacy adults in 41 communities. PCI reports that 471 persons were promoted or graduated, meeting the target of 450 literacy adults, for the Life of Project (LOP). Overall, 585 people completed the program, equivalent to a 53% completion rate, of which 339 were female (58%) and 246 male (42%). 114 adults from the 585 who completed the program did not graduate. They continue working within the Literacy for Adults program, supervised by the MOE. With their completion, PCI will have met all targets.

The PCI-supported "Literacy for Life" has helped a relatively small number of people gain a degree of literacy, affecting the quality of their lives, their families and their communities. Some possible benefits are: to continue learning and improving new production techniques with their crops and later expand this lesson (soil conservation, drip and gravity irrigation, live barriers, curtains, post harvest practices and weed control); read and follow instructions and labels; read news and legal documents (promissory notes, security bonds, etc… where before they would sign without knowing the contents of the documents); gain skills needed for participation and leadership in organizations; personal improvement of the facilitators, in the use of the language, secure speaking, and to defend or question ideas; young adults (15 teen-agers) motivated to continue preparing themselves in formal or other methods of alternative education.

Recommendation

PCI has relinquished responsibility to the MOE. It is, at present, a rather remote possibility that the program will continue without outside sponsorship. Coverage on the adult population of illiterates (roughly 53,000 in the municipality) is about 3% and really has a minimal impact on the total population – except on direct beneficiaries and their families. Literacy students should continue seeking alternative education opportunities with the MOE. Such programs are important for integrated development of rural families and require a substantial financial investment (from the MOE and donors) to achieve a significant impact on the nation.

G. Cross-Cutting Themes

1. Behavioral Change

There was ample evidence of attention to behavior change during review of projects for all the CSes and in each of the sectors. Staff from the CSes appeared to realize that behavior change among the participants is often an essential requirement in ensuring sustainability and in really making an impact. No amount of training and technical assistance, unless accompanied by the right behavior from beneficiaries over an extended period, will achieve lasting results.

During field visits we saw that the community mothers participating in the child health focus groups were breastfeeding their babies, even those children older than six months. According to SCF data, 58% of mothers practice exclusive breastfeeding in the programs communities compared to 37% at the baseline. CRS reported 80% ADRA 91% and PCI 50% prevalence in FY 2007, with baselines of 54%, 70%, and 56% respectively. In terms of primary health care this is one of the most important behavior impact indicators for preventing malnutrition and it shows the success of the educational messages adopted by the mothers participating in the Community Children's House (CRN) meetings. Incidentally, SCF reported that 100% of exclusively breastfed children under the age of six months had satisfactory growth and weight (CRS and PCI don't measure this for children under six months old). SCF´s childhood stimulation strategy has had a real and sustainable impact in 96% of children attending CRN whom showed normal development, evidence that the new nutritional practice is making a major impact.

ADRA reports a dramatic reduction in the prevalence of chronically malnourished children under two years old, from 49.3% at the baseline to 11.6% in FY 2007. Wasting children reportedly constituted 53.5% at the baseline, improving to 16.4% by FY 2007. This nutritional impact in children is also closely related to the fact that now 88% of the mothers have adopted exclusive breastfeeding for babies under six months old as a new nutritional practice. Once these mothers have seen the importance of breastfeeding their children, especially in terms of satisfactory growth, there is less need for providing food incentives through the program to encourage continuation of this practice.

In agriculture, the available evidence shows adoption of several new practices promoted under the project. Prime examples are the switches to horticulture commercial production, a highly demanding and labor intensive sector, which requires irrigation, constant attention, and marketing savvy. (In basic grains, however, even satisfied hybrid seed users have not universally acquired the behavior of buying the hybrid seed each season, as it differs from the traditional behavior of saving seed from the previous crop.)

However, many hoped-for behavior changes have not become permanent. Activities done under FFW will probably not be continued for the most part. Brigadistas don't all have/use latrines. Learned hygiene approaches are still not prevalent in some areas (such as hand washing, cleaning latrines and water points), a fact recognized by the CSes. We all recognize that ingrained, sometimes cultural habits are hard to change and take a long time to do so, regardless of their apparent benefits.

2. Sustainability

The durability of project activities has been discussed throughout this document as it relates to individual strategies and implementers. This project contains a mix of profitable, private sector economic strategies, services normally delivered by government departments, community-level actions designed for social benefit, and outright donations of resources. Each of these has a different strategy for perpetuation, where applicable, and a different degree of likelihood that that will occur.

The project-initiated actions most likely to continue indefinitely without project resources are those that supply their own resources, i.e. those relating to income generation. They are characterized by constant interactions with markets, training in and use of universal business principles such as demand-driven production and investment, and a mastery of the necessary technical skills. Participants are linked with existing financial systems including banking and credit. Once the project has provided the necessary skills and access to the requisite materials, these producers or enterprises have what they need to continue, expand, and involve others. Success also demands that the entire value chain be developed in coordination, so that producers, their input suppliers, and their clients all develop in synchrony

These principles are not always applied evenly, however. They require some time, usually three years or so, or more when multiple links of the value chain are being addressed. Sustainable income generation also requires that implementing organizations transfer mainly skills, suppressing the impulse to transfer materials, and allowing beneficiaries to grow using their own resources, however limited, using credit to leverage future earnings for present investments.

As an example, ADRA began early in this project developing the irrigated vegetable value chain, which stretches from seed supply and seedling production through field production to institutional markets. The growers acquired most of their inputs on credit, and formed marketing enterprises to commercialize their products and facilitate their access to inputs. After four years of business, production, and marketing skills transfer, these producer enterprises are almost completely self-sufficient, and show every sign of continuing and even expanding in the future, without project resources.

PCI and SCF began their commercial agriculture components later, and their producer organizations have thus had less time to develop and acquire the necessary skills for sustainability. The most advanced of the SCF producer organizations show the possibility of continuing independently after project end. Those in the PCI program, however, are still heavily reliant on the project for their operations and will probably not succeed unless a great deal of progress is made during 2008.

Small livestock has proven to be a low-cost way of involving even the poorest families in sustainable and replicable income generation. Families keeping chickens harvest eggs and meat while their bird populations grow. Goats and pigs reproduce and are shared among the families within communities in Chinandega so that from a few initial donations, many families benefit. These animals provide meat and cash, and the goats also yield milk which is used directly in

child nutrition.

Continuing with agriculture, every CS has incorporated family gardens and basic grains into its program, training families to increase their traditional crop production and grow small amounts of fruits and vegetables at home. The families having thus acquire these skills have what they need to continue practicing them; in that sense they are sustainable. Replicability is less evident, however, since many of these families received donations of seeds, fencing wire, drip irrigation systems, and other inputs, and without a donor distributing these things and actively promoting the practices to new beneficiaries in the future, the ability of the activities to spread on their own is very limited. Seeds are available from agricultural suppliers, but unfortunately man beneficiaries received them without a clear idea of where they might buy more. In any case, with such an array of donations given, and among beneficiaries who produce mainly for subsistence rather than cash income, the emphasis was not generally on sustainability.

In the health sector the idea was never to initiate profitable, self-financing activities, but to provide services and transfer skills to beneficiaries. Sustainability was targeted through three strategies: The use of village-level health volunteers, involvement of government (MINSA) health workers, and the establishment of self-supporting community pharmacies in some cases. The health volunteers, who live in the communities and do not require salaries, can conceivably continue to function for several years in the future. In the best case, as volunteer turnover inevitably occurs, outgoing volunteers and MINSA personnel can recruit and train replacements, and even increase the numbers. Less optimistically, without the project taking the initiative to organize and drive the system, the number of volunteers and their level of activity may decline over time.

MINSA health workers have been closely involved in project health activities from the beginning, with the understanding that they would receive training and assume responsibility for continuing the activities by project end. Field observations suggest that they have indeed acquired the skills promoted by the project. Transport is a serious issue for MINSA staff, however. They have been reaching remote villages via project vehicles. When asked how they will circulate without the project, they say they will coordinate transport with village leaders, perhaps getting rides on their mules, for example. There is serious concern about MINSA's access to project-serviced villages in the future, casting doubt on the sustainability of this aspect of the health program.

The community pharmacies (Social Medicine Outposts or SMOs) show every sign of being sustainable as long as they can cover their costs. Medicines in these SMOs must be set to cover both their purchase price and all operating costs, such as transport to and from the wholesale purchase points, etc. The management structures must also insure that there always are enough qualified individuals to operate the pharmacies.

Lastly, the road building, tree planting, well and latrine building, and soil conservation work done with Food For Work were never meant to be sustainable, since it relies absolutely on large quantities of donated food. The intent was to use resources available in the short term to realize improvements that will hopefully have a useful life of five or ten years more.

3. Monitoring and Evaluation/Reporting

As mentioned previously, USAID/Nicaragua had a comprehensive Data Quality Assessment (DQA) done in April 2007. While the DQA did not include most of the progress indicators used by the CSes, it did evaluate the monitoring and evaluation system of each CS and gave them high marks for the overall quality of their programs and the information generated by them. The DQA is punctuated by such comments as, "…well documented…", "…could serve as a model…, "comprehensive and thorough…"

In both Managua and the field, the Evaluation Team had similar reactions to both the monitoring and evaluation systems and the data generated. A request for information on the size of the loan portfolio, acreage of tomatoes, children under two years old, percentage of underweight infants, etc… was made available promptly, usually within minutes. Staff were knowledgeable and eager to display the qualities of their information systems. Even though the Evaluation Team may have some reservations about the sampling methodology used, there were no reservations about the accuracy and timeliness of the data, nor the openness of staff and their readiness to provide requested information.

4. Sectoral Linkages

The basic structural linkage between elements of all four DAPS is readily apparent, as the requirements for improving food security go far beyond simple provision of food or food production for home consumption and this was an underlying fundamental in the initial proposals and throughout the work plans of all the CSes. Clear advantages occur when one activity strengthens and supports efforts being made under another activity. Some activities are actual means for accomplishing the same end. For example, environmental conservation enhances production, as does credit for production inputs, organizational capacity, health of the people involved in the production process, etc… Less obvious are the situations where one or more activity provides means for another activity to take place or move forward more readily. A simple example could be the construction of a road to a farm area, previously unable to get horticulture products to market in a timely fashion.

The main elements that provide mutual support and enhanced performance are: health and nutrition, agriculture, micro-finance, Food For Work projects, potable water and sanitation, and literacy. Not all activities were implemented by all cooperating sponsors, but every sponsor had enough of the activities to benefit from several cross-sectoral linkages in the regions where they worked.

A prominent example of a mutually enhancing linkage is found between agriculture production, processing, and marketing. Fortunately, these are not viewed as separate activities, but as essential components of agriculture. Increasing agricultural production is only beneficial when crops can be processed and effectively marketed. The CSes' agriculture activities are cohesive and include all the facets in the value chain. Another prominent example not needing much explanation is the clear link between the availability and use of clean water and good health.

The household or family garden, as an agriculture activity for home consumption, and nutrition improvement, as a health activity, do have a powerful, direct linkage. Family plots are developed to increase food availability and improve diets. They may also increase income through sales and through substitution for commodities otherwise purchased.

Some linkages are not so obvious, yet are highly beneficial. One cooperating sponsor carries out literacy education activities in some agricultural regions. The literacy focus is pragmatic rather than academic: farmers seek and use the literacy activity to be able to read labels and understand costs of inputs. They can improve their use of agriculture chemicals, their capacity to negotiate selling prices, and understand the cost implications of different operational systems. They can also play more effective roles as participants in social and economic organizations, better able to comprehend written materials and to communicate with others.

Basic sanitation activities and maternal child health activities are tightly linked because of their interdependence. Health improvement interventions for children to reduce prevalent diseases are much less likely without adequate sanitation for the home (a latrine) is not realized simultaneously. Studies have shown that in communities with less than 80% of the homes having latrines, many health improvements are held in check, because some disease transmission routes are therefore not broken.

Another example is the linkage between improved income and improved caloric intake and nutrition. In poorer families it has been demonstrated that increased income translates into increased food consumption/calories (but not necessarily nutrition, but the potential present). Better roads and improved lands (through FFW), as well as productive credit can lead to improved agriculture value chains. A more effective value chain represents more income for the participants and this means more resources. If nutritional education is acted upon, overall health improvements follow.

The exception to this scenario is the case of the poorest families and farmers on marginal land. Lands with little or no potential for improved productivity are not worth putting in inputs where the cost:benefit ratio is poor. Using such lands for generating income is very problematic and lower incomes lead to less food availability and less possibility of nutritional improvement.

Linkages between activities are clearly a substantial part of success of the Title II Program. While they do not apply to all situations, implementers should continually seek and strengthen linkages that improve the effectiveness of the linked Program elements.

5. Organizational Capacity of Communities

A major component of CS agriculture, water, credit, and health activities (as well as general development areas) is the development of the capacity of local institutions to function well. Training and technical assistance are used as the major tools, with frequent provision of supplies, furniture and equipment. Considerable time and effort have been provided by the CSes, working with both the membership and group leaders. Inputs include establishment of operational structures, creating bylaws, procedures and work plans, obtaining legal status to conduct business, and instructing on the myriad of requirements for effective operations. This element

is integral to the ability of various groups, including health and water committees, business groups, cooperatives, community leaders, municipal development committees, etc… to represent their members and communities effectively.

CRS has undertaken a concerted program to strengthen the capacity of selected communities to work closely with local authorities in four municipalities, in addition to major efforts to further develop the capabilities of farmer groups and health committees. The CRS efforts in FY 2007, training hundreds of community leaders (850 men and 502 women) and encouragement of civic action, resulted in dozens of concrete initiatives and restructuring of the Municipal Development Committees and Municipal Strategic Plans. The other CSes also provided training to various beneficiary groups. In fact, all have worked throughout the period to strengthen governance capacity of their target populations, many of them community-based.

V. Implementation

A. Grant Administration

The Food For Peace Title II programs are administered by USAID/Washington's Food For Peace Office (FFP) and through country USAID Missions. Until 2006 reporting was largely done by FFP and activity results were often not reported by Missions in the R 4 and the Annual Report. In some cases, Title II programs were considered separate and distinct from those of the USAID Missions and were not required to be part of the Country Strategic Plan. Fortunately, this was overlooked by many Missions, as was the case in Nicaragua, where Title II activities were considered important and integral parts of the USAID country strategy and program. However, full integration didn't take place until 2006 and many anomalies are still apparent. Progress indicators did and do not conform to those used by USAID/Nicaragua in the Performance Management Plan and results reporting was not included in the Annual Report until FY 2006 (this was also the case in many other countries as well).

Fund flows from commodity sales and the 202e account were often not in conformance with the DAP agreements and amendments. Commodity allotments for supplementary feeding and Food For Work activities were frequently less than the amounts initially programmed. This was no fault of USAID/Nicaragua, nor of FFP, and is an understood factor in carrying out development activities with Title II resources. All parties appear to accept this and to accommodate significant, negative changes in food and financial resource levels.

B. Spread Effects

Spread effects of CS activities can be difficult to discern, unless there are physical in nature. Unless a 'control group' is surveyed and extensive on-site study is done, spread effects can only be reported anecdotally or as personal observations. Even these can be useful, as they are clear signs that activities have an impact on people other than the participants. Here are a few examples that were noted.

In the community of Jamaica (Municipality of Sebaco), CRS and its partner Caritas have introduced to the Cooperative "EcoVegetales" certain varieties of celery, mint, chayote (merliton), spinach and cilantro for specialty markets in regional capitals. Five years after introduction, nearly all producers along the Molino Sur River in communities around Jamaica are producing these crops. Similarly, PCI introduced a specific variety of bell pepper to a progressive farmer near La Concordia. That farmer has gone into commercial production of seeds. Reportedly a number of farmers in Jinotega have started growing and selling the bell pepper, without support from PCI.

In the village of Hato Grande in the El Viejo municipio, Save the Children field staff have taught the use of irrigated horticulture to families receiving Food For Work, and have distributed small drip irrigation systems. Nearly all the families in the community are now growing tomatoes, peppers, and other crops using drip irrigation, producing enough for family consumption as well as a surplus for sale. Also one farmer from a neighboring community decided to adopt the technologies and production methods using his own resources. He purchased drip irrigation

equipment and high-yielding tomato seeds and planted 1/8 manzana on his land. Project techniques and technologies are being copied and being adopted by farmers at their own expense, without subsidies.

With virtually all the agriculture corporations and cooperatives supported by the CSes and with those founded with CS support, membership has grown exponentially during the DAP period. The PCI-supported horticulture enterprise in La Concordia has doubled to 180 members in less than two years, the coffee cooperative assisted by PCI has grown four-fold to 336 members in one year, and the eight smaller horticulture/credit enterprises have doubled to 333 members since early 2006. A core group of 25 farmers promoted by ADRA was organized as an agro-business in 2003. Its remarkable success attracted other farmers and it has grown to 140 members in five years, all of whom have both the requisite agronomic conditions on their farms and the will to adopt the technologies, and who have become year-round producers of high-quality vegetables for a selective market.

C. Alliances

The four Cooperating Sponsors project have several types of inter-institutional relationships – in agriculture, credit, health, and education.

In the agricultural activities they have parental relationships with producer organizations formed by the project. These include cooperatives, enterprise, and informal producer associations. They also have commercial relationships with private sector providers of agricultural inputs and technologies, and with wholesale purchasers of agricultural outputs. These relationships serve mainly to facilitate contacts and commercial exchanges between the producer groups and these private suppliers and purchasers. To varying degrees the DAP partners also collaborate with their colleagues in MAGFOR, who are, in principle, to take over provision of technical support.

In the area of credit, each of the DAP partners also has relationships with microfinance institutions (MFIs) and in some cases projects that provide grants. At the national level, some examples are ACODEP, FUNICA, FODEM, FINDESA, CEPRODEL, FODEPRAG, CEPS, CARITAS AND FIDER.

For health services the DAP partners have worked most closely with MINSA field personnel from the beginning in child nutrition and community health promotion. MINSA personnel from the SILAIS are supposed to assume many CS-related functions at project end.

In cross-cutting programs in community agriculture and nutrition, natural resource management, and community health, each project has organized local citizens' groups, or where they existed already, have partnered with them. These are generally confined to the scale of individual villages or clusters of villages. These include community health committees, water user groups, and economic organizations (agro-businesses and cooperatives).

Many FFW activities have grown up out of alliances with a community(ies), the Alcaldia, and/or an economic organization(s). There is hope that communities and local government, as well as relations with other grouping, will continue to work together for the betterment of the people.

D. Beneficiaries

The table below shows the numbers of project beneficiaries by Cooperating Sponsor, sector, and gender

CS↓	Component→	Agriculture	Health	FFW (includes water & sanitation)	Sm. Business non-ag.	Literacy	Total	Credit (Included in figures at left)
PCI	Male	4,915	4,905	30,374		688	**40,882**	842
	Female	642	7,207	12,315		422	**20,586**	126
	Total	5,557	12,112	42,689		1,110	**61,468**	968
CRS	Male	2,655	2,685	2,720			**8,060**	2,087
	Female	592	10,933	845			**12,370**	753
	Total	3,247	13,618	3,565			**20,430**	2,840
ADRA	Male	7,075	13,052	21,875	1,479		**43,481**	1,479
	Female	9,766	56,979	18,603	1,900		**87,248**	1,900
	Total	16,841	70,031	40,478	3,379		**130,729**	3,379
SCF	Male	9,378	5,457	4,986			**19,821**	
	Female	10,792	8,125	6,014			**24,931**	
	Total	20,170	13,582	11,000			**44,752**	
Total	**Male**	**24,023**	**26,099**	**59,955**	**1,479**	**688**	**112,244**	4,408
	Female	**21,792**	**83,244**	**37,777**	**1,900**	**422**	**145,135**	2,779
	Total	**45,815**	**109,343**	**97,732**	**3,379**	**1,110**	**257,379**	7,187

* The totals do not include people helped during emergencies, such as in the aftermath of Hurricane Felix.

PCI has worked with a total of 300 communities in the Department of Jinotega, including 135 supported during the one-year coffee farmer relief effort. ADRA has worked with 189 communities in the Departments of Nueva Segovia and Madriz. CRS has worked with a total of 131 in the Departments of Jinotega, Esteli and Matagalpa. Save the Children USA has worked with a total of 109 communities in the Department of Chinandega. The total to date is 729 communities assisted through the Title II Program.

VI. Conclusions and Lessons Learned

Conclusions

The DAPs administered by ADRA, PCI, SCF, and CRS have been largely successful in its purposes of reducing child undernourishment and increasing economic opportunities in the areas where it operates. The rates of underweight babies and young children have in most cases been reduced beyond the targets set at the beginning of the project. Family diets have been diversified, food expenditures reduced, and small amounts of income generated through promotion of family gardens. Yields of maize and beans have been improved through the basic grains component, and the adoption of grain silos has virtually eliminated the 30% to 50% losses of grain formerly experienced with traditional storage, thus increasing the amount of food available for consumption. Where a water and sanitation component was included, it has had positive impacts in the availability and use of potable water and hygienic latrines. A dramatic success of the program came in the area of income generation, which averaged well over 100% growth in six years. Credit programs enabled beneficiaries to start or expand profitable micro-industry and commerce activities. The agriculture component introduced irrigated horticulture to areas where it was formerly a novelty, and it has been so successfully adopted that family incomes of participants have multiplied several times over and irrigated horticulture is a prominent part of local economies, even for small-scale producers. The learned and now internalized marketing prowess of participating farmers and their agro-businesses has effectively linked them to large-scale buyers in Nicaragua and overseas and better prices for higher quality commodities have resulted.

The successes under these DAPs illustrate the effectiveness of targeting income-generation resources at families at the lower margin of the cash economy, above subsistence level but needing the infusion of technical and management expertise, credit, and market linkages to break out of economic stagnation. Their limited prior earnings give them enough resources to begin investing in productivity upgrades, with the assistance of these project interventions, and the results-to-project-resources ratio is high. In the various cases of agricultural and non-agricultural enterprises started or assisted under this project, the sustainability prognosis is either confirmed or very likely. These businesses have acquired not only production skills, but marketing techniques and the ability to calculate and predict expenditures and revenues, and to make production and investment decisions accordingly. Farmers, for example, are no longer just farmers; they are business people.

On the other hand, the activities oriented toward the poorest beneficiaries, while they may have had some positive impacts, show a limited likelihood of sustainability or replicability. The health, family gardens, water and sanitation, and food distribution (including FFW) strategies rely heavily on continuous project involvement. In principle MINSA personnel are supposed to assume project-related health duties after 2008, and these professionals have absorbed the practices promoted under the project. In practice they will have a hard time doing that, given the shortage of personnel and their lack of independent transportation in rural areas. The networks of community health volunteers, while they work well now, will require continuous recruitment of new people (to be trained and supplied) in response to natural turnover, and it is not evident who will organize that in the future.

The family gardens have benefited from donations of inputs and equipment, which have helped the families involved improve their food security and diet. Unlike the commercial agriculture component, however, the family garden is not a phenomenon that can spread on its own without project staff introducing the techniques into new communities and providing needed resources. The same is true with the water and sanitation, reforestation, and road rehabilitation components. There is no question that they have rendered significant benefits, but they will not be continued or expanded and replicated without donor support.

In conclusion, almost all project activities have achieved their targets, and some, namely in agricultural and commercial activities, promise to go on reaching new beneficiaries and increasing incomes indefinitely. Over 257,000 Nicaraguans have benefited in one or more ways. On this basis, the DAPs, as amended, have successfully fulfilled the mission it undertook in 2002, with subsequent amendments.

Lessons Learned

Successes under the DAP are discussed elsewhere in this evaluation. This section focuses on challenges that have required adjustment and adaptation.

One of the most important lessons learned during this project has been the importance of commercial, market-oriented production in order to increase incomes. Some of the Cooperating Sponsors focused mainly on small-scale, socially-oriented interventions in the beginning, but since 2006 all of them have had commercial agriculture components. Certain key elements have been universal: Choosing crops based on the results of market surveys, identifying industrial clients and signing production contracts, collective marketing assisted by current market price information, technical production advice, adoption of productive technologies such as drip irrigation and hybrid seeds, the formation of profitable producer enterprises, and the development of the entire value chain simultaneously. This strategy has led to results that are both durable and significant in scale.

Another lesson learned has to do with weather, which is critical to agriculture. During this project rainfall has varied from seasonal averages in both directions; crops have been killed or reduced by drought and by constant saturating rains. While harvests have varied according to weather since time immemorial, farmers' vulnerability can be minimized by the choice of crops and by technologies that protect against climatic extremes. Irrigation, for example, protects against drought; greenhouses, raised beds, and plastic row covers protect against high rain and humidity; sesame survives a season of low rain; tree crops are buffered to a certain extent against aberrant rainfall; family gardens should not be promoted in flood-prone areas; etc. Droughts and floods are not rare events in Nicaragua, especially as the climate continues to change in unpredictable ways, so agricultural programs should include mitigation measures from the beginning.

In water and sanitation, where potable water projects brought in family yard taps (a very positive outcome), they sometimes inadvertently created a hygienic and environmental hazard in the form of poor drainage around the taps, resulting in puddling, mud, mosquito and disease habitat, and

water waste. Such projects need to take drainage into account at the design and construction stages, anticipating neighborhood drainage solutions and doing better planning for the placement and drainage of individual of water taps.

In order to attain and retain their effectiveness, programs that aim to get mothers to improve the diets and access to medicines for young children have had to become closely linked with income generation activities. One-time or occasional donations of vegetable seeds have not been sufficient to achieve durable nutritional improvements. The purchase of better foods and medicines requires cash income. Mothers of young children have therefore needed technical support to access credit and successfully undertake income-generation activities in areas such as petty commerce, small livestock, or cottage industries. The technical support needed includes business management and market development as well as production and credit access.

Another lesson learned in the health program is that the establishment of Social Medicine Outposts can serve an opportunity to exchange information with mothers. Since these non-profit pharmacies are patronized by almost all community members, and not just those participating in project activities, they can be used as a forum for passing health-related messages to young mothers, and also for collecting health data from them. With a small amount of additional training, the volunteer staff of these SMOs could perform these functions.

When used, the strategy of graduating beneficiaries up and out of the program has proven to be a good one. Those who receive assistance are expected to assume greater financial and technical responsibility for their activities in each succeeding round, and the sophistication and scale of the income-generating activities increases also at each level. After one or two such graduations, and in no longer than three years, most beneficiaries should be self-sustaining both financially technically. This does not mean that they no longer need credit, only that they should have the skills and collateral by that point to seek it on their own. Technical support may be needed for longer periods in the cases of new and unique enterprises that have a particular importance to the rest of the value chain, such as a nursery that produces certified vegetable seedlings. Even in these cases, however, independence is a medium-term goal, to be achieved before the term of the project ends.

VII. Best Practices

Overall, the implementation of the major activities in each sector has progressed reasonably well and the CSes have used approaches that are fairly well developed, tried and true. They do, in a sense, demonstrate the use of best practices in development. Throughout, there is constant interaction with the participants and beneficiaries. Activities are collaboratively planned and the CSes are support agencies for the programs being implemented and not the managers. Consistent efforts to foster and establish local capacity has been the norm. It could be said that the CSes have been truly working themselves "out of a job" and have been striving to reduce dependency. This philosophy and methodology is paying major dividends and, as resources dwindle, local organizations and DAP participants are better able to stand on their own and the potential for sustainability is enhanced.

Additionally, the collaboration with local government (especially MINSA and the Mayor's Offices/Alcaldias) has been woven into the implementation methodology of the CSes. This is especially visible with new road construction, with installation of some water systems, and with implementation of PROCOSAN. By using a collaborative approach and by inclusion of public health employees in training, planning, and implementation, there true ownership of the initiatives carried out together. Road reconstruction and repair, water system construction and maintenance, implementation of the new national Strategy PROCOSAN and its predecessor Integrated Child Care (AIN-C), have all been implemented jointly by the target communities, CSes, and government staff. Certainly a positive environment has been established and the potential for future collaboration is encouraging.

The majority of CS field staff are long-term residents of the Departments where the work is being carried out. Staff turnover has been relatively low and many CS employees have, through training and experience, become effective in both health and agriculture support activities. Staff have been effective and remain dedicated to their work and their fellow Department residents. Resident staff that are knowledgeable and capable in multiple areas are generally more effective than those who do not have these attributes and continuation of hiring and retaining such employees is encouraged.

For their agriculture and agro-business activities, all the CSes are implementing market-oriented, commercial initiatives. The emphases in production and processing by DAP participants are directed toward sales, establishment of stable, reliable markets for their products, and for obtaining the best prices available for better quality products. These emphases are appropriate and, although some changes have been required (moving away from production for home/internal consumption), this market orientation is essential when agriculture is the vehicle for lifting people out of poverty.

Particular, CS-specific best practices are noted for activities that could be replicated or that warrant further scrutiny and publicity. There may well be many additional best practices that could be included and this short list that follows is not meant to be comprehensive.

ADRA – For the purpose of improving the availability of basic, non-prescriptive medical supplies, ADRA has developed community-based selling points called Social Medicines

Outposts. The Social Medicines Outpost (SMO) initiative implemented by ADRA has proven to be an efficient community strategy and a suitable program for getting basic medicines closer and cheaper to the most vulnerable population in Madriz and Nueva Segovia. Given that some of the SMOs are located at the "Casas Maternas" (Mother Houses), which is part of the MINSA health strategy, this initiative has strengthened the coordination with the SILAIS´ decision-makers, promoted prenatal check-ups, and increased deliveries carried out at the health units. The nine SMOs established to date under the DAP are functioning autonomously and could well serve as a replicable model for other communities, especially for those in more remote areas.

SCF - The Community Children's House (CRN) represents in the area of Chinandega the main structure and the central focus of the whole community's health and nutrition dynamic. Community volunteers, program's extension staff, MINSA personnel, service providers, decision makers, mothers, children, and local leaders are call together at the CRN to weigh children, stimulate early child development, and train mothers on food preparation and food utilization topics. In addition, once a month local stakeholders analyze the DAP´s progress indicators to make strategic adjustments to program interventions and for decision-making purposes. This successful model could be promoted and expanded to other communities in and beyond Chinandega, perhaps when the MINSA´s new Comprehensive Attention to Health Program is introduced next year.

CRS – CRS has been working closely for many years with the semi-autonomous Caritas NGOs within selected Departments. By partnering with a well-established, successful, indigenous NGO, transition from activities being discontinued by CRS and being passed on to the local Caritas has and will be a relatively simple and efficient process. International development organizations who have not built these links to local NGOs can face problems with sustaining long-term initiatives and with making their organizations dispensable.

PCI - The community of Yupalí looks little different than many rural locations in Nicaragua - a collection of modest homes, dirt paths, children and chickens running about. PCI worked with the community to construct a simple water system in 2003, including a well, an electric pump, and a distribution system that provides each home with a yard tap. None of the yard taps were leaking. The community uses meters for measuring the amount of water delivered. Because the pump requires electricity, the community needed to ensure a steady revenue stream to pay the monthly bill. Equally important, the community needed to ensure that the energy to pump the water would not be wasted and that the cost would be allocated on an equitable basis. Yupalí, with guidance from PCI, decided to meter their water supply. The results are apparent: everyone has a tap close at hand, the yards have no pools of standing water, the tank retains an ample reserve of water, the system is operable all day, no one wastes or uses a disproportionate amount of water, and the electric bill gets paid. Meters provide a low cost solution. Although metering in rural settings is hard, unpredictable, time-consuming, and sometimes risky, kudos to PCI and Yupalí for providing an example worth following.

SCF - Save the Children USA published a booklet titled *Guía de Comercialización Agrícola para Pequeños Productores*, which contains lists of input suppliers and output buyers, as well as graphic illustrations of seasonal price fluctuations for a variety of horticultural crops. Producers use this booklet as a handy source of contacts for input supply and marketing of outputs. This

booklet covers the Chinandega Department specifically, but similar editions for other Departments would be useful to agro-business participants there.

ADRA - ADRA organized three irrigation districts (in the Municipality of Totogalpa) around borehole wells, where water is pumped to vegetable growers who pay $0.40 per cubic meter. The water consumption fees pay for the operation and maintenance of the pumps. The districts are owned and managed by a producer enterprise with 26 shareholders. The financial structure allows the water supply system to function indefinitely and supply irrigation water to producers who cannot have individual wells on their property. Such a structure may well be suitable where the cost of individual wells would be prohibitive or impractical for individual farmers.

VIII. Recommendations

Completion Strategy: With less than ten months left before termination of the DAPs, it is recommended that no new Title II initiatives be undertaken by the CSes. If additional resources will be available to continue or expand existing, successful activities, then efforts to segue them into those 'new' initiatives should be started very soon. Not all last-year work plans consider this possibility, but perhaps this is most prudent. Overall, close-out plans are reasonable, although the need to rely on MINSA to pick up most health interventions is unfortunate. Only CRS has been able to procure new funding for continuation of agriculture activities, although residual funds that will be held by PCI will probably be allocated to a Nicaraguan NGO that will carry on some of the work PCI has launched.

Health Wrap-Up: The CSes are encouraged to reinforce and prioritize the nutritional strategy by focusing on the most vulnerable mothers, malnourished children, and new participants in the health activities being implemented during the last ten months of the DAP. The early impact of the Social Medicine Outpost (SMOs) on improving access to basic medicines to more vulnerable mothers might be spread beyond the handful of ADRA communities now benefiting. It is recommended that the CSes spread the 'Base' and 'Children's Community' House models to other communities and to take them into account for other food security programs that the Nicaraguan government or other stakeholders may implement in the future.

Behavior Change: For all targeted communities, it is recommended that the CSes strengthen the health messages on behavioral and sustainable changes. This could include more emphasis on hygiene counseling such as washing hands and appropriate waste disposal. This is critical due to the close link between prevalence of diarrhea, cholera, malaria, dengue and pneumonia, with bad habits of hygiene. Cultural or social inhibitors to behavior change should be analyzed and addressed when strengthening and promoting health behavior changes.

Progress Indicators: Each CS measured progress through their DAP in different ways. This made joint reporting more difficult, as well complicating the measurement of effectiveness through different approaches and strategies. These differences extended to the data collection methodology as well. Examples include using different sample sizes, different ages of children for levels of malnutrition, average income for undifferentiated economic groups, etc… For future development assistance interventions, we recommend that a concerted effort be made to standardize the progress indicators to be used by the implementing organizations tackling the same problems/needs. This standardization should include the definitions of the indicators and the methodologies used to collecting data.

Income: Income growth for individual participants is a valuable progress measurement. However, it is less useful when participating producers are not differentiated by baseline income or crop type, as subsistence farmers and more advanced commercial farmers are lumped together inappropriately when measuring net income. Also, showing average net income is less useful than reporting median net income, as enormous gains by a handful of farmers can overshadow income stagnation or even deterioration by a much larger group of subsistence farmers and still show a big improvement in average net income.

Credit: Availability of credit is an essential input for commercial agriculture by small and medium-scale producers. Given the cyclical nature of the crop seasons and the benefits of being able to react quickly to market changes, availability of financial resources can be critical for effective, efficient operations. When credit is not available, opportunities may be lost in entering new markets, expanding operations, and limiting timing flexibility for entering the marketplace. Therefore, any development program focused on commercial farming should factor credit into the equation. If participating farmers do not have ready access to credit, the development assistance organization should help them to gain such access. This help may range from setting up some form of financial institution, to helping farmers develop loan applications and introducing them to credit institutions, to encouraging credit institutions to broaden geographic and client portfolios. Unsubsidized credit availability is an essential component of most sustainable agriculture activities.

Target Population: Findings in these DAPs have pointed out that assistance resources for assisting large numbers of small-holder commercial farmers are most effectively applied within a certain stratum of the rural population, that is, small-scale farming families who are above the subsistence level. They typically bring small quantities of agricultural production to market, and are involved in the cash economy. These are the families who, with a modest level of help in the form of technical assistance, training, and credit access, will invest some of their own limited resources and a great deal of energy to graduate to a higher level of productivity and quality and achieve a better standard of living. These beneficiaries, in turn, hire workers and provide employment for the very poor, increase their patronage of other local businesses, and generally raise the amount of wealth circulating in a community. They should therefore be the main target of rural poverty alleviation program hoping to use agriculture as the major income source.

Gender Balance: Cultural conditions make it difficult to include similar numbers of women and men in commercial horticulture and business activities; yet it is important to improve the gender balance and include more women and men. One effective strategy may be to actively recruit young women and men who have not yet had many children, who may have the time and inclination to become involved in profitable business and health-related activities. Cultural and social inhibitors to male/female participation in activities should be studied and addressed.

Technology Transfer: When projects finance or partially finance technology adoption (including machinery, plants or livestock, buildings, equipment, etc.) it is important to keep the cost of the technology in line with the scale and profitability of the activity, and to avoid provision of items that cannot be amortized through productive activities. One way to make sure a donation is in proportion to a profit-making activity is to factor its cost into a business plan for the activity. If future revenues are insufficient to cover replacement costs, then less costly technologies should be sought.

Risk Mitigation: When a particular intervention is considered experimental and risky and when a project seeks farmer involvement without unduly exposing them to harsh financial penalties, there are measures that can be taken to mitigate risk to farmers. A project can include provisions to compensate farmers at a certain level in the event of failure; that level could cover their costs and be equal to their opportunity cost for whatever they would be growing otherwise; yet it should not compete with the earnings they would receive by carrying through successfully with

the activity, in order to leave them the incentive to do so wherever possible.

Capacity Development: Project field staff should train and assist beneficiaries, rather than acting in place of them. Too often field staff perform services for beneficiaries, such as writing their business plans or testing their soil, because it is much quicker and easier than helping the beneficiaries to do it themselves. This type of expediency is misplaced, however, since the big-picture goal is not a finished business plan or the result of a soil test, but beneficiaries who are capable of providing or obtaining these services on their own.

Model Farms: Model farms should be the best of the regular farms, rather than special creations of projects that benefit from unusual levels of resources. Farmers who visit a model farm should know that the model farmer started out just like they are and received the same resources that they receive, and were able to make a dramatic difference on that basis alone. Artificially-created model farms do not make legitimate examples for replication.

Reforestation Accomplishments: If Food For Work or other programs support reforestation, a component of the effort should be to include coverage for one or two years of post-planting maintenance in addition to planting, and monitoring of tree survival rates should be done.

IX. Appendices

A. Meetings and Site Visits

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A. Meetings and Site Visits

Project Concern International (PCI)

1. Place and Date: Office of PCI/CDR, Cuatro Esquinas, San Rafael del Norte, Jinotega, November 16, 2007
Group: PCI Field Staff
Reason (s): DAP Food Security program and Agriculture Production in La Concordia, San Rafael del Norte, Yalí, and Pantasma, discussions Reason (s): WSS program implementation discussion
Participants: PCI, Health (4), Credit and Agriculture Staff (3), Administration (2) PCI Staff (2), PCI Home Office (1)

2. Place and Date: Office of Sociedad de Productores y Comercializadores de Responsabilidad Limitada (SOPROCOM), La Concordia, Jinotega, November 17, 2007.
Group: SOPROCOM, Instituto de Desarrollo Rural (IDR) Field Staff, PCI Field Staff
Reason (s): Presentation of SOPROCOM Work Plan and discussion
Participants: SOPROCOM Boards Members (8), IDR Advisor (3), PCI Field Staff (5)

3. Place and Date: La Esperanza Farm, La Concordia, Concordia, Jinotega, November 17, 2007
Group: PCI Field Staff, Cooperative Members and Producers beneficiaries
Reason (s): Benficiaries farm visit
Participants: PCI Field Staff (5), Cooperative Members (4), Producers (3)

4. Place and Date: El Coyolito Community, La Concordia, Jinotega, November 17, 2007
Group, PCI Field Staff
Reason (s) Discussion with a producer
Participants, PCI Fields Staff (3)

5. Place and Date: Yupali Community, La Concordia, Jinotega, November 17, 2007
Group: PCI Field Staff, Yupalí Water Board
Reason (s): Potable water discussion
Participants: PCI Field Staff (3), Community Members (8)

6. Place and Date: El Volcán Community, Yali, Jinotega, November 19, 2007
Group: PCI WSS Field Staff, Water Board president and treasurer
Reason (s): water system operation, community sanitation, hygiene practice
Participants: PCI Field Staff (2), Community Members (3)

7. Place and Date: Bijawal Community, Yali, Jinotega, November 19, 2007

Group: PCI WSS Field Staff, Community members
Reason (s): water system operation, community sanitation, hygiene practice
Participants: PCI Main Office (1), PCI Field Staff (2), Community Members (5)

8. Place and Date: Office of Empresa de Comercializacion y Credito (ECC), Community El Tigre, Yali, Jinotega, November 19, 2007
Group: ECC Members, PCI Field Staff, Servicios Técnicos Agrícola (SERVITECA) Staff, PCI Beneficiaries
Reason (s): Presentation of Work Plan and discussion
Participants: ECC (14), PCI Field Staff (3), SERVITECA (1)

9. Place and Date: Office of the Ministry of Education (MOE), Pantasma, Jinotega, November 20, 2007
Group: MOE Field Staff, PCI Field Staff, Literacy for Adults Volunteers
Reason (s): Literacy for Adult discussion
Participants: MOE Field Staff (3), PCI Field Staff (1), Literacy for Adults (2)

10. Place and Date: Town Government Office, Pantasma, Jinotega, November 20, 2007
Group: Mayor of Pantasma, PCI Field Staff
Reason (s): Mutual community activities needs with PCI discussion
Participants: Mayor of the Town, PCI Field Staff

11. Place and Date: El Portal Community, Pantasma, Jinotega, November 20, 2007
Group: PCI WSS Field Staff, Community members
Reason (s): water system operation, community sanitation, hygiene practice
Participants: PCI Field Staff (2), Community Members (7)

12. Place and Date: Office of the Cooperativa Multisectorial de Café (COOMCAFE), El Plantel, Pantasma, Jinotega, November 21, 2007
Group: PCI Field Staff, Cooperative Board Members, Community Leaders, Agriculture Producers
Reason (s): Presentation of Work Plan and discussion
Participants: PCI Field Staff (3), Cooperative Members (13), Community Leader (1), Agriculture Producers (3)

13. Place and Date: Los Encuentros Community, San Rafael del Norte, Jinotega, November 21, 2007
Group: PCI Staff, PCI Field Staff
Reason (s): Exit discussion
Participants: PCI Staff (2), PCI Field Staff (7)

14. Place and Date: Office of PCI/CDR, Cuatro Esquinas Community, San Rafael del Norte, Jinotega, November 21, 2007
Group: PCI WSS Field Staff
Reason (s): WSS program implementation discussion
Participants: PCI Staff (2)

Catholic Relief Services (CRS)

1. Place and Date: Office of CARITAS, Jinotega, November 22, 2007
Group: CRS Staff, CARITAS and CRS Field Staff, and FIDER
Reason (s): Presentation of CARITAS Work Plan and discussion
Participants: CARITAS, Health (2), Credit and Agriculture Staff (1), CRS Staff (4), FIDER (1)

2. Place and Date: Community El Sesteo, San Nicolas, Esteli, November 22, 2007
Group: CRS Staff, CARITAS and CRS Field Staff, and FIDER and Agriculture Producers
Reason (s): Presentation of CARITAS Work Plan and discussion
Participants: CARITAS, Health (1), Credit and Agriculture Staff (2), CRS Staff (2), FIDER (4), Health Volunteer (2), Credit and Agriculture Promoters (2), Cooperative Members (20), Municipal Mayor (1).

3. Place and Date: Sacacli Community, La Concordia, Jinotega, November 22, 2007
Group: CRS Field Staff, Beneficiaries (women)
Reason (s): Visit to women group (artesanal goods and craft maker)
Participants: CRS Field Staff (4) Beneficiaries (6)

4. Place and Date: Office of CARITAS, Estelí, November 23, 2007
Group: CRS Staff, CARITAS and CRS Field Staff, FIDER
Reason (s): Presentation of CARITAS Work Plan and discussion
Participants: CARITAS, Health (1), Credit and Agriculture Staff (3), CRS Staff (4), FIDER (5)

5. Place and Date: Office of CARITAS, Sébaco, Matagalpa, November 23, 2007
Group: CRS Staff, CARITAS and CRS Field Staff, Cooperative Board Members
Reason (s): Presentation of CARITAS Work Plan and discussion
Participants: CRS, Health (1), Finance (1), CARITAS, Credit (1), Agriculture (2) Health (1), Office Staff (3)

6. Place and Date: ECO Vegetables Cooperative Producers, Community of Jamaica, Sebaco, Matagalpa, November 24, 2007
Group: CRS Staff, CARITAS Field Staff
Reason (s): Presentation of CARITAS Work Plan and discussion
Participants: CRS, Health (1), CARITAS, Agriculture (1), Cooperative Members (4)

Save the Children Federation (SCF)

1. Place and Date: Office Save the Children Federation (SCF), Chinandega, Chinandega, November 16, 2007
Group: SCF Field Staff
Reason (s) Presentation of SCF Work Plan and discussion
Participants: SCF, Health and Nutrition (2), Economic Opportunities (EO) (2), Marketing Agribusiness (2), Community Training and Mobilization (1), Planning and Monitoring (1), Field Office Director (1), Field Office Manager (1), Field Office Secretary (1)

2. Place and Date: Home of Women Group, Potosi, El Viejo, Chinandega, November 17, 2007
Group: SCF Field Staff, EO Focus Group
Reason (s): Presentation of a Focus Group (12 women/4 men) Horticulture, Health and Nutrition activities, and interview of beneficiaries working with FFW
Participants: SCF, Health and Nutrition (2), EO Staff (3), Field Office Director (1)

3. Place and Date: Home a Women Group, Cosiguina, El Viejo, Chinandega, November 17, 2007
Group: SCF Field Staff, EO Focus Group
Reason (s): Presentation of EO Focus Group (17 women/7 men) Basic Grains, Health and Nutrition activities, discussion with beneficiaries working on road repairs with FFW
Participants: SCF, Health and Nutrition (2), EO Staff (3), Field Office Director (1)

4. Place and Date: Field Visit to Community Mata de Cacaco, El Viejo, Chinandega, November 17, 2007
Group: SCF Field Staff, EO Focus Group
Reason (s): Interviews with Greenhouse Focus Group (4 women) and Basic Grains Focus Group producers (16 men), visit of a model farm
Participants: SCF, Health and Nutrition (2), EO Staff (3), Field Office Director (1)

5. Place and Date: Health Center, Rincon Garcia, Villanueva, Chinandega, November 19, 2007
Group: SCF Field Staff, Health and Nutrition Promoters, Ministry of Health SILAIS
Reason (s): Presentation of Health and Nutrition activities by Nurses from the SILAIS and Mothers in the program, visit two family gardens
Participants: SCF, Health and Nutrition (2), EO Staff (3), Field Office Director (1)

6. Place and Date: Community of Pajuil No. 2, Villanueva, Chinandega, November 19, 2007
Group: (s) Visit a horticulture product farm, interview an Agriculture Cooperative Collection Center, interviewed people doing roads repairs with FFW commodities, children weighing demonstration and interviews with mothers in the health program
Participants: SCH, Health and Nutrition (2), EO Staff (3), Field Office Director (1)

7. Place and Date: Community Los Tablones, Villanueva, Chinandega, November 19, 2007
Group: SCF Field Staff, EO Focus Group
Reason (s): Visit the San Francisco farm, family gardens groups working with FFW, brief presentation by the Community Children House (CRN)
Participants: SCF Health and Nutrition (2), EO Staff (3), Field Office Director (1)

8. Place and Date: Office of Agribusiness Center of Somotillo, Somotillo, Chinandega, November 19, 2007
Group: SCF Field Staff, Agribusiness Center Staff, Town Government Mayor
Reason (s): Presentation of Work Plan and discussion
Participants: SCF, EO Staff (3)

9. Place and Date: Family Home Community La Sandino, Puerto Morazán, Chinandega,

November 20, 2007
Group: SCF Field Staff, EO Focus Group, SILAIS Nurse, Health Volunteer
Reason (s): Health and Nutrition presentation, visit family garden
Participants: SCF, Health and Nutrition (2), EO Staff (3), Field Office Director (1)

10. Place and Date,: Community Hato Grande, Puerto Morazan, Chinandega, November 20, 2007
Group: SCF Field Staff, EO Focus Group, SILAIS Director, and Nurse
Reason (s): Health and Nutrition presentation, visit family garden
Participants: SCF, Health and Nutrition (2), EO Staff (3), Field Office Director (1), SCF Deputy Country Director (1)

11. Place and Date: Community Los Portillo, El Viejo, Chinandega, November 20, 2007
Group: SCF Field Staff, EO Focus Group
Reason (s): Health and Nutrition presentation, visit family garden and basic grains producers
Participants: SCF, Health and Nutrition (2), EO Staff (2), Field Office Director (1) SCF Deputy Country Director (1)

12. Place and Date: Community El Bejuco, El Viejo, Chinandega, November 20, 2007
Group: SCF Field Staff, Health and Nutrition Group
Reason (s): Health and Nutrition presentation
Participants: SCF, Health and Nutrition (2)

13. Place and Date: SCF Field Office, Chinandega, Chinandega, November 20, 2007
Group: SCF Field Staff, Field Office Director, Deputy Country Director, SILAIS
Reason (s): Exit discussion
Participants: SCF Field Staff (12), Field Office Director (1), SILAIS (2), SCF Deputy Country Director (1)

Adventist Development Relief Agency (ADRA)

1. Place and Date: ADRA Field Office, Ocotal, Nueva Segovia, November 21, 2007
Group: ADRA Staff, ADRA Field Staff
Reason (s): Presentation of Work Plan and discussion
Participants: ADRA Staff (3), ADRA, Health and Nutrition (1), Water and Sanitation (1) Commercial Credit (1), Marketing (1), Basic Grains and Family Garden (1) Field Office Director (1), Agriculture (1)

2. Place and Date: Santa Cruz Community, Jalapa, Nueva Segovia, November 22, 2007
Group: ADRA Field Staff, Basic Grains producers
Reason (s): Basic Grains discussion
Participants: ADRA Staff, Basic Grains and Family Garden (1), Water and Sanitation (1)

3. Place and Date: El Corozo and Nueva Esperanza Communities, Ocotal, Nueva Segovia, November 22, 2007
Group: ADRA WSS Field Staff, Community members

Reason (s): water system operation, community sanitation, hygiene practice
Participants: ADRA Field Staff (3), Community Members (2)

4. Place and Date: Apalí Viejo and Santa de Susucayan Nueva Esperanza Communities, Susucayán, Nueva Segovia, November 22, 2007
Group: ADRA WSS Field Staff, Community members
Reason (s): water system operation, community sanitation, hygiene practice
Participants: ADRA Field Staff (3), Community members (2)

5. Place and Date: Loma Linda, Santa Clara, Nueva Segovia, November 22, 2007
Group: ADRA Field Staff, Seedlings Producer
Reason (s): Visit the seedlings Greenhouse operations
Participants: ADRA, Staff Basic Grains and Family Garden (1) Agriculture (2), Marketing (1), ADRA Staff (1), Water and Sanitation (1), Health (1)

6. Place and Date: Mozonte, Mozonte, Nueva Segovia, November 22, 2007
Group: ADRA Staff, ADRA Field Staff
Reason (s): Commercial Loans discussion (3 women/3 men)
Participants: ADRA Staff (1), ADRA Field Office Commercial Credit (1)

7. Place and Date: Ocotal, Nueva Segovia, November 22, 2007
Group: ADRA Staff, ADRA Field Staff, Micro credit Finance Director
Reason (s): Micro credit financing discussion
Participants: ADRA Staff (1), ADRA Field Staff Commercial Credit (1), Micro credit financing (1)

8. Place and Date: Fraile and Palmero Communities, Totogalpa, Nueva Segovia, November 23, 2007
Group: ADRA WSS Field Staff, Community members
Reason (s): water system operation, community sanitation, hygiene practice
Participants: ADRA Country Director (1), Field Staff (3), Community members (2)

9. Place and Date: Buena Vista Santo Domingo, Totogalpa, Nueva Segovia, November 23, 2007
Group: ADRA Staff, ADRA Field Staff
Reason (s): Visit a greenhouse and open field tomato, sweet pepper plantation
Participants: ADRA Staff (1), ADRA Field Staff Marketing (1), Agriculture (1), Commercial Credit (1)

10. Place and Date: Sabana Grande, Totogalpa, Nueva Segovia, November 23, 2007
Group: ADRA Staff, ADRA Field Staff
Reason (s): Visit an Enterprise collection center facilities
Participants: ADRA Staff (1), ADRA Field Staff Marketing (1), Agriculture (1), Commercial Credit (1)

11. Place and Date: Sabana Grande, Totogalpa, Nueva Segovia, November 23, 2007
Group: ADRA Staff, ADRA Field Staff

Reason (s): Commercial Credit discussion (3 women/2 men)
Participants: ADRA Staff (1), ADRA Field Staff Commercial Credit (1)

12. Place and Date: El Plan, Yalaguina, Madriz, November 23, 2007
Group: ADRA Staff, ADRA Field Staff
Reason (s): Visit reforestation project under Natural Resource Management (NRM) component
Participants: ADRA Staff (1), ADRA Field Staff NRM (1), Agriculture (1), Marketing (1)

13. Place and Date: San Lucas, November 25, 2007
Group: ADRA Staff, ADRA Field Staff
Reason (s) Family Gardens visit and discussion
Participants: ADRA Staff (2), ADRA Field Staff NRM (2)

14. Place and Date: Moropoto, San Lucas, Madriz, November 25, 2007
Group: ADRA Staff, ADRA Field Staff
Reason (s) Basic grains producers (2 women/2 men) discussion
Participants, ADRA Staff (2), ADRA Field Staff Basic Grains Family Garden (2)

15. Place and Date: ADRA Headquarters, Ocotal, Nueva Segovia, November 25, 2007
Group: ADRA WSS Field Staff
Reason (s): WSS program implementation discussion
Participants: ADRA WSS Staff (1)

16. Place and Date: ADRA Field Office, Ocotal, Nueva Segovia, November 25, 2007
Group: ADRA Staff, ADRA Field Staff
Reason (s): Exit meeting
Participants: ADRA Staff (3), ADRA Field Office Director (1), Agriculture (1), NRM (1), and Basic Grains/Family Garden (2), Water and Sanitation (1), Health (1), M&E (1)

17. Place and Date: HORTIFRUTI Main Office, Managua, November 26, 2007
Group: HORTIFRUTI Commercial Director
Reason (s): DAP horticulture products discussion
Participants: HORTIFRUTI (1)

18. Place and Date: ADRA Main Office, Managua, November 29, 2007
Group: ADRA Staff, ADRA Field Staff, CATIE Consultant
Reason (s): CATIE presentation
Participants: ADRA Staff (2), ADRA Field Staff (7)

B. Key Documents

In terms of each of the Cooperating Sponsors, the Evaluation Team was provided with copies of the following: DAP Agreements and Amendments; Results Reports (through FY 2007); and Resource Requests. Additional documents obtained included materials useful to the Evaluation Process.

General

USAID/Nicaragua, Nicaragua Data Quality Assessment SO 2, Management Systems Intl., 4/30/2007

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Calderwood, Lic. Anyelska, Plan de Negocio de Frutas y Hortalizas de Manera Artesanal - Grupo de Mujeres Rurales Procesadoras de Frutas y Hortalizas MAKELY, Comunidad El Manzano No 2.El Viejo, Chinandega, Nicaragua, SCF & USAID, November 2007

Guillermo Gutiérrez Castillo, Costos de Produccion y Rentabilidad de Diferentes Rubros, SCF, November 2007

Costos de Produccion por Rubro, SCF, November 2007

Costos de Produccion del Tomate y Sandía, SCF, November 2007

Guillermo Gutiérrez Castillo, Costo Vivero Frutales, SCF, November 2007

Costos de Produccion Plantulas Frutales Zopilotepe 2007, November 2007

Dr. Eliécer Vargas y M.Sc. Patricia Talavera, Presentacion de Resultados Preliminares y Taller de Retroalimentacion, Centro Agronómico Tropical de Investigación y Enseñanza, SCF, & USAID, November 2007

Dr. Eliécer Vargas y M.Sc. Patricia Talavera, Impacto de la Estrategia de Caderas de Valor del Componente Agrícola Comercial del Proyecto DAP, Centro Agronómico Tropical de Investigación y Enseñanza, SCF, & USAID, December 2007

Dawit Habtemariam, Draft Final Survey Report, Nicaragua Title II DAP, ADRA-International Inc., October 2007

Marcela Villagra, ADRA DAP Exit Strategy (excerpt), ADRA-Nicaragua, July 20, 2007

Isidro Rodriguez, Credit Sustainability Plan – DAP**,** ADRA-Nicaragua**,** November 28, 2005

ADRA-Nicaragua, Attachment 6 IPTT FY07, 2007

ADRA-Nicaragua, Beneficiarios Proyecto DAP-LOA a Sept.2007, December 2007

ADRA-Nicaragua, Development Assistance Program Amendment (Final Revised), December 8, 2005

ADRA-Nicaragua, Development Activities Program Mid Term Evaluation, August 2004

Marcela Villagra & Néstor Mogollón, Sistematización de Experiencias de ADRA Nicaragua - Siembra de Tomate de Mesa Bajo Tecnología de Túneles, ADRA-Nicaragua, August 2006

ADRA - FODEM Agreement, ADRA-Nicaragua**,** October 18, 2006

ADRA-Nicaragua, Final Report Title II ADRA Nicaragua Fiscal Year 2003 Results Report, October 15, 2003

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David Díaz, Analisis de rentabilidad por cultivo por Productor por Mz 2007, ADRA/Nicaragua, December 11, 2007

Marcela Villagra, Justificacón de la mora remanente de crédito agrícola DAP-1, ADRA/Nicaragua, December 7, 2007

Isidro Rodriguez, ADRA Productividad y Rentabilidad de productos horticolas seleccionados (3), ADRA/Nicaragua, December 7, 2007

C.

Methodology and Questionnaire

SAMPLE METHODOLOGY FRAMEWORK

INTERVENCION	METODOLOGIA	PARTICIPANTES	FECHA
AGRICULTURA Infraestructura MRN Comercialización Producción Procesamiento Crédito	Observaciones Grupos focales con productores miembros Visitas a los Centros de Acopio Visitas individuales con productores beneficiarios Reunión con Lideres comunitarios Entrevistas a proveedores Entrevistas con compradores Reunión con autoridades locales (Alcaldías, Magfor)	**Producción y comercialización:** Productores hortícola miembros de las Empresas Rurales de Producción Productores de granos básicos Madres productoras de huertos familiares Compradores (Hortifruti, Mayoreo, Mercados locales) Autoridades locales **Infraestructura:** Participantes de sub. proyectos de rehabilitación y mantenimiento de caminos **Manejo de Recursos Naturales**: Participantes en Reforestación, Manejo de Bosques y Obras de conservación de suelo y agua **Crédito:** Micro financieras Contrapartes	

SALUD Nutrición/ PROCOSAN/ MCH/ Plan de Parto Sistemas de Referencia/contrarreferencia	Reunión con el SILAIS Visitas a Centros y Puestos de Salud Entrevistas con beneficiarios (madres y padres) Entrevistas a brigadistas Visitas a Casas Bases Entrevistas con contrapartes locales	Representantes del SILAIS Madres miembros de Clubes Madres productoras de huertos familiares Padres miembros de Clubes Brigadistas	
AGUA POTABLE Y SANEAMIENTO Letrinas Pozos Perforados Pozos Excavados Mini Acueductos por Gravedad	Observaciones Reunión con miembros de los CAPS (tesorero, fontanero o mantenimiento, cobrador, adicional) Reunión con Lideres comunitarios Reunión con autoridades locales Entrevistas con Alcaldes Reunión con responsable de diseño de obras	Comités de Agua Potable y Saneamiento Lideres comunitarios Alcaldías Municipales Familias beneficiarias (casas ubicadas en lugares mas altos y mas bajos)	

General Evaluation Questions

Evaluation Questions	Organization and Activity
Behavior Change	
Are beneficiaries adopting desired practices or behaviors?For Health, Agriculture, Potable Water and Sanitation, and Micro-Enterprise Credit, how well established are these programs and what indications are there that the changes being sought have become the “norm”?	

Evaluation Questions	Organization and Activity
Which practices have beneficiaries been more inclined to adopt/adapt, and why?	
How can the program be modified to address these constraints to adoption?	
Are the strategies used adequate to achieve changes in behavior?	
Sustainability	
Which outcomes are likely or unlikely to be sustainable, and why? Sustainable activities are those in which: the systems for carrying out the subject activities are accepted and related practices are well known, proven, and established; where the related supporting activities (processing, marketing, health care infrastructure, economic conditions in the community) are also well-established and stable; and where the 'incentives' for conducting the activities are consistently present (profitability, good health).	
What can be done to increase the sustainability?	
Is there a well-developed exit strategy? If so, has the CS moved forward to initiate that strategy?	
Will it be possible, in the remaining months of the program, to hand off responsibility to a local entity? If not, what additional efforts need to be undertaken?	
Has the program effectively collaborated with local partners/counterparts, ministries, local councils, etc?	
How does the DAP strengthen or expand the capacity of these local partners/counterparts, and will they be able to maintain this strengthened or expanded capacity once the DAP ends?	
Monitoring and Evaluation	
Has the program achieved its targets to date? If not, why not?	
2. Are established targets reasonable, given the current program context? If not, how do they need to be modified in follow-on efforts?	
As defined and measured, do the performance indicators provide useful and reliable data on program progress and impacts?	
Are M&E data collected and reported regularly and in a timely fashion?	
Are M&E data and anecdotal information used for management purposes?	
Can M&E data and anecdotal information be better used for program management?	
Does the technical staff use M&E data and anecdotal information to conduct their work and assess progress? How can they use it more effectively?	
Are M&E data and anecdotal information shared with the communities or beneficiaries?	
Are M&E data and anecdotal information shared with the other local organizations working in the area? Who is in charge of M&E and how do they carry it out?	

Evaluation Questions	Organization and Activity
What additional training is required? What immediate steps can the CS take to address the identified shortcomings?	

Evaluation Questions by Technical Sector and Identified in PMP

Agriculture and Marketing Activities

Evaluation Questions	Methodology			
Marketing:				
Is there an accessible market for the products or services produced by DAP?				
Do the linkage initiatives to the farmers with the formal market have an element of community organization or another that allows them to function once the project has finished? What is the actual impact in terms of farmer income?				
Do additional direct or indirect benefits exist, that are derived from Infrastructure construction (packing center, teams, etc.) that are not being currently taken into account? If these benefits are being taken into account, how are they measured? What is the economic impact of the processes that add worth to selection average, classification, processing and packing? (Not ADRA?)				
Are there negative environmental effects that are caused by packing center construction activities? If there are, are environmental mitigation measures being implemented? What additional measures could be implemented? (Not ADRA?)				
Has the rehabilitation of rural roads caused an effect on the use of packing centers or other infrastructure, and/or on the cost and time of transportation for those beneficiaries? Has it facilitated access to the markets? (Not CRS or SCF)				
In terms of alliances and market links, what percent of families are benefiting from the infrastructure and road rehabilitation activities and what are the opportunities for growth in this indicator? How has it influenced the project in this indicator?				
What is the estimated volume of sales earned through trade agreements or formal contracts with buyers? Are products exported? What are the lessons learned?				
8. Are the farmers prepared with an adequate information and monitoring system of process to make production, processing and sales decisions?				
9. What have been the production, processing, and marketing activities/interventions that have contributed to the increased income of beneficiaries' families?				

Evaluation Questions	Methodology			
Microfinance and Microenterprise				
1. If microenterprises or groups of producers are supported or developed through community based organizations (CBOs), which members receive training? (Not SCF)				
2. Are there specific constraints related to reaching some CBO members? How could the activity be broadened to more fully incorporate these CBO members? (Not SCF)				
3. Are there certain groups within the target population better able to access loans, and why? If there are groups who are unable to access loans, should the program be broadened to include these groups? And how can the program be modified to incorporate them? (Not ADRA? or SCF)				
4. Are these microenterprises likely to remain in operation after the DAP terminates? If not, why not? What can be done to enhance their sustainability? (Not SCF)				
5. Have microenterprise/microfinance activities contributed directly to household food security? If so, how? Are there ways to enhance the effect of income-generating activities on household food security? (Not SCF)				
6. Are credit programs designed and implemented according to standard best practices? If not, why not? How can credit practices be improved? (Not SCF)				
7. What is the repayment rate for loans and what are the design elements contributing to this repayment rate? If the repayment rate is low, what can be done to improve it? (Not SCF)				
8. Are the applied credit conditions the most adequate for the needs of the farmer? Have financial products been designed to facilitate to the farmer in his post management phase and marketing to obtain the best possible conditions and price? (Not SCF)				
Agriculture				
What is the percentage of beneficiaries' families who have increased their income? (not CRS?, PCI? or SCF?)				
Have farmers adopted complete or incomplete technologies promoted by the project? Why?				
Are the technologies and practices being promoted well established and well suited to the local agro-ecological environments? In what manner?				
Does the use of food for work for participation in agricultural production related activities act as an incentive/disincentive to improving productivity? How? (Not ADRA)				
Are farmers able to obtain recommended inputs without program assistance (non-subsidized inputs)? If not, what would be required in order that they could do so?				

Evaluation Questions	Methodology			
Are farmers and other community groups able to maintain new productive infrastructure on their own? If not, why not? What could be done to address this limitation?				
Is the use of demonstration plots useful /replicable to needs of a farmer?				
Are DAP activities linked with entities such as the Ministry of Agriculture or the national/international agricultural research centers? How is the linkage communicated? Will these relationships extend beyond the life of the project?				
Is there a market for farmers' produce? What are the greatest access opportunities – increasing the volume of sales, improving the quality of produce, building business acumen, etc.? Does the program take adequate advantage of these opportunities?				

Cuestionario borrador para el sector de Agricultura

Adopción de nuevas technologías individuales de producción (riego, insumos, semillas mejoradas, etc.) Si hay varias, trata de todas juntas, menos la preguntas notadas.	
¿Porqué adquirió la technología?	
¿Cuál ha sido el impacto net sobre los ingresos familiares, después de substraer los costos ?	
¿Dónde se consigue la technologia?	
¿Cuánto cuesta la technologia con el vendedor? (Nota el precio para cada technologia.)	
¿Cuánto pagó Ud? Si hay una diferencia, ¿quién la pagó? (Para cada technologia)	
¿Hubo un crédito a pagar, y cuánto esta pago ya?	
¿Cuáles son/eran las condiciones del crédito?	
¿Quién entregó la technologia a su lugar?	
¿Quién la installó?	
Si Ud. quiere otro después del fin del proyecto, ¿cómo va a hacer?	

Si Ud. Tiene que pagar el costo entero, ¿Estima que vale la pena a consiguirla? (Para cada technologia)	
¿Cuáles son las ventajas de esta technologia? (Para cada technologia)	
¿Cuáles son sus aspectos negativos? (Para cada technologia)	
Adopción de nuevas technologías de producción por grupos (riego, máquinas, equipamentos, etc.)	
¿Porqué adquirieron la technología?	
¿Cuál ha sido el impacto net sobre los ingresos del grupo, después de substraer los costos ?	
¿Cuántos miembros en el grupo?	
Entonces, ¿ Cuál ha sido el impacto net sobre los ingresos de los participantes individuales?	
¿Dónde se consigue la technologia?	
¿Cuánto cuesta la technologia con el vendedor? (Para cada technologia)	
¿Cuánto pagaron Uds? Si hay una diferencia, ¿quién la pagó?	
¿Hubo un crédito a pagar, y cuánto esta pago ya?	
¿Cuáles son/eran las condiciones del crédito?	
¿Quién entregó la technologia a su lugar?	
¿Quién la installó?	
Si Uds. quieren otro después del fin del proyecto, ¿cómo van a hacer?	
Si Uds. tienen que pagar el costo entero, ¿Estiman que vale la pena a consiguirla? (Para cada technologia)	
¿Cuáles son las ventajas de esta technologia? (Para cada technologia)	
¿Cuáles son sus aspectos negativos? (Para cada technologia)	
Producción para la comercialización	
¿De cuál(es) producto(s) se trata?	

¿Los productos se venden localmente, en mercados más lejanos, o a grandes compradores?	
¿Quién organiza y realiza el transporte hasta el mercado?	
En caso de un comprador grande, ¿Quién inició la relación con los productores? ¿Quién sirve como vínculo entre los productores y el comprador?	
¿Los productores están reunidos en una estructura? ¿De qué tipo?	
Adopción de silos baratos	
¿Porqué adquirió la technología?	
¿Cómo han cambiado sus decisiónes sobre la venta de sus cosechas después de tener el silo?	
¿Cuántos quintales vendio Ud. Normalmente después de la cosecha, y cuántos guardaron?	
¿Cuántos quintales guardan ahora?	
¿Cuál era la taza de pérdidas antes ?	
¿Cuál es la taza de pérdidas ahora ?	
¿Dónde se consigue el silo?	
¿Cuánto cuesta el silo con el vendedor?	
¿Cuánto pagó Ud? Si hay una diferencia, ¿quién la pagó?	
¿Hubo un crédito a pagar, y cuánto esta pago ya?	
¿Cuáles son/eran las condiciones del crédito?	
¿Quién entregó el silo a su lugar?	
¿Quién la installó?	
Si se pierde o se roba su silo, ¿piensa Ud. Comprar otro?	
¿Cuáles son las ventajas de esta technologia?	
¿Cuáles son sus aspectos negativos?	
Conservación de recursos naturales (siembra de árboles, construcción de curvas o barreras de nivel, terrazas, etc.)	
¿Cuáles practicas han adoptado Uds. Para conservar sus tierras?	
¿Porqué?	

¿Recibieron algun incentivo en dinero o comida?	
Si plantaron árboles, ¿cuántos?	
¿Cuántos han sobrevividos después de un año o más?	
¿Cómo consiguieron las plantas?	
¿Cuánto costaron cada una?	
¿A cuánto se venden las plantas normalmente ?	
¿Qué tipo de mantenimiento hacen después de la siembra ?	
Después de la intervención del proyecto, ¿Uds. Han seguido replicando la actividad en sus tierras?	
¿Van a continuar en el futuro, después de la clausura del proyecto?	
Viveros	
¿Quién es el dueño del vivero?	
¿Cuántas plantas produció en este año?	
¿A cuánto se vendieron por unidad?	
¿Cuánto se paga para sacos? Para semillas? Para abonos?	
Después de pagar todos los costos, ¿cuál es el beneficio net en un año?	
¿Quienes son los clientes mayores – proyectos, fincas grandes, campesinos, etc.?	
¿Qué tipos de árboles produce, y cuáles son los más populares?	
Proveedores de insumos	
¿Cuáles insumos son disponibles?	
¿Quiénes son los clientes normalmente – fincas grandes, proyectos, grupos de productores, productores individuales, etc.?	
¿Un inventario normalmente está disponible, o tiene que pedir ciertos productos de fuera?	
¿Algunos de sus productos son fabricados localmente?	

Continuación de servicios al largo plazo (para cada tipo de consejos técnicos prestados por el proyecto)	
¿Hay un socio local o nacional que debe asumir esta fonción después o antes de la clausura del proyecto? ¿Quién es?	
El socio local o nacional, ¿desde cuál punto en el proyecto ha acompañado los agenes del proyecto en las actividades técnicas?	
¿Desde cuál punto ha asumido el socio local o nacional el papel principal en esta actividad?	
¿En cuál momento deben los agentes del proyecto retirarse de la actividad al favor del socio local o nacional?	
¿Cuáles son los recursos prometidos por el socio local or nacional para la continuación de la actividad (e.g. pagar los salarios de algunos extensionistas en el futuro, etc.)	
Si se trata de voluntarios de las comunidades, ¿Estan algunos ya independientes de cualquier apoyo del proyecto?	
En este caso, ¿Cómo ha sido su persistencia con la actividad ?	

In very general terms, here are the key questions to answer.

What new methods and technologies have been established through the course of the program?

Are production, processing, and marketing costs known, including those associated with new methods and new technology installation and maintenance?

Have the new production techniques, including use of new technology, led to increased production?

What evidence is there that the new methods and technology will continue to be used at program end?

Are profit margins for the various products known, factoring in all costs? How have they changed?

Sustainable activities are those in which: the systems for carrying out the subject activities are accepted and related practices are well known, proven, and established; where the related supporting activities (processing, marketing, economic conditions in the community) are also well-established and

stable; and where the 'incentives' for conducting the activities are consistently present (profitability). Are the agriculture activities sustainable?

Evaluation Questions	Methodology			
	ADRA	CRS	PCI	SC
Road reconstruction Activities				
Has the rehabilitation of rural roads had an effect on the cost and time for transportation of community members?	x		x	
Has the rehabilitation of rural roads facilitated access to the markets of community members?	x		x	
Has the reconstruction of rural roads caused negative impacts? If yes, are environmental mitigation measures being implemented?	x		x	
Are there unexpected additional direct or indirect benefits derived from the reconstruction of rural roads?	x		x	
Are the producers and other community groups (beneficiaries) able to maintain rehabilitated roads on their own? If not, why not?	x		x	

Food for Work Activities				
Specific Questions				
Do food for work activities complement or compete with family demands in other production activities? (ADRA Only)				

Natural Areas Management				
Specific Questions				
1. Are the any positive environmental impacts derived from environmental protection activities? (ADRA Only)				
2. Are there direct benefits within the communities derived from the implementation of the following environmental conservation activities: a) reforestation, b) forest management, c) soil conservation? (ADRA Only)				

Health and Nutrition Activities

Evaluation Questions	Methodology

	ADRA	CRS	PCI	SCF
Water and Sanitation				
Specific Questions				
Does the design and implementation of water systems and latrines adhere to local technical codes and guidelines? If not, why not?	x		x	
Are there additional direct or indirect benefits derived from construction of water systems and latrines that are not currently being captured?	x		x	
Are there any unintended negative environmental impacts stemming from infrastructure activities (water systems and latrines)? If so, Are sustainable mitigation measures being implemented? What additional measures can be implemented?	x		x	
Does the DAP include adequate complementary messages concerning water use and sanitation practices?	x		x	

Early Childhood Development
Specific Questions
1. Are the early stimulation activities in the CRNs appropriate to local conditions and accepted by participants? (SCF Only)
2. Are there positive changes in the development of participating children? (SCF Only)
3. Are the kinds of activities and training of mothers/parents in early childhood development techniques sustainable? (SCF Only)

Improved Health and Nutrition of Pregnant Women and Children less than 5 years of age
Did the community participate in the design and implementation of the activity? (Not ADRA?)
Does the community receive information about the program and have an opportunity to make comments to the implementing agency?
Are there clear linkages and coordination with public and private health and social services in the community?
How successfully has the activity leveraged governmental preventative and curative health, water and sanitation and related social services?

To what extent do coordination committees ensure people's involvement in the program, with due consideration for gender, age, ethnicity, and socio-economic status?
Do the interventions reflect the problems facing the community?
What has been the population coverage of the intervention? Could it be improved?
What is the use and success of standard protocols for prevention and management of childhood and maternal illness (such as IMCI, Immunization, CDD, MINPAK, STI/HIV/AIDS. MTCT, EOC, child spacing etc.)?
How successfully has the program been in protecting the nutrition/health status of specific groups such as young children, mothers, pregnant women, the elderly, etc.?
How well has the program been able to adapt to changing needs in the community?
Are staff able to provide advice in regard to safe and appropriate uses of the rations, including substitution with local commodities, in the event of graduation or exit?
Are there clearly written and applied guidelines for targeted feeding, including appropriate breast and young child feeding?
Are there appropriate and applied protocols for referral and treatment of severely malnourished children?
Are staff demonstrating the ability to identify and respond to key micronutrient deficiencies through clinical and/or biochemical examinations?
What is being done to improve the capabilities of the staff and local partners to respond to community needs and meet the objectives of the program?
How effective has the exit or graduation strategy been?
Are staff qualified and aware of the purpose and methods used in the program?
Are staff responsible for nutrition, health assessments, and care trained and supervised in the necessary techniques for children and mothers?
By what process were the health and nutrition behavior change and communication (BCC or MINSA) materials developed, tested and applied?
Are health and nutrition BCC or MINSA materials appropriate – tailored to the user, actionable, accurate and linked to growth promotion messages (where growth monitoring is being implemented)? Which materials need strengthening? How?
Are the program eligibility and graduation criteria appropriate, given the objectives and assumptions of the program? If not, how should it be modified?
What is the compliance with the growth promotion sessions?
What possibility, if any, is there for program "voluntary" health and nutrition promoters to receive incentives, monetary or other, from their communities to continue their work after the program is completed?
Is there a health and nutrition volunteer attrition problem? If so, why do they drop out and what can be done to reduce the rate of attrition?
Have the AIN-C instruments and procedures for the prevention and management of child illnesses been found to be useful?
How well does the reference and counter reference system function with regard to children with unsatisfactory growth for a period of two months?

Are the personnel that work in AIN-C adequately trained, attend the monthly sessions, and perform home visits?
Is the beneficiary to extensionist/health volunteer ratio and contact frequency adequate for the type of behavior change envisioned in the DAP?
Describe the need for Social Medicine Outposts in the communities. (ADRA Only)
What is the significance of the quality of MINSA health care? (ADRA Only)

Cross Cutting Activities

Evaluation Questions	Methodology			
Improved Organizational Capacity of Communities				
Is the program effectively developing the capacity of counterparts and/or partners? If not, how could the design or implementation be altered to strengthen partner's capacity?				
Is the program effectively enabling and/or developing the capacity of beneficiaries? If not, how could the design or implementation be altered to improve capacity strengthening?				

Improved Functional Literacy for Adults
Specific Questions
Are the program eligibility criteria appropriate, given the objectives and assumptions of the DAP? If not, how should they be modified? (PCI Only)
3. What is the role of the organizations involved (Community organization, MECD, CS's) in the literacy program implementation directed at volunteers within the communities? (PCI Only)
4. What is the level coordination, collaboration, and structure organized to develop the Literacy program? (PCI Only)
5. In what manner have trainings been given to participants with regards to the following three levels: utilized methodology, materials and application of the educative process? (PCI Only)
6. What have been the eligibility criteria following the program objectives? (PCI Only)
What have been the criteria for graduation (or exit of program) together with the involved organizations (Community organization, MECD, CSs)? (PCI Only)