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MID-TERM EVALUATION

**FY 1997-2001 BOLIVIA TITLE-II
DEVELOPMENT ASSISTANCE PROGRAM**

Prepared for

Adventist Development and Relief Agency (ADRA/Bolivia)

Food For The Hungry International (FHI/Bolivia)

Project Concern International (PCI/Bolivia)

USAID/Bolivia

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EXECUTIVE SUMMARY

The Bolivia PL 480 Title II program involves three Cooperating Sponsors (CS) the Adventist Development and Relief Agency (ADRA), Food for the Hungry International (FHI), and Project Concern International (PCI) It has four components agricultural production focused on technology transfer, marketing, farm infrastructure and irrigation, maternal and child health (MCH) community water and sanitation, and food for education

In Health, findings were that PCI has developed good collaboration with the Ministry of Health (MOH), PCI also emphasizes the importance of communication in the native language However, a good information system is not being used by the MOH or the community FHI has developed an excellent five-year intervention strategy coupled with a sound community education program, however, budget cuts have adversely affected FHI's MCH program ADRA has a good educational program linking community health workers (CHWs) to the MOH, how these activities will continue after ADRA leaves is unclear

In Water and Sanitation, findings were that PCI has two fundamental weaknesses, lack of a strategic focus and low budget support FHI has a strong cadre of water staff and a very good product ADRA's activities in W&S are small compared to other projects and receive low budget support All three CSs are successfully promoting village water committees and tariffs One weakness is unfamiliarity with Bolivian norms of rural water system construction, another is that not much attention is being paid to the issue of sustainability In summary, FHI is delivering a high quality product PCI and ADRA need to dedicate more budget, staff and longer presence in the community to improve their W&S portfolios

In Agriculture, findings were that a major strength of PCI is its institutional collaboration, a weakness is operation and maintenance of irrigation systems FHI's greatest strength is a five-phased approach to activities in each community and strong technical staff, however, FHI appears to be relatively less disposed to collaborate with other institutions One ADRA strength is a solid basis on community plans, another has been food-for-work activities, a weakness involves infrastructure projects All three CSs demonstrate weaknesses in marketing In summary, the agricultural segment of the DAP is fundamentally sound Each CS has a different approach, but all address the root causes of food insecurity

In Food for Education, there were not many program differences Warehouse management and food distribution take place rather smoothly and there were numerous comments that the ration could be increased The environmental damage of cooking the ration with firewood in tree-scarce Bolivia could be considerable Some schools serve the 'breakfast' at 11 30 with good results In almost every school in one grade or another, some negative factor is affecting girls' enrollment and, until now, the CSs have not directed attention to this issue In summary, the FFE component is accomplishing program goals overall, girls' enrollment and retention are up, and school desertion is down for both sexes

Promulgation of the Law of Public Participation has given the CSs more opportunity to interact with municipal authorities, and good coordination, interchange and project financial support are being achieved All CSs are working to foster community participation and linkages with local institutions Environmental awareness is growing in each of the CSs

The evaluation brought to light a number of managerial issues. Chief among them are the recommendations that senior leadership in each CS travel with more frequency to the field, also, that each CS hire an organizational development consultant to help deal with issues of rapid portfolio expansion. Staff morale, work performance and 'burn out' are issues in several CSs, as are decentralization, discipline, internal communication and human resource management. Several comments are made regarding monetization and Call Forwards.

Key recommendations in **Health** are that PCI scale down to a hundred-or-so most needy communities for the duration of the DAP and hire additional staff to work in them, and that it include MOH auxiliary nurses in training events. The ET recommends that FHI develop a stronger relationship with the local MOH and include auxiliary nurses in its training events, also that it increase its MCH field personnel. For ADRA, the ET recommends that it hire auxiliary nurses who know the language and reinforce its training of CHWs and other volunteers.

Key recommendations in **Water and Sanitation** are generally similar for PCI and ADRA that each should assume full technical oversight for the completion of water systems and that high-quality water system be built, budgeted at approximately \$100 per capita. For FHI, recommendations are that it establish a higher threshold of households to be eligible for individual household taps and that it consider reducing the number of water engineering staff on its payroll, to dedicate some of those resources to health. A recommendation for all three is that each subcontract out its water operator training.

Key recommendations in **Agriculture** are similar for the three CSs that each hire permanent staff with formal training in marketing, that each strengthen a market information system, and that each define with the community changes that should take place before the CS phases out.

Key recommendations in **Food for Education** for all three CSs are that each co-finance gas stoves for each school that does not have one, that the ration should be expanded to include lentils two days a week, that each CS study what is happening to girls' enrollment in selected schools, and that each CS direct efforts to improve the *effectiveness* of school education.

The Bolivia Title II program is achieving many of its objectives as demonstrated by an enhanced monitoring system. Concentrating resources in areas of greatest poverty has brought significant improvements in programming impact. It is also clear that the synergy originally envisaged in the DAPs between health, water, agriculture and education is achieving important goals.

One of the indirect outcomes of the mid-term evaluation has been a sharing among CSs rarely achieved in Bolivia. Such sharing should not be a 'one-off' event, thus the evaluators warmly endorse the MCH program retreat to be held at the initiative of USAID/B on July 5, 1999. Several other events are recommended also. Finally, the evaluators were impressed with the USAID Mission's ability to focus on key management issues while not interfering with the day-to-day operations of the Title II CSs. This relationship between *partners* has not been widely seen in Latin America and is clearly moving in the right direction.

ABBREVIATIONS

ADRA	Adventist Relief and Development Agency
ARI	Acute Respiratory Infection
CARITAS	Catholic Charities of Bolivia (NGO)
CAI	Comite Local de Information— (municipal health review committee)
CERES	Centro de Estudios de la Realidad Economica y Social de Bolivia (local NGO)
CCC	Community Coordinating Committee
CCZ	Zonal Coordinating Committee
CCH	Child & Community Health Project (expired)
CHW	Community Health Worker
CS	Cooperating Sponsor
DAP	Development Activity Proposal
<i>Desarrollo Comunitario</i>	— Local NGO specializing in community promotion activities
DHS	National Demographic and Health Survey
ET	Evaluation Team (Sullivan, Johnson, McIntyre and NGO staff accompanying)
FFE	Food For Education component
FFW	Food For Work
FHI	Food for the Hungry, International
GOB	Government of Bolivia
IEC	Information, Education, and Communication
JICA	Japanese International Cooperation Agency
MCH	Maternal and Child Health
MOH	Ministry of Health
NGO	Non-Governmental Organization (used interchangeably with PVO, q v)
O&M	Operations and Maintenance (in potable water and irrigation systems particularly)
ORS	Oral Rehydration Salts
ORT	Oral Rehydration Therapy
PAA	Previously Approved Activity
<i>Persona juridica</i>	--Bolivian Articles of legal incorporation
PCI	Project Concern International
PDC	GOB Community Development Program
PM	PL 480 Title II Monetization Program
PVO	Private Voluntary Organization (see also NGO)
RIG	Regional Inspector General
SILOS	Servicio Local de Salud (local municipal/MOH health committee)
SNIS	National Epidemiological Surveillance System
TDA	Technically Defined Area (ADRA management unit)
W&S	Water and Sanitation
USAID/B	The United States Agency for International Development in Bolivia

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The team is also grateful to Dudley Conneely and Jorge Cueto of PCI, Alfredo Fernandez and Maria Eugenia Lopez of FHI, and Gunther Wallauer and Plinio Vergara of ADRA for their work in preparation for this mid-term evaluation. The presentations given by each Cooperating Sponsor and the project documents provided were helpful to the evaluators in getting a quick start on the evaluation

The Evaluation Team would also like to express our appreciation to the dedicated field staff of PCI, FHI and ADRA who accompanied the team on the site visits, sometimes on arduous field work, and to those who participated in the inter-agency teams for each program component. We also express a debt of gratitude to all those behind the scenes who contributed to the smooth functioning of the difficult logistics operations of planning and carrying out multiple travel schedules for up to 15 people. It all went wonderfully smoothly

It is our hope that the sharing of experiences, knowledge and lessons learned during the field visits will be the beginning of a new phase of inter-agency collaboration and friendship which will result in the continuous improvement of the quality and effectiveness of each program. We believe that the Title II Bolivia Program can not only surpass its goals, but also generate innovative approaches to reduce food insecurity through the combined efforts of all partners. We applaud the openness and willingness to learn from each Cooperating Sponsor, and the support provided by USAID that made this multi-institutional evaluation a reality

Naturally, the opinions expressed in this document reflect those of the Evaluation Team and do not necessarily reflect the opinions of USAID/ B or any one of the Cooperating Sponsors

MID-TERM EVALUATION FY 1997-2001 BOLIVIA TITLE II DEVELOPMENT ASSISTANCE PROGRAM

1.0 INTRODUCTION

Bolivia has witnessed far-reaching economic and social reforms since a fully democratic government was instituted in 1985 with the election of Dr. Victor Paz Estensoro as President. Nonetheless, one of every three Bolivians still lives in extreme poverty without sufficient incomes to assure themselves of a minimally adequate diet. Fighting poverty is attacking the root cause of food insecurity.

Bolivia's Title II program will reduce high food insecurity and its manifestations at the household level through poverty alleviation by improving the **availability** of food through increases in agricultural productivity, enhancing **access** to food by raising household incomes through improved marketing, increasing long-term income earning potential through a reduction in school drop out rates, and improving biological **utilization** of food through integrated health, education, and water and sanitation interventions.

The PL 480 Title II program in Bolivia currently involves three Cooperating Sponsors (CS): the Adventist Development and Relief Agency (ADRA), Food for the Hungry International (FHI), and Project Concern International (PCI), all implementing five-year (FY 1997-2001) Development Assistance Projects (DAP). Originally there was a fourth Cooperating Sponsor, CARITAS, but that CS dropped from the program in FY 1998. A new CS, CARE, has been added this Fiscal Year.

The Title II program has three fundamental precepts:

- A development rather than humanitarian assistance orientation. The Title II program has evolved from a primarily humanitarian assistance program delivering food, to a genuine development program. Food and financial resources support community and municipal efforts to create opportunities for households to achieve sustainable improvements in income and food security. The combination of food and non-food resources used for training, education, technical assistance and infrastructure establishes the foundation for sustainable development.
- Specific geographic focus in food-insecure areas. The 1997-2001 DAPs are geographically focused on areas of relatively greatest food insecurity as defined by a Cariaga and Cariaga poverty study in 1996. For the purposes of Title II, USAID/Bolivia defines food insecurity as insufficient availability of food at the household level, insufficient household income for market purchases of food, and inadequate biological utilization of food (due to poor health) such that family members do not have an adequate diet. Bolivia's food insecure areas were identified in the Cariagas study using socioeconomic data to classify all provinces based on

existing level of food insecurity (very low, low, moderate, high and extreme)

- **Emphasis on sustainability** Sustainability is the degree to which interventions are carried out in ways that build the basis for continued progress and actions after the end of CS involvement. The Title II program achieves sustainability by securing the involvement and collaboration of municipalities, other local institutions and community participants in all development activities. Project implementation requires an inter-institutional agreement between the CS, the relevant municipal government and the local community, and each of the three must contribute to project activities, either in cash, materials or labor. The Popular Participation Law of 1994 has greatly enhanced the sustainability of the program because for the first time, rural and mainly indigenous populations have been given the political power and some financial resources to fund needed public projects and services. By working through municipalities and obtaining counterpart contributions ranging from 10 to 50 percent, the CSs are ensuring that local governments will be able to continue similar interventions after CSs leave the area. Active community participation and training are also essential to sustainability.

The Title II program has four program elements

- An Agricultural Productivity component focused on technology transfer, marketing assistance (including rural access roads), family farm infrastructure (greenhouses and silos), and community micro-irrigation
- A Maternal and Child Health (MCH) component which includes immunization campaigns, the detection and treatment of diarrheal diseases, upper respiratory infections, the provision of basic medical services, growth monitoring of children below the age of five, monthly distribution of food rations to eligible beneficiaries, and nutrition and health education
- A Community Water and Basic Sanitation (W&S) component constructing community and family water systems, community sewage systems, latrines and showers
- A Food-for-Education (FFE) component designed to meet a fundamental prerequisite of economic growth and an educated, well-trained labor force, by providing incentives for children to stay in school, and thereby expand their economic opportunities

This Mid-term Evaluation was a process evaluation and assessed each CS's program performance and chosen approach. Specifically, the evaluation examined program performance during the first two years of the DAPs, including actual impact on target groups, the need for adjustments in program strategy and planned activities, and the capacity to produce longer-term, development results which will have a sustainable impact on incomes, health status and food security. The complete Scope of Work of the evaluation is attached as Appendix A.

2.0 METHODOLOGY

Introduction

The Bolivia Title II Mid-term Evaluation was conducted by an Evaluation Team (ET) of three expatriate consultants during a four week period from June 6 to July 3, 1999. Curricula of two of the team members are attached at Appendix B. The team spent its first week in La Paz, developing a team work plan and interview instruments, and conducting initial interviews with the three NGOs and with USAID/B. Weeks Two and Three were spent in heavy field travel, described below. Week Four was spent in the preparation of this report.

Team Planning Meeting

A team planning process adapted a step-by-step approach developed by WASH that allows team members to understand and shape the final product. These steps were (1) Introduction to the program, (2) History of the grants and current status, (3) Chief clients for the report, (4) Scope of Work, (5) The End product of the review, (6) Introduction of team members, (7) Developing a work plan, (8) Developing instruments, (9) Administrative and trip planning details.

Review of Documents

Numerous documents were reviewed. Key among them were each Cooperating Sponsor's Development Activity Proposal (DAP), FY '98 Annual Results Reports, FY '99 Annual Plan (PAA) and other project documentation. In addition, several regional offices prepared briefing papers to assist the team's understanding of the project. The complete list is included in the Bibliography.

Interviews

Over two hundred interviews were conducted during the evaluation. Chief groups interviewed were senior leadership of the three NGOs, USAID/Bolivia staff, NGO field personnel including agronomists, engineers, health personnel, and community promoters, and a large number of community members. Some interviews were conducted one-on-one for approximately one to two hours, others were conducted in groups and lasted approximately one hour. Focus groups with nurse auxiliaries (male and female), village women, farmers and project participants usually took about two hours. Appendix G lists most interviewees.

Field Travel

A demanding field travel schedule was prepared in order to give the ET sufficient exposure to each CS's field operations. Fourteen days of field travel took place, with one day of rest half way through. The complete travel schedule is attached as Appendix C. Field-trip interview instruments were prepared beforehand and are attached as Appendix H. In this grueling travel,

colleague professionals from each of the CSs as well as USAID/B staff accompanied the three ET members in their separate travels, and contributed greatly to the ET's being able to understand and appreciate the nuances of complex technical issues. As will be noted at the end of this document, one of the most positive effects of the Mid-term Evaluation-- though perhaps an unanticipated one-- may be the growth of camaraderie among NGO technicians of different organizations, a sense of common purpose and vision, and a new willingness to share institutional learning among the three.

Briefing Workshop

A briefing workshop was held on July 1 for senior management of the three CSs and technical staff. USAID/B also participated. The purpose of the workshop was to share the draft report and to solicit feedback. The full text of the draft document (in English) had been distributed to USAID/B and CSs the night before the workshop, and working papers (in Spanish) with key conclusions and recommendations were distributed to workshop participants to facilitate the interchange.

Final Report

The final report was prepared based on input received as a result of the briefing workshop and subsequent comments received by e-mail.

3.0 RESULTS SECTION

3.1 MATERNAL AND CHILD HEALTH

3.1.1 General Problem Statement

Food insecurity is a serious problem in the rural areas of most Bolivian provinces, where inhabitants are unable to meet their nutritional requirements due to poor agricultural production, low per capita income, geographic isolation, lack of basic services and limited knowledge and practice regarding health and nutrition. Indicators that measure the capacity of a country to meet the nutritional needs of the population include infant mortality, chronic malnutrition, maternal mortality and low birth weight.

Infant and maternal mortality rates in Bolivia are among the highest in Latin America. The 1998 DHS estimates infant mortality at 67 per 1,000 live births, rising to 90 per 1,000 in rural areas. Maternal mortality rates are high, estimated at an alarming 563 per 100,000 live births for rural areas and 262 for the urban population (1994 DHS). The chief causes of infant mortality are diarrhea and acute respiratory infections complicated by malnutrition.

According to the 1998 DHS, chronic malnutrition for Bolivian children under three years of age (-2 SD height-for-age) is estimated at 26.5% for the country and rises to 35.6% in rural areas. In Potosí, where many of the poorest provinces are located, almost half (49.2%) of all children under 3 suffer from chronic malnutrition. Some 13.3% of Bolivian children have global malnutrition (-2 SD weight-for-age), while only 1.6% suffer from acute malnutrition (-2 SD weight-for-height).

Preventive health services are provided by the Ministry of Health and NGOs working among the most needy population. However, a large segment of the population does not receive these services due to cultural and geographic barriers and the limited capacity of the public and private sector to reach dispersed rural populations. According to the 1998 DHS, only 26% of women received two or more doses of tetanus toxoid vaccine, and 30% received no prenatal care, 46.7% in rural areas. Regarding immunization coverage, only 25% of children age 12-23 months have received the complete vaccination schedule.

The 1998 DHS estimates the two-week prevalence of diarrhea and acute respiratory infections (ARI) for children under three years of age at 24.8 and 25.8 respectively. Diarrhea was treated with ORS packets or home mix in 47.6% of the cases, and 47.2% of the ARI cases were referred to a health service provider. The 1998 DHS indicate that the average duration of exclusive breastfeeding is 2.3 months, and the duration of breastfeeding is only 17.5 months, both well below the recommended duration.

The three CSs have included specific objectives and strategies in their DAPs to integrate supplemental feeding with health education programs and provision of preventive services to improve food security in the poorest provinces of Bolivia.

3.1.2 General Objectives and Strategy

The objective for the Maternal Infant Health Component is to improve the health and nutrition of children under 5 years of age and pregnant and lactating women by complementing their diet with a monthly food ration and providing primary health care and community health education. Each CS implements a number of interventions as part of its MCH program: growth monitoring and nutrition, control of diarrheal diseases and respiratory infections, immunizations, de-worming, breastfeeding promotion, pre- and post-natal care, clean births and, in some cases, family planning. The size of the food ration has been standardized among the CSs. Malnourished children under five and pregnant and lactating women are eligible to receive 9 kg each per month. Following is a summary of the overall objective and strategy of each CS.

Project Concern International seeks to reduce malnutrition among children under five years of age and to reduce the number of newborns with low birth weight. PCI implements the maternal child health program in an average of 250 communities per year in the Cochabamba and Potosí regions, targeting children under 5 years of age and pregnant women. All children under five years and all pregnant and lactating women are eligible to receive a ration each during a 12 month period. PCI plans to serve 35,000 children and 14,000 women during the Life of Project.

Food for the Hungry International's principal program objective is to decrease morbidity and malnutrition of children under five years through education, training and growth monitoring combined with the provision of food. FHI carries out activities in three components--child survival, maternal health and nutrition education. MCH interventions are implemented in each community for a five-year period. Only children with low weight for age (-1 SD) receive a food ration for a period of 6 months, with the option to continue for an additional six months if the child continues to be malnourished. Pregnant women are eligible to receive a ration for a period of up to 15 months, the nine months of pregnancy and six months of lactation. Long-term change in knowledge, attitudes and practices is sought through health and nutrition education directed to three groups: 1) community health workers, 2) traditional birth attendants, and 3) women and men in general. FHI will reach 8,655 women age 15-49 and 7,505 children age 0-59 months during the five years.

ADRA's MCH program focuses on primary health training and the provision of basic preventive services. ADRA field personnel provide these services and coordinate with the MOH to receive ORS packets, vaccines, Vitamin A, and ferrous sulfate. ADRA provides equipment and basic supplies for MCH centers in strategic locations, and purchases basic medicines as needed. The physical infrastructure is either built by ADRA or lent to the MCH program by the municipality. ADRA implements the MCH program for 30 months in each community, after which time the MCH centers are ceded to the communities to promote sustainability. ADRA implements three educational programs: 1) nutrition and growth monitoring, 2) health promotion and early childhood development, and 3) family life and home economics. ADRA plans to reach 20,400 children under five and 10,200 mothers during the LOP.

3 1 3 Summary of Data by Cooperating Sponsor

3 1 3 1 PCI Summary of Data

The following table shows progress toward selected project objectives, as measured by PCI's monitoring system (See Appendix E for a complete set of indicators, targets and annual results)

TABLE ONE· PCI MCH PERFORMANCE INDICATORS

INDICATOR	BASELINE 1996/7	TARGET 1998	RESULTS 1998
% of children under 2 years of age in growth monitoring program who gained weight in the last 3 months	29 0	80 0	67 0
% of children age 24-60 months with chronic malnutrition			
Males	N/A	48 0	46 0
Females	N/A	51 0	51 0
% of children under 1 year of age receiving third dose of DPT/total number of children receiving at least one dose of DPT (continuity)	8 0	80 0	53 0
% of infants less than 6 months who were breastfed exclusively during the last 24 hours	27 0	69 0	67 0
% of children under 5 years of age with diarrhea in the last 2 weeks who were treated with ORT or increased fluids	10 0	40 0	72 0
% of pregnant women who make pre-natal visits who have at least one visit before the 5th month of pregnancy	15 0	67 0	45 0

PCI shows progress in the above indicators in reference to baseline data, however it is short of its targets in nutrition, immunization and pre-natal care. In order to reach its ambitious DAP targets mentioned above, 35,000 children and 14,000 women, PCI has adopted a methodology that takes it to different communities every year. A concern with comparing yearly results with baseline data is that there is little or no continuity in reporting such numbers. Also, due to problems with the Calls Forward, PCI was not able to distribute food for six months during 1998. This fact, coupled with the short duration of PCI MCH interventions (12 months), could be reasons for the lack of improvement in chronic malnutrition. PCI's twelve-month intervention period makes it difficult to do follow-up of children for the DPT continuity indicator, and to provide on-going education for mothers and achieve behavior change regarding pre-natal visits.

3 1 3 2 FHI Summary of Data

The following table shows progress toward selected project objectives, as measured by FHI's monitoring system

TABLE TWO FHI MCH PERFORMANCE INDICATORS

INDICATOR	BASELINE 1996/7	TARGET 1998	RESULTS 1998
% of children under 2 years of age in growth monitoring program who gained weight in the last 3 months	75 0	78 0	72 0
% of children age 24-60 months with chronic malnutrition			
Males	54 0	38 0	45 0
Females	51 0	38 0	43 0
% of children under 1 year of age receiving third dose of DPT/total number of children receiving at least one dose of DPT (continuity)	33 0	62 0	75 0
% of infants less than 6 months who were breastfed exclusively during the last 24 hours	27 0	50 0	69 0
% of children under 5 years of age with diarrhea in the last 2 weeks who were treated with ORT or increased fluids	37 0	81 0	91 0
% of pregnant women who make pre-natal visits who have at least one visit before the 5th month of pregnancy	18 0	40 0	50 0

Regarding FHI's progress toward 1998 targets, it is important to note that the increase in the level of poverty also affected children's nutritional status, in spite of program efforts to rehabilitate malnourished children. A marked decrease in agricultural production was seen in the entire Potosi area as a result of the El Niño drought, which may have augmented the dilution of food within the family. Chronic malnutrition reached a high of 69% in children in the severely-affected Potosi area. Results for the other indicators show the effectiveness of the MCH program, as immunizations, exclusive breastfeeding, and use of ORS for diarrhea cases have increased, and pre-natal visits have improved dramatically in comparison to the baseline.

3 1 3 3 ADRA Summary of Data

The following table shows progress toward selected objectives, as measured by ADRA's monitoring system (See Appendix E for a complete set of indicators and annual targets and results.)

TABLE THREE ADRA MCH PERFORMANCE INDICATORS

INDICATOR	BASELINE 1996/7	TARGET 1998	RESULTS 1998
% of children under 2 years of age in growth monitoring program who gained weight in the last 3 months	23 0	52 0	53 0
% of children age 24-60 months with chronic malnutrition			
Males	N/A	39 0	42 0

Females	N/A	38 0	41 0
% of children under 1 year of age receiving third dose of DPT/total number of children receiving at least one dose of DPT (continuity)	68 0	19 0	53 0
% of infants less than 6 months who were breastfed exclusively during the last 24 hours	23 0	68 0	66 0
% of children under 5 years of age with diarrhea in the last 2 weeks who were treated with ORT or increased fluids	9 0	65 0	55 0
% of pregnant women who make pre-natal visits who have at least one visit before the 5th month of pregnancy	31 0	58 0	41 0

ADRA shows improvement in the above indicators in relation to baseline data. ADRA attributes progress in the nutrition indicators to its intensive educational program with weekly 2.5 hour sessions which include practical cooking demonstrations and topics on food combination for both locally and donated food, as well as modules on the three food groups. The MOH did not provide ADRA with sufficient ORS packets or vaccines during 1998, which was a factor in ADRA's not reaching its targets for treatment of diarrhea and immunizations. ADRA reports that cultural barriers continue to be a deterrent to women seeking pre-natal care.

3.1.4 Findings by Cooperating Sponsor

3.1.4.1 PCI Findings

Since the approval of the DAP in 1997, the PCI Title II program has changed significantly. The biggest change in PCI's MCH program was the expansion as of October 1998, into nine new provinces that were previously covered by CARITAS. The new target area includes thirteen provinces with a population of 538,940, almost five times the size of the originally proposed population.

In the Department of Cochabamba, the ET made field visits to ten communities representing five of the thirteen provinces where PCI works. In seven of the communities, PCI was currently implementing the MCH program, and in three, PCI had finished activities in October 1998. Interviews were held with five health service providers including the regional and district directors, and the mayor of Sacabamba. Approximately three hundred mothers participated in ten group discussions. Interviews were held with twenty-one Community Health Workers (CHWs) and fourteen community leaders.

In Cochabamba, PCI has four supervisory staff (two physicians, a nurse and a nutritionist), each of whom is assigned a specific geographical area. Twelve health facilitators (auxiliary nurses) cover 12-14 communities each and report to their respective supervisors. The ET observed great dedication among the health facilitators, however they face more challenges than can reasonably be surmounted. Last year's communities continue to make requests for preventive services and

education, the number of current communities per facilitator is too large, and logistic support is not optimal. The facilitators use old motorcycles that often are in the shop for repairs.

PCI signs agreements with community organizations, municipal governments, and the Ministry of Health to determine the role of each party in the MCH program. The MOH contributes vaccinations and child health cards and provides referral services at 'sector' and 'area' health services. PCI health facilitators monitor children's growth and provide vaccinations and education in target communities. The health facilitators work directly with the area hospital. The field visits confirmed excellent working relationships between PCI and the MOH.

Community education and basic health services are provided by volunteer community health workers (CHWs). PCI provides initial training for groups of volunteers, and the health facilitator is responsible for on-going training in the communities. The health facilitators visited did not have educational material on hand, nor does PCI have a physical space in each community to place educational materials. The facilitators also indicated that time for educational activities is minimal due to the large number of communities to be reached and the duties of weighing babies, giving vaccines (either alone or in conjunction with the MOH nurse) and filling out forms for the information system.

Great disparity was observed among twenty-one CHWs regarding knowledge of health messages, danger signs for pneumonia and diarrhea, and referral procedures. In the areas where CARITAS and/or CCH had been active and the CHWs were linked to a health service, a high level of knowledge was seen. (See questionnaire in Appendix H). CHWs with one year or less of training had difficulty answering the questions and showed confusion regarding the proper use of paracetamol and cotrimoxazol for the treatment of pneumonia.

Mothers in communities with previously trained, active CHWs and closely connected to health centers showed greater knowledge than those in more distant areas or where the CHWs were either new or inactive. In all mothers' groups, food donations appeared to be the key motivation for participation. Few mothers who did not receive food attended the meetings. The three mothers' groups that are not part of the FY 1999 program requested that food donations be continued, and that the PCI facilitator or the MOH auxiliary nurse visit periodically to provide education, vaccinations and growth monitoring. In two of the communities, the MOH nurse will take over, and in the other no support will be provided by the MOH.

3.1.4.2 FHI Findings

FHI will cover three project zones between 1994 and 2006 in the departments of La Paz, Cochabamba and Potosí. Approximately 8,655 women age 15-49 and 7,505 children will benefit from MCH activities during a five-year period under the Title II program. FHI is currently serving 99 rural communities in Cochabamba and Potosí and La Paz. Children targeted to receive food rations increased this year, as FHI decided to provide food for all children whose weight for age is -1 SD, rather than only children with -2 SD weight for age. FHI health personnel include a

national program manager, three regional supervisors and seven health facilitators. Due to budget cutbacks, the MCH program suffered a 30% reduction in staff in 1999, while the target population was reduced only by 2.8%.

Field visits were made to ten communities, four in Cochabamba and six in Potosí. Interviews were held with six health service providers and the mayor of the municipality of Ravelo, Potosí. Approximately 180 women and 30 men participated in ten group discussions. Interviews were held with thirteen CHWs and six community leaders.

Observations during the site visits revealed good community organization in health. FHI helps the community build a community health center where primary care activities and education take place. There is a chart on the wall showing an annual calendar of activities by month and person/group responsible for each activity. The FHI health facilitator prepares the chart that is then managed by the CHWs and mothers to guide their activities. The MOH maternal health card and the nutrition surveillance form have been reproduced in poster size and placed in each center. These materials help CHWs and mothers understand nutritional charting and the use of the growth card. Also placed on the wall is a large annual health information poster. The poster shows all women and children in the community who are enrolled in the MCH program. Color codes are used to denote which children have received the complete vaccination schedule, what weight-for-age group they are in and whether they had diarrhea or a respiratory infection in any given month. Information is presented for each woman regarding tetanus toxoid vaccine, pre-natal and post-natal care, pregnancy and lactation.

In the Potosí area, community leaders and men in general are aware of and support health activities. Most CHWs are men and belong to a CHW association. One community leader said "The women have awakened before they didn't talk, and now they do." The majority of CHWs who had been active for a year or more showed adequate knowledge of educational messages, danger signs and treatment procedures for diarrhea and pneumonia.

Mothers' groups in Potosí and Cochabamba were able to explain correctly the health behaviors recommended by the FHI facilitator and the CHWs. The men who were present during the group interviews indicated that their wives are practicing new behaviors, especially hygiene in the home. Traditional birth attendants, women and their husbands are trained to use a clean-birthing kits. Some husbands explained their use of the clean birth kit during a recent home delivery.

In Cochabamba, coordination between the FHI health facilitator, CHWs and schoolteachers took place. The FHI facilitator gave health talks to schoolchildren, and the teachers supported the CHWs in the monthly mothers meeting.

Interviews with MOH health providers indicated that FHI presents information to the auxiliary nurse that is included in the SNIS (national health information system), FHI personnel also participate in the area CAI (information analysis committee). Coordination and agreements take place mainly at the district and area levels, rather than the regional level.

Coordination is especially good in the municipality of Ravelo, where the mayor is very receptive to assigning resources for health. A considerable sum has already been allocated to the hospital for the Basic Health Insurance Plan. Reports are not provided to the municipality regarding health activities undertaken by communities, health services or NGOs in the municipality.

3.1.4.3 ADRA Findings

ADRA implements its MCH program in the departments of La Paz and Chuquisaca. To do so, ADRA negotiated and signed a project contract (*convenio*) with the Ministry of Health at the national level and the District level, with municipalities, and with the District local health services. In 1998 ADRA implemented activities at MCH centers in 100 rural communities and 107 peri-urban areas of El Alto City, Viacha and Carmago. ADRA defines geographical areas by population of 2,000 (8-10 communities), and this unit is called a TDA (technically defined area). In the Chuquisaca region visited by the ET, there are eight TDAs which are served by a health coordinator, eight field technicians (all physicians or registered nurses), two home economics promoters and two early childhood development technicians. Observations during the field visits indicate that the health personnel have excellent logistical support and the number of communities per technician is manageable.

The ET visited six communities, the Camargo District Hospital, the San Lucas Area Hospital and the San Lucas mayor's office. Three municipal officials were interviewed including the mayor, and six health service providers including the district director. Approximately 180 women and 30 men participated in group discussions. Interviews were held with eight community leaders, sixteen CHWs, eleven home economics promoters and thirteen early childhood development promoters.

The CHWs trained by ADRA are linked to the local health system and carry a credential issued by the hospital that gives them status in the community and allows them to receive free health care. Many of the CHWs interviewed were newly trained by ADRA and had some difficulty regarding identification of danger signs for dehydration and pneumonia and correct use of basic medicines for children with respiratory infections. The CHWs had received food rations during the first year of project implementation as compensation for their work and were adapting to the new regimen of purely volunteer work. ADRA has some exceptional CHWs who were well grounded in basic health education messages, danger signs and treatment procedures. One CHW studies the book "Where There Is No Doctor" in his free time and is very motivated.

The majority of the participants in the mothers' groups interviewed receive a food ration, either for themselves or their children. General knowledge of the basic educational messages was evident during the interviews, however the level of responses varied considerably between groups and within groups, depending on how long each person had participated in the group and her level of interest. Some of the mothers learn how to give educational talks and participate in the weighing of babies. Once a mother "graduates" from the program, she no longer attends, as a

result, there are many families in each community who do not benefit from the MCH program

The groups meet once a week and receive three 45 minute classes on nutrition and health, early childhood development and home economics. Children participate in early stimulation activities that emphasize expression of love and caring, and intellectual, psychomotor and social development. The home economics module includes topics on hygiene and sanitation, nutrition, money management, alcoholism, communication skills within the family, and roles of family members. Both mothers and community leaders indicated improved family relationships and treatment of children due to the home economics module. Many mothers said "Men are now starting to learn "

3.1.5 Strengths and Weaknesses by Cooperating Sponsor

3.1.5.1 PCI Strengths and Weaknesses

Strengths

1. PCI has developed an excellent collaborative relationship with the MOH. Agreements are made with MOH area health centers to assure the continuity of services to mothers who are enrolled in the MCH program. The close relationship between the PCI health facilitator and the MOH auxiliary nurse at the health post provides motivation for MOH staff to participate in MCH activities, and serves as on-the-job training for the auxiliary nurse. In areas where CHWs receive supervision and on-going training at the area hospital, the mothers groups also continue to function, assisted by the CHW.

2. PCI emphasizes the importance of communication in the native language to improve health education and has published a manual that presents local phrases used to describe different illnesses. PCI has also done an ethnographic study that indicates how health workers can best interact with indigenous people. A culturally appropriate protocol is being developed for use by health service providers to reduce barriers between rural communities and modern medical care-givers.

Weaknesses

1. In many communities, there is frequent desertion of CHWs, due to migration or marriage. One year is not enough time to successfully train new CHWs, especially if the assumption is that these volunteers will be largely responsible for educating mothers and families. In areas where MOH presence is weak, the departure of PCI from the community often results in inactivity on behalf of the CHW, who no longer receives supervision from PCI or the MOH.

2. The PCI health facilitators spend much time collecting information and preparing. In addition, many of these activities duplicate the work the MOH should be doing. There is not time for home visits to see how mothers are applying the information they have received, nor is there time to

conduct participatory education activities. The fact that each facilitator has to cover 12 to 14 communities means limited time per community per month, especially where communities are dispersed.

3 Although PCI has done some work on adapting educational messages to local culture and language, there is no functioning information, education, and communication program in place. There is no physical space such as a community meeting room where educational activities can take place or materials can be placed on the wall for use by community members and CHWs.

4 PCI does a census in each community and has developed a good information system, however the information is not being used by the MOH or the community to analyze health data and take decisions.

3.1.5.2 FHI Strengths and Weaknesses

Strengths

1 The five-year intervention strategy implemented by FHI coupled with a sound community education program that includes all community members, shows good sustainability potential. The existence of a community health center provides a place for women and men to learn about and analyze health information. The health information poster assists community members to understand the health status of children and mothers, and to take responsibility for preventive health activities.

2 FHI generally implements all four Title II components (health, water, agriculture and food-for-education) in each community. The synergistic effects of improvements in agricultural production, water and sanitation and the increased knowledge and practice of preventive health behaviors in a given community can contribute significantly to improving food security and sustainability.

Weaknesses

1 Budget cuts in FHI have adversely affected the MCH program. Although FHI has prepared an educational strategy with a set of materials that have been field tested and validated, these are not being used due to lack of funds for reproduction. Staff reduction has caused FHI field staff to be spread too thin, which may jeopardize program quality, and lack of adequate transportation further increases the work-load in some areas.

2 Although FHI field staff coordinate with MOH services, a close working relationship between the two does not exist regarding joint training and educational activities, supervision of CHWs, and analysis of information with shared planning and decision making. A strong relationship between the community and MOH services is essential if FHI is to transfer program activities to local partners at the end of the project.

3 1 5 3 ADRA Strengths and Weaknesses

Strengths

- 1 ADRA has a good educational program ADRA has developed a flip chart for each topic and the facilitators prepare posters that are placed on the wall Since ADRA has a MCH meeting room in each community which facilitates educational activities and the presentation of materials The inclusion of early childhood development education and home economics has greatly strengthened the health education program ADRA believes that malnutrition begins in the family, and as the family is educated and behavior change takes place, food security will be enhanced Community promoters also make home visits on a three-month schedule to further reinforce the messages
- 2 By linking the CHWs to MOH health services, ADRA is strengthening the sustainability potential for these community human resources ADRA is also coordinating with the San Lucas area hospital to support periodic supervision and training meetings between the MOH auxiliary nurse and the CHWs in his/her jurisdiction

Weaknesses

- 1 By and large, only women who receive a food ration attend the weekly educational meetings, and other mothers and community members are not included ADRA plans to host a community education meeting once a month to provide education However, it is not clear how these activities will be sustained after ADRA leaves It will be important for ADRA to provide follow-up during the remainder of the five-year program in order to instill in the mothers the practice and habit of coming together regularly to discuss health and nutrition subjects
- 2 ADRA's approach is "hands on" and is effective regarding coverage of interventions However, although women from the mothers' groups learn to perform some activities on their own, work on group self organization and motivation are required to keep the impetus going once ADRA leaves the community

3 2 WATER AND SANITATION

3 2 1 General Problem Statement

Development literature is unequivocal that access to clean water and adequate disposal of human excreta are critical to improving health By reducing the prevalence of acute diarrhea, water and sanitation (W&S) have a direct and almost unparalleled influence on the biological utilization of food Reduction of diarrhea is even more effective if combined with hygiene education Access to water and sanitation also have indirect effects in non-health areas having water nearby reduces

the time the mother spends to collect it, thereby giving her more time to devote to cooking, household hygiene and the care of her children¹

Significant public health gains accrue in water. Child mortality in Honduras is significantly lower in households with potable water taps on the property (44 per 1000) than in households without them (70 per 1000). The difference is entirely for children in the 1 month to 4 year-old range, where the majority of child deaths nationwide are attributed to diarrhea. In the post-neonatal period, the risk of death is 1.9 times higher for 1-4 year-olds and 2.3 times higher in homes without potable water on the premises²

Data on the current coverage of water and sanitation in Bolivia are somewhat old, 1992 figures, but are the most reliable source of information. The Institute of National Statistics (INE) reports that 81% of the urban area has access to water and 63% to sanitation. In the rural area, the figures are alarmingly different: only 19% of households have access to water and 17% to sanitation³, indicating that the need for W&S is great in the rural areas.

The three NGO DAPs clearly address this need. PCI's DAP proposed to construct 315 potable water and family latrine systems benefiting nearly 10,000 families. FHI's DAP proposed to construct 289 community water and latrine systems benefiting 31,500 families. ADRA's DAP called for constructing 120,000 meters of potable water piping, 60,000 meters of sewage lines and 14,450 latrines.

3.2.2 General Objective and Strategies

The general objective of the three CSs is similar: to increase the coverage of potable water and sanitation in the poorest areas. The synergy between water and health is clearly recognized by all three. However, the strategies and resources that each CS devotes to the sector are significantly different.

As seen in the previous chapter, PCI has a 'floating' health component that works in a set of villages for a 12-month period and then moves on to another set of villages. W&S activities are meant to support the health component. However, since PCI's health component moves out of a given village at the end of a year's activities, W&S activities must take place in a compressed window of opportunity if W&S/health synergism is to be achieved. Because of ambitious annual targets, this is frequently not possible, meaning that PCI's W&S construction is frequently built in

¹In a mid-Eighties a CARE Bolivia study found that the average time a rural Bolivian woman saved from having a domestic hook-up was two hours per day, representing a considerable economic gain, and that the time saved had a direct result on improved family health.

²ENESF-96 (Honduras)

³Censo '92 "Resultados Finales" Instituto Nacional de Estadística

isolation from complementary promotion and follow-up

FHI approaches the subject differently in that it works in health in a given set of communities for the full five years of the DAP. This means that W&S activities can be implemented at a more measured pace, and that complementary messages of health, hygiene, water committee promotion, and other social promotion activities can take place over a longer period of time

The ADRA approach to W&S is more like FHI, in that W&S is seen as complementary to health activities and meant to last over the five years of the project. However, W&S in ADRA is a very small activity. Of the three-hundred-plus food-for-work construction activities being carried out by ADRA in the Camargo area, only nine are water and sanitation. Engineering and technical staff are not specifically trained in W&S as in the other two NGOs, and have to split their time between a host of other construction and supervision activities and a tiny number of W&S ones

As will be seen, the strategy selected by each NGO has had a significant effect on the quality and number of W&S projects under implementation

3.2.3 Summary of Data by CS

In FY '97, PCI built 32 systems benefiting 1,986 families at an approximate cost of \$35 per capita. In FY '98, it built 31 systems for 1,842 families at a cost of approximately \$57 per capita. Total: 63 systems, \$819,000 and an average of **\$46/capita**⁴

In FY '97, FHI built 18 water and sanitation systems benefiting 415 families at an approximate cost of \$130 per capita. In FY '98, it built 12 W&S systems benefiting 544 families at an average per capita cost of \$132. Total: 30 systems, \$590,000, **\$131/capita**⁵

In FY '97, ADRA built three (3) water systems benefiting 167 families and in '98 six systems benefiting 418 families. For both years, the average cost is **\$43/capita**⁶. Total for these nine systems is approximately \$ 117,250

All three NGOs also build public tap systems, some sewage treatment structures and latrines that have not been included in these figures for the sake of simplicity (FHI, for instance, built nearly 1,000 latrines during '97/'98). Detailed records are available in the Cooperating Sponsors' Annual Results Reports

⁴ PCI data "Indicators de Performance" Cochabamba, 19/05/99, Jorge Cueto personal communication

⁵ Alfredo Fernandez personal communication

⁶ Hugo Delgado personal communication

3 2 4 Findings by CS

During the field observations, the ET visited a number of NGO water and sanitation systems. Each system was evaluated based on ten key stages in the design and implementation of a high-quality rural water system, plus given an overall score. These are:

- 1) water source capture structure,
- 2) source-to-tank pipe,
- 3) reservoir construction and pipe network,
- 4) household connections,
- 5) latrine construction,
- 6) water committee involvement,
- 7) water system operators training,
- 8) tariff establishment and collection,
- 9) maintenance,
- 10) cleaning, and
- 11) overall rating

Two sets of evaluation criteria were used. The first was the "Manual de Diseño para Sistemas de Abastecimiento de Agua Potable en Poblaciones Menores a 5000 Habitantes" published by the National Directorate of Basic Sanitation of the Ministry of Human Development in 1995. The second were the evaluators' personal experiences of building rural water systems in Bolivia.⁷ A five-point scale was developed, A to F, to summarize the findings as follows:

- "A" satisfies all Bolivian norms and standards of professionalism, evaluated as first-class work
- "B" satisfies most Bolivia norms, evaluated by visitors as generally acceptable work
- "C" satisfies some Bolivian norms, evaluated by visitors as 'so-so' work
- "D" serious shortfalls in satisfying Bolivian norms, serious shortfalls of professional quality
- "F" does not satisfy the minimum requirements of Bolivian norms, unacceptable quality

3 2 4 1 PCI Findings

The following chart summarizes the results of the visits conducted to eight PCI W&S sites. Detailed site inspection notes can be found in Appendix F.

TABLE FOUR PCI Water and Sanitation System Evaluation Results

Community	Cap taci on.	Adu ccion	Ta nq ue	Red	Con nex.	Letr inas	Co mit e	Ope rad ores	Tar ifas	Mai nte	Lim piez	OVER- ALL
Kochimuta	B		B			F			C?			B
Rumi Koana	F	C	B			F	B	B	B	B	B	D
Kochi Pampa	B		C	B	B	F	A	B				B
Huayco	C	F			D	F	B	B	B	A		D

⁷ Colleague engineers accompanying the ET member contributed their professional comments on system construction throughout the process. Consensus was usually easily achieved.

Condoriri	F	F	F	F	F	F			F			F
Viluyo	A	A	D	C		F	A					C
Mamanaca	A						B	B	C		C	B
Tholahhuani	B	A	B	D	C	F		B	B	B		C

A number of factors are associated with these results. In some cases, the relationship between PCI engineering staff and municipal counterparts is unclear. As a result, the responsibility for technical oversight and attention-to-detail is murky. In others, PCI has assumed full responsibility for technical oversight and has not lived up to the responsibility.

Second, the PCI water staff is under-staffed. In FY '97 and '98, sixty-three systems were built by six staff. For FY '99, the plan is 67. This is far too many systems for a small engineering cadre.

PCI costs for the two years average \$46/capita. This is far less than the Bolivian national standard— and international ones— of approximately \$100/capita for W&S. One result of this low figure has had PCI staff scrimping on countless items and cutting a number of corners that have an immediate effect on project quality.

Also, PCI Cochabamba has not built any latrines in Cochabamba at the time of this report in late FY '99. The justification for this decision according to PCI-Cochabamba is that "before building [latrines], a process of community education and training has to have finished in order to assure [they are] adequately used. We believe that to invert this process [latrines built before training] runs the risk that they may not be adequately used or maintained, [as] many negative experiences have been seen [in this regard] in Bolivia." The explanation is adequate, but begs the question how PCI Cochabamba is going to be able to carry out this training and build upwards of 500 latrines planned for FY '99 in the remaining 13 weeks of the fiscal year.

For these and other reasons found in the trip notes, the quality of PCI's interventions in W&S was judged low-to-average.

3 2 4 2 FHI Findings

The following chart summarizes the results of the visits conducted to six FHI W&S sites. Site inspection notes can be found in Appendix F.

TABLE FIVE FHI Water and Sanitation System Evaluation Results

Community	Capacitation	Adoption	Technique	Red	Connex.	Letras	Committee	Operadores	Tarifas	Mantenimiento	Limpieza	OVER ALL
Hormoni/Chiriguanavia/etc	?	A	B	C	B	A	A	B	B	A	C	B

Poquera (rehabilitacion)	A		B			A	B		C	A		B
Maychapampa	C	B	B		B	A	B	B	C	B	B	B
Sicuaní	B	A	B			A	B		D			B
Anko Ckala (en construc)	B	A	C		B	A	A	B	C			B
Kirpe	C	C	B		B	A	B	D	F			C

FHI has an attractive water and sanitation program. Water systems are generally well constructed and show high-quality technical supervision and attention to detail. Several small changes would result in most FHI systems rating an "A" (1) doing away with the needless (and expensive) by-passes, (2) installing sanitary seals on water source captations, (3) replacing inferior *politubo* with PVC, (4) and eliminating unnecessary metal steps. FHI's latrine package is admirable, and some of the best work the evaluators have seen in Bolivia. Solar-warmed community bathing facilities are an excellent innovation, and merit national scrutiny.

The package is expensive. Data presented earlier indicate that the cost-per-capita is approximately \$130, well above international and national norms. Given the very high level of service however, this is an appropriate cost structure, and the ET would not have FHI change this mix unless FHI chooses to do so. Participants in the FHI W&S program are receiving a terrific service at a justifiable price.

FHI needs to be more disciplined in its choice of communities, however. The considerable per capita investment is appropriate in both monetary and personnel supervision costs when applied to communities of forty-or-so families. The investment becomes questionable when applied to communities of seven, ten or twelve families, as seen during field observations. There are a great number of un-served populations in rural Bolivia of greater concentration for FHI to be dedicating such resources to such a small number of participants.

There is some evidence that latrines are not yet being used by a number of the families. This is not surprising given the resistance that traditionally accompanies profound behavioral changes, and FHI will need to need community promotion to achieve all its goals in this area.

For a relatively small number of systems, twelve in Potosí in FY 1999, FHI has a large cadre of personnel. Current personnel include one La Paz-based head of program engineer, one engineer/auditor, one topographer, one community organizer, one supervising engineer, two work engineers, and a non-staff mason or construction supervisor for each project. Some of these staff work full-time on W&S and some are shared among several infrastructure components. FHI's recent financial decision to charge these staff to one project component in some cases, and to co-share the charge in other cases does not provide full clarity on how many staff are assigned exclusively to W&S. Indeed, to the staff themselves it may be unclear what the mix of their responsibilities actually is.

3 2 4 3 ADRA Findings

The following chart summarizes the results of the visits conducted to five ADRA W&S sites. Site inspection notes can be found in Appendix F.

TABLE SIX ADRA Water and Sanitation System Evaluation Results

Community	Cap taci on.	Adu ccion	Ta nq ue	Red	Con nex.	Letr inas	Co mit e	Ope rad ores	Tar ifas	Ma nte	Lim piez	OVER -ALL
Canchas Blancas	F	D	D	F	F	D			F	C		F
Kehuayllan	F	D	D							F	F	F
Villa Flores	C	A	C		C		B	C				C
PuebloAlto 'A' (en constr)	B	A	C				B	A	B			B
Tacaquira (letrinas)												B

Water and sanitation is a very small part of the ADRA portfolio. Three systems were built in FY '97, six in FY '98, and three are underway in FY'99, compared to three hundred or more food-for-work activities taking place at the same time. Engineering field staff have to divide their time between the competing interests of water, irrigation and FFW roads, and the number of sites of work in the former is minuscule compared to the latter two.

The ADRA budget for water and sanitation is low. According to data supplied by ADRA, the average per capita cost of the nine FY '97 and '98 systems was US \$42.64. This is far less than the Bolivian national standard of approximately \$100/capita. One result of this low figure has had ADRA staff scrimping on countless items and cutting a number of corners with immediate effect on project quality.

ADRA water staff is limited. The organization has only one engineer with advanced training in water and this individual is based in La Paz. There are indications that ADRA field personnel do not possess the technical skills, knowledge and experience to carry out a water and sanitation program. It is also true that ADRA has only come to W&S in the last eighteen months, not having been involved in the sector in its previous programming. ADRA has a long way to go in advancing on water's steep 'learning curve'.

ADRA is still in the early days of studying appropriate latrine interventions.⁸ Its current

⁸ Only a handful of the dry-pit 7 934 latrines reportedly built with ADRA support were visited by the ET during the field observations— as well as a relatively rigorous inspection of the pour flush latrines being built in one community. The observations should be read with this small sample size in mind.

methodology is to provide food-for-work rations to the family, and require that the family contribute all other costs. In the case of dry pit latrines, (the least attractive technical option), the family contribution only involves roofing materials and a cane door. A dozen-or-so latrines were inspected and found to be of low-to-average quality. In the case of a pour-flush latrine, the investment being required of the community member is much more. In fact, it was evident in one community that only the richer members of the community can afford such a contribution. In addition to the social (and ethical) aspects of such programming, ADRA has yet to come to grips with some technical details, such as an excessive amount of water being required to flush the latrine.

For these and other reasons found in the site notes, the quality of ADRA's interventions in W&S was judged low-to-average.

3.2.5 Strengths and Weaknesses by CS

3.2.5.1 Strengths and Weaknesses of PCI

One of PCI's strengths is that recently it has hired several W&S staff who bring with them a good deal of experience, enthusiasm and dynamism that PCI can now take advantage of.

Another strength is that PCI has been good about 'outreaching' to other organizations involved in W&S, PROSABAR, "Desarrollo Comunitario," CERES and others. PCI has been a catalyst in drawing on the expertise of these organizations and including them in the PCI W&S effort.

One substantial weakness in PCI's W&S activities is a lack of *strategic* focus. PCI proposes to work in over five hundred communities in food-for-education over the life of the DAP. In an attempt to reach as many of these communities with health as possible, PCI carries out a 'floating' health component, moving its health team from one set of villages to another at the end of twelve months. Currently PCI is working in health in 120 villages, and it is the hope— however unrealistic— to build water systems in each of these villages, fostering water/health synergy. As seen earlier, the plan for FY '98 was 54 systems, and for FY '99, 67 systems. Additionally, PCI has received requests from local municipal authorities for 375 water systems. Without strategic criteria and a clear vision what can humanly be accomplished, W&S staff are caught between a desire to extend coverage as much as possible (and reported pressure to keep the numbers up), and the impossibility of doing so effectively. Days of personnel time are spent traveling from one edge of the project area to the other to supervise one or two systems. Also, the selection of these communities was likely more influenced by municipal priorities and counterpart contribution than realistic programming and administrative/logistic criteria. The result, noted earlier, is an overly large number of systems given personnel and budget resources.

Next, because of the 'floating' health component, the PCI W&S component has no permanent presence in the community. The W&S cadre does not have a full-time person in the village to promote the water system construction, to supervise the stages of construction, to organize the

water committee, to carry out hygiene education or to promote timely maintenance and cleaning. This also means that when engineering or plumbing details are not completed to satisfaction, an easy mechanism does not exist for the shortfalls to be reported quickly to PCI Cochabamba water staff. Contracts have been executed with local NGOs, "Desarrollo Comunitario," and CERES, to fill this need in (only) eighteen communities but those contracts will expire within the month.

There is a lack of attention to technical details in some PCI W&S staff. During the Cochabamba visit, the regional engineer only accompanied the ET on half of the captation inspections. The fine details that make up a first class system were seen to be overlooked in many PCI systems— with the assertion "that was the responsibility of the municipality." The argument was not convincing since even where PCI staff did assume full technical responsibility, the quality of the final product was not up to standards.

Lack of adequate budget and 'trying to do things on the cheap' are significant factors in this equation.

3.2.5.2 Strengths and Weaknesses of FHI

One significant strength of FHI is that it has a cadre of engineers specialized in water system construction and that FHI sees its role as 'implementing down to the last nut and bolt.' Unlike the other NGOs, FHI has in-house topographic and design personnel who prepare all system blueprints. In addition to its La Paz-based engineer manager, it has several regional engineers whose principal tasks are to oversee the water system construction. FHI also hires site engineers who live full-time in the village until the W&S activity is complete. In addition, FHI personnel are personally in charge of the building of household connections, wash-hand basins and baths. In this way, FHI has avoided delegating this 'hand-on' operationality to the municipality or the community and not suffered a low-quality product as the result.

FHI has a five-year commitment in W&S villages. This provides FHI with a significant advantage in terms of long-term focus, training in hygiene education, oversight and encouragement of water committees, on-the-ground presence to assist in system repair, and all other water/health community uplift efforts.

FHI's W&S component receives adequate budget support, and the results of that allocation can be seen in the quality of FHI work.

There may be several weaknesses in the FHI approach. One could be a tendency to 'go it alone.' FHI seems to want to control all aspects of the W&S process. While this has produced quite positive results in terms of system quality, it leaves open the question whether by liaising with other organizations a better product could be produced. For instance, the evaluators are not convinced that the quality of community course work (in FHI and in the other NGOs) is the best it could be. Rather than create its own modules for this purpose, FHI could be liaising with PROSABAR which has a well-respected one-week course addressed to this subject. FHI doesn't

seem to make much of an effort in 'outsourcing' as it might. FHI reports that it is concerned with the sustainability of community water communities. This is perhaps another area where other organizations, CERES or Desarrollo Comunitario, could help.

On a related front, there are subtle overtones in much of FHI staff that "we are the experts and the community should learn from us what is good for them." One evaluator took the opportunity to highlight the difference in semantics— and in mental paradigm— between the concept of 'beneficiary' and 'participant', noting that the FHI presentation used the first word over fifty times and the second word not at all. In spite of this call to attention, throughout the field trip FHI field staff continued to refer to community members as beneficiaries at every turn.

A review of the detailed field notes will indicate that some FHI staff are using technological alternatives that have been out of favor for some years, (by-passes), or relying on lower-quality materials than one would expect in an FHI system (politubo). Nevertheless, the overall quality of FHI's W&S component is quite acceptable.

3.2.5.3 Strengths and Weaknesses of ADRA

One important strength that ADRA can exploit is that in the Camargo area, another NGO (CARE) built dozens of water and sanitation systems over ten years ago. Engaging in a sustained and meaningful dialogue with these communities could shed light on what works in water, health and sanitation and what does not, what the community values and will maintain and what it will not, what latrine technology is appropriate and will be maintained and what will likely not. This opportunity to analyze ten years of sustainability and strengths and weaknesses should not be missed.

Another strength of ADRA is that the desire for a water system originates with the community (as opposed to the municipality, for instance). This program modality, also noted in the Health section, gives ADRA a head start in promoting community ownership even before the start of the project.

One weakness of the ADRA W&S methodology is that individual community members are being asked to assume all costs of connecting their houses to the network. This puts a considerable financial hardship on those who live at a distance from the main line. Also, in poor communities it almost guarantees that inferior household connections will be installed, thereby seriously affecting the sustainability of the system. Most donors consider it the obligation of the implementing agency to install the completed water system to the household, not to stop at the laying of the main pipe as does ADRA.

Another potential weakness in ADRA could be the comment during the field observations of an 'organizational culture' that favors food-for-work roads. This would not be surprising since it is a fact that ADRA uses the most commodities of any Cooperating Sponsor in Food-for-Work, 8000 MTs. Since the flow of Title II resources to ADRA is dependent on the use of commodities, it is

natural for the organization to be concerned about the utilization of this resource, perhaps more than water and sanitation activities which could be viewed as a 'cost center' rather than 'revenue center'

Another weakness in ADRA is the lack of appropriately trained W&S staff at the local level, and the distance between these people and the La Paz sanitary engineer since Camargo is one of the most isolated of any NGO zones. In addition, the ADRA Camargo health coordinator is a physician with virtually no experience in either water or engineering, he will need considerable backstopping to be able to provide meaningful oversight to W&S activities. Some of the obvious construction errors highlighted in the technical notes are likely attributable, in part, to the lack of an effective ADRA monitoring and supervision system in W&S.

Another potential weakness may exist in ADRA's technical supervision. During the field observations, it was seen that at least one employee (and perhaps more) may have been guilty of significant malfeasance in the execution of duties. In ADRA, it may be more difficult to discipline low performing workers. When the subject of disciplinary action was broached during the field observations, the idea seemed to come as a surprise to the ADRA staff person to whom the comment was addressed.

Finally, it bears repeating that lack of adequate budget and 'trying to do things on the cheap' are significant weaknesses in ADRA's ability to complete high quality W&S systems.

3.2.6 Generalized Strengths and Weaknesses

One strength of all three CSs is a concern with village water committees. In almost every field observation, it was noted that a water committee had been formed and was taking responsibility for the water system. Also, in most communities, at least some conversation had taken place regarding tariffs. Both of these are important gains.

Another generalized strength is the quality of the cement work. The fissures and cracks that sometime go with such rural water systems were found almost nowhere, indicating high quality work during the pouring of the concrete.

One generalized weakness is unfamiliarity with the Bolivian norms as published in the "Manual de Diseño para Sistemas de Abastecimiento de Agua Potable en Poblaciones Menores a 5000 Habitantes". This is a surprising finding. One would have expected that engineers in the field of rural water would be aware of an official GOB document published five years ago. This was clearly not the case with a number of NGO engineering staff.

In the captation structure, generalized weaknesses are the following: lack of a sanitary seal, lack of adequate fencing around the structure, non-use of steel pipe in cement walls, lack of bronze filters, overly heavy hatch covers, lack of drainage pipes in the shut-off valve boxes, and cement floor with adequate slope in the box, inadequate attention to testing the source for contamination.

In the source-to-tank pipe, generalized weaknesses are use of *politubo* and ravine crossings not built with steel pipe

In the tank, generalized weaknesses are the following lack of a sanitary seal, lack of adequate fencing around the structure, non-use of steel pipe in cement walls, lack of bronze filters, overly heavy hatch covers, lack of drainage pipes in shut-off valve boxes, lack of a cement floor with adequate slope in the box, ventilation "T"s built with plastic, steel steps beginning to oxidize in the tank, valves without universal joints, drainage and over-flow pipes discharging overly close to the tank, unnecessary by-passes

In household connections, generalized weaknesses are lack of a sturdy standpipe pedestal, lack of an infiltration area, shut-off valves without boxes and full of mud, not all accessories in steel

In latrines, generalized weaknesses are lack of designs, reliance on outdated technology (dry-pit instead of ventilated improved pit), pour flush latrines that require too much water, inadequate community promotion in latrine use, inadequate promotion of general community hygiene, lack of water nearby for hand-washing, overly infrequent burning of toilet paper

In community aspects, generalized weaknesses are inadequate tariff structures, inadequate programming time to be with the community in water system use, inadequate training of community operators, inadequate female participation in community water committees

In other areas, generalized weaknesses are inappropriate cost-saving strategies not delivering system maintenance tools to the community, not delivering completed system plans to the community, not "burning" the water system with calcium hydrochloride to purify it from construction-related contamination, not delivering a completed installation to the household, requiring the community to use maintenance funds to purchase fencing and other items normally considered part of system construction

Finally, there is the issue of sustainability. As pointed out during the feedback session, W&S sustainability has at least three dimensions: technical, financial and social. Technical issues related to the quality of the materials originally used, sufficient to withstand the rigors of 20 years of use. Financial issues related to questions whether the community has the means to repair and maintain the system when, inevitably, it requires repairs. Social issues relate to whether the community has learned sufficient management skills to stay cohesively organized and keep the system running. Without appropriate quality in the technical realm, the financial and social elements become harder for the communities to accomplish. It is this vision of the importance of high-quality initial construction that has guided this assessment. It is the evaluator's judgement that there is a generalized lack of appreciation in most staff that these water systems should last for twenty years— as called for in the system design. If programmers, engineers, construction staff and the community itself built the system with an eye to returning to Bolivia in 20 years to see the legacy of one's efforts, the 'nickel and dime' issues highlighted in this assessment would not have arisen.

3 2 7 Summary

One of the NGOs, FHI, is delivering a high quality product and only needs to fine-tune some of its procedures and design specifications in order to achieve first-class construction in all W&S systems

PCI and ADRA are embarked on a steep learning curve of what is required to provide high quality systems more budget, more staff commitment to technical details, better supervision, longer presence in the community, more of an "organization culture" of quality, more focus on long-term sustainability Until these elements are fully in place, it will be difficult for these two NGOs to reach the standards currently being provided by FHI

3 3 AGRICULTURE

3 3 1 General Problem Statement

Bolivia is generally recognized as one of the poorest and most food insecure countries in the region It is also recognized that these two facts are highly related, i e , the root of Bolivia's food insecurity is found in its poverty

Because the relative degree of food security varies within regions in Bolivia, with the eastern Altiplano and highland valleys being the most food insecure, the three NGOs have targeted their activities to communities within these geographical areas

3 3 2 General Objectives and Strategies

Recognizing the economic nature of food insecurity in Bolivia, and the importance of the agrarian economy, ADRA, FHI, and PCI prepared DAPs that will increase rural household income derived from agriculture The main strategy for achieving this objective is to improve productive capacity and efficiency in combination with increasing access to markets for agricultural products Specific interventions to achieve the former include organizational strengthening, technical assistance and training, irrigation infrastructure construction or rehabilitation, greenhouse construction, post-harvest storage improvement, and financial assistance through a revolving fund Market access is being improved through opening access roads or improvements to existing roads A third activity is improving access to market information, however this activity is much less developed at this time

3 3 3 Summary of Data by Cooperating Sponsor

All data shown in this section were obtained from the relevant CSs

TABLE SEVEN PCI Results of Performance Indicators in Agriculture

Performance Indicators	Baseline FY 1996	Result FY 1997	Target FY 1998	Result FY 1998
14 Total number of household beneficiaries (from the agricultural productivity program)	0 0	5 762	4,463	14 691
15 Outstanding number of production units receiving technological services	N/A	N/A	N/A	N/A
16 Outstanding number of production units receiving marketing services	0 0	N/A	N/A	N/A
17 Increased volume of production of selected crops for target households (Total in Indicator 12) (Kg)	6,200	9 261	9 532	4 710
18 Increased Sales of selected crops for target households (Total in Indicator 12) (Bs)	2,667 00	4 756 60	4 994 00	896 23
19 Increased net incomes from agriculture related activities (Total in Indicator 12) (Bs)	3 188 00	7 581 84	7 348 00	4 285 75
20 Increase in number of hectares irrigated	0 0	387 4	300	286
21 Proportion of targeted population that adopt improved agricultural practices	N/A	N/A	N/A	N/A
22 Number of kilometers of roads constructed and improved roads	0 0	252 35 km constructed 517 09 km improved	30 00 km constructed 379 00 km improved	313 km constructed 398 km improved

Source PCI Bolivia Title II FY 1998 Results Report

Indicator 17 exhibits a 24% decrease in comparison with the baseline numbers. However, PCI's comparison with areas where they did not intervene indicates that household production in these latter areas averaged only about 2,000 kg/ha.

Indicator 18 shows a 66% decrease from the baseline number. At least part of this can be attributed to a decline in volume produced. Although PCI did not cite the following, another possible factor could have been that with lower production, a greater percentage of the crop was required for household consumption. This would further depress sales revenues.

Indicator 19 displayed a 34% increase over the baseline figure that PCI attributes to the irrigation programs allowing a greater diversity of crops to be produced, including higher market value crops.

Indicator 20 shows only a slight decrease in achievement over planned target, 95% of target, but

the important impact indicator of this is the increase in net income that PCI attributes to additional hectares under irrigation

Indicator 22 featured an impressive 1,043% increase over the target PCI attributes this to both unanticipated demand on the part of communities, and the large geographical expansion that occurred The 5% achieved vs target for improved roads indicates the target was a realistic one

3 3 3 2 FHI

TABLE EIGHT FHI Results of Performance Indicators in Agriculture

Performance Indicators	Baseline FY 1996	Results FY 1997	Target FY 1998	Results FY 1998
12 Total number of household beneficiaries (from the agricultural productivity program) NEW INDICATOR	1 300	3 600	3 900	4 122
13 Outstanding number of production units receiving technological services NEW INDICATOR	N/A	N/A	N/A	4 122
14 Outstanding number of production units receiving marketing services NEW INDICATOR	N/A	N/A	N/A	459
15 Increase volume of production of selected crops for target households (Kg) (Total in indicator 12)	Based on 6 selected crops 4 000 Based on 33 selected crops N/A	Based on 6 selected crops 5,556 Based on 33 selected crops N/A	Based on 6 selected crops 5 814 Based on 33 selected crops 21 000	Based on 6 selected crops 4 204 Based on 33 selected crops 15 475
16 Increased sales of selected crops for target households (Total in indicator 12)	Based on 6 selected crops Bs\$1,925(US\$396) Based on 37 selected crops N/A	Based on 6 selected crops Bs\$3,000(US\$566) Based on 37 selected crops N/A	Based on 6 selected crops Bs\$3,240(US\$600) Based on 37 selected crops Bs\$16 065(US\$2 975)	Based on 6 selected crops Bs\$1 539(US\$285) Based on 37 selected crops Bs\$11 794(US\$2 184)
17 Increased net incomes from agriculture-related activities	Based on 6 selected crops Bs\$1 199(US\$247) Based on 33 selected crops N/A	Based on 6 selected crops Bs\$4 409(US\$764) Based on 33 selected crops	Based on 6 selected crops Bs\$4,385(US\$812) Based on 33 selected crops	Based on 6 selected crops Bs\$3 596(US\$666) Based on 33 selected crops

		N/A	Bs\$12 695(US\$2 351	Bs\$9 320(US\$1 726
18 Increase in number of hectares irrigated	106	128	548	12 (>40) 1/
19 Proportion of the targeted population that adopt improved agricultural practices	(1770/8857) 20%	(2163/8857) 24%	(4400/8857) 50%	(2708/8857) 30%
20 Number of kilometers of roads constructed and improved roads	(/) 8	(0/0) 0	(/) 15	(3 5/0) 3 5

1/ Tomoyo irrigation project scheduled for completion in June 1999

Source FHI Bolivia Title II FY 1998 Results Report

Indicator 12 shows that the total of 4,122 households that have participated in the program represents 47% of the potential 8,857 target households in the project area

Indicator 13 [Evaluator's note Since productive units are households, and not communal farms or cooperatives, it is difficult to understand what is being reported in Indicator 13 that is not shown in Indicator 12]

Indicator 14 reports on those receiving intensive marketing assistance who generally grow crops that are either non-traditional cash crops, or are grown under greenhouse conditions

Indicator 15 reports a 76% achievement of the target This shortfall is explained as due to the unfavorable growing conditions, especially the drought

Indicator 16 shows a decline from the target, but again, if production is down, it is very possible that sales revenues will be lower as well

Indicator 17 now reports on net value of production versus previous reporting of gross value of production [Evaluator's note The decrease in net value of sales and of net income is almost identical, raising the question of to what extent they are measuring the same thing If so, can one indicator be eliminated in the interest of more efficient reporting]

Indicator 18 shows the effect of the later than anticipated start for two irrigation works, Tomoyo (548 hectares or acres?), and Teneria (30 hectares) Both of these are now scheduled for completion in FY 1999

Indicator 19 notes a 6% increase in adoption rates for improved agricultural practices [Evaluator's note This number should be closely tied to the increase in number of farmers participating in the FHI program However, the increase in participants from 1997 to 1998 rose by 14%, much greater than the 6% increase reported for adoption of improved technology]

Indicator 20 demonstrates the impact of having late disbursements, in this case from the FDC and PL 480 Title III

3 3 3 3 ADRA

For ADRA, the agricultural income activities contained in the FY 1996-2000 DAP represented a move to an area of Bolivia where the organization had not been operating heretofore. Much initial effort was invested in gaining the confidence of the communities involved. Below are data reported by ADRA that indicate progress through the first half of the implementation of the DAP. The numbers shown are the total for the year, and do not always represent additional participants or yields over the previous year's figures.

TABLE NINE ADRA Results of the Performance Indicators in Agriculture

Performance Indicators	Baseline FY 1996	Results FY 1997	Results FY 1998		
			Planned	Executed	%
12 Total number of beneficiaries under the agriculture productivity program	*	13,407	*	13 623	*
13 Number of agriculture production units receiving technical assistance	*	2 108	*	2 983	*
14 Number of productivity units receiving marketing services	*	*	*	*	*
15 Increased volume of production by selected crops and achieved by program targeted farmers (kg)	3 024	3 780	5 536	7 462	164
16 Increased sales of products obtained from selected crops by program targeted farmers (Bs\$)	1 480	1 850	2 298	6 005	261
17 Incomes increase by agriculture related activities (Bs\$)	3 604	4 036	4 520	6 740	149
18 Increased number of hectares irrigated land areas	31	76	136	586	430
19 Number of selected farmers utilizing newly improved agricultural practices	0	16	25	19	76
20 Number of kilometers improved or constructed, rural secondary roads	26	78	80	118	147

Source: ADRA Bolivia Title II FY 1998 Results Report

Indicator 12 was added in FY 1997, and 13,407 families participated that year. In FY 1998, 216 additional families were added, and an additional 2% is expected in FY 1999. Of the 13,623 families participating in FY 1998, 2,983 received assistance in production and marketing, 2,384 in irrigation infrastructure, 2,288 in road improvement, and 5,968 in new road construction.

Indicator 13 includes assistance in agricultural input use, new areas for farming, and utilizing

infrastructure such as irrigation, organizational strengthening, and marketing

Indicator 14 was not envisioned to become active until the third year of the DAP, however some marketing assistance was provided regarding product grading and sales procedures

Indicator 15 indicates a significant increase over the previous year's statistics. However, given the overwhelming role of weather on production, it is not possible to assign "cause-and-effect" based upon one year's data

Indicators 16 and 17 show that when farmers can produce more, and have improved access to markets, they can usually increase sales revenues. However, since price variation from year to year is significant, it is again not possible to assign a specific cause to this increase. It is reasonable to conclude that ADRA's interventions did have a positive influence on the results obtained for indicators 15, 16, and 17, even though it is not possible to determine the exact degree of influence

Indicator 18 merits special attention, as the notable increase in achieved-versus-anticipated indicates the value of inter-institutional collaboration – between ADRA and the Chuquisaca South Project

Indicator 19 is a measure of the impact of Indicator 13, and provides a basis for evaluating what modifications may be required in the transfer of the technical assistance or training messages

Indicator 20 shows the total kilometers of roads constructed or upgraded during the year. This includes 32 km of new rural access roads, and improvements to 86 km of secondary and 40 km of access roads

3.3.4 Findings by Cooperating Sponsor

The following information was obtained from interviews with leaders and other residents of each of the communities visited

3.3.4.1 PCI

During the period of June 11 through 14, the ET visited communities in the provinces of E. Arze, Ayopaya, Bolívar, and Arque in the department of Cochabamba. These areas were selected by PCI as being representative of the types of activities that illustrate how PCI is implementing its FY 1996-2000 DAP

The first project visited was an irrigation works in the province of E. Arze, municipality of Sacabamba. The project includes a reservoir, two primary canals, and a secondary distribution system. The total cost is about US\$1.6 million, of which JICA is providing 49% of the financing, CIPA 17%, PCI 9%, and the municipality, community, and other donors the remaining 25%

When completed, it will provide complementary irrigation to 280 ha , involving five communities and 210 families. Only one of the primary canals has been financed at this time. The project is large, and may well involve a significant challenge to administer and maintain adequately. An association has been formed for this purpose, and the group is finalizing statutes and regulations. There is a strong will among the communities involved to keep the system operational, for the answer from the participants to the question of impact is that the irrigation will "transform" their lives.

The mayor was also interviewed, and he is a strong supporter of the project. He believes that productive investments are the best use of the funds he receives under the Popular Participation Law. Among the several mayors interviewed throughout the entire field portion of the evaluation, he was the only one to state this as the primary objective of his administration.

Morochata was the second municipality visited to inspect irrigation and road infrastructure projects. In the community of Pata Morochata, a system of sprinkler irrigation was being constructed to irrigate 12 ha of steeply-sloped land belonging to 31 families. The system is entirely operated by gravity, and utilizes both high and low pressure depending upon the water pressure. It was noted that several of the participants had purchased hoses and sprinklers to connect to the distribution system and had begun using them. The importance of this is that it indicates that there will be a concern toward maintaining the system, for these participants have made an investment with their own funds that will be lost should the distribution system fail.

A second important detail was that at least one participant had let his system run during the night, and everything had a coat of ice. This demonstrated that there was a need for a much better understanding of the role of irrigation at low temperatures. The belief seemed to be that using sprinkler irrigation could prevent crops from freezing.

The system still lacked a number of valves (about 30) and other small items to become fully operational, and it was not clear where financing would be obtained for these items. When operational, the system was expected to double the productive capacity of the land holdings.

The communities of Palma Rancho and Chunavi were visited to inspect the Linde-Palma Rancho access roads that had been improved using Title II Food for Work. Women had provided most of the community labor, and several were interviewed concerning the role of food in the project. All were in agreement that the food was an essential element in that it had provided the community with a means to sustain itself when no local production of foodstuffs was available.

Challuma was visited to inspect the irrigation project, and the Challuma -Titora Pampa access road. Again, participants expressed their commitment to keep the system operational because they could see how it would greatly enhance their economic well-being. The road improvement was a combined effort involving FDC, JICA, the Municipality of Tacopaya, PCI, and the communities.

Huaylloma Pueblo was visited to inspect the irrigation system and talk with the irrigation committee. The President of the committee expressed the community's determination to maintain the system after PCI leaves, but the specific details of how this would be done remained unclear.

The next community visited was Molle Punkhu, that had installed a cement-lined canal to bring water from a nearby river. It was evident that several additional improvements were needed, including strengthening the entrance to the diversion canal, and several points along the canal needed attention to avoid sediment from entering the canal. An interview with the irrigation committee established that the community had placed top priority on the construction of the system, and that the group was actively discussing alternatives. One variation was the expressed need to use the system to improve forage for livestock.

The last PCI site visited was Achacana, where a 2 km road had been constructed to connect the community to the main road. The community expressed how vital this road was, as it not only permitted access to markets for agricultural production, but also allowed better and more timely medical assistance for the community.

3 3 4 2 FHI

During the period of June 15 through 19, the ET visited twelve FHI agricultural communities, seven in the province of Inquisivi in the department of La Paz, and five in the department of Potosí. These were selected by FHI as being representative of the types of communities and activities where FHI is implementing its DAP.

The community organizational structure used by FHI is characterized by two administrative levels. First is the community-level organization, called the CCC. These are comprised of a number of sub-committees that are dis-aggregated by technical function. Several of these CCC organizations are then grouped into a zonal organization, called the CCZ.

The first FHI communities visited were in the province of Inquisivi, and the first was Camacho where the operation of the rotating fund was discussed with the CCZ. The group seemed clear on how the fund operated, including the 15% interest charged for maintenance of value and operations of the CCZ. The small size of the landholdings severely limits production potential, as does the significant rainfall of the zone each year. Actually, the lower rainfall experienced in 1997-98 assisted these farmers in achieving a higher than normal potato production. Sales are usually on farm, or directly to intermediaries.

The next community visited was Camacho, and a meeting was held with the CCZ. This is a small community and its problems are not only small parcels of land for each family, but also that the land is the property of several communities. This has made it difficult to have a coordinated program, or include productive infrastructure activities such as irrigation.

Huerta Grande was the next community, and the meeting with the CCZ was informative. The

farmers are convinced that they can run the rotating fund on their own. The capacity and drive of the leadership was impressive, as was the self-confidence displayed.

In Tenera, the ET visited an irrigation activity under construction. This project will improve the irrigation of 12 hectares, and bring another 18 into the irrigation scheme. When completed, 22 families will benefit from the system, and it is one of the few sprinkler irrigation sites seen. Since it is in a zone that produces fruits, the system will be appropriate for perennials and annuals alike.

The next site, Pucaraní, was interesting for demonstrating what can go wrong, as well as for what works. ACRA, a development arm of the Italian government, had constructed a reservoir and some irrigation canals. But the reservoir was constructed over a geologic fault, and so it never was able to store water, and therefore, the irrigation system was dysfunctional. The rotating fund seemed to be working well, however.

Collpaní was interesting from several aspects. First, the leadership of the CCZ was very dynamic. Second, this was the only CCZ which specifically had a women's committee. In fact, one of the presidents of one of the CCCs was female. She was reluctant to talk in front of all of the men, but the evaluator was able to talk to her one-on-one, and she is quite impressive. She was articulate about what was going on in her CCC, and emphasized the importance of livestock to the community. The conversation raised an interesting question as to why none of the CSs are working in livestock. There may be an important opportunity being lost here.

Yunga Yunga was the final community visited in this area. The farmers were interested in the rotating fund, but what they seemed to want most was a tractor. They sell their products mostly to intermediaries at the farm gate, either for cash or on consignment.

Sorocoto was the first community visited in Potosí Department. The meeting with the irrigation committee and the CCZ was to discuss the impact and maintenance of the irrigation system and the rotating fund. The irrigation committee was well organized with statutes and regulations that govern participation in the irrigation project, including maintenance procedures. Committee members expressed a belief that access to irrigation would greatly enhance their ability to improve household income. However, they did express a need for a road to improve market access to realize the full potential benefit of the irrigation system.

The CCZ also seem cognizant of the importance of maintaining the rotating fund, including a strong interest rate (15%) to maintain the value of the fund and to finance the activities of the CCZ. A major benefit of the irrigation system, as seen by the CCZ, was the ability to diversify crop production.

Sorojchi was visited next. An evening meeting was held with members of the irrigation committee and the CCZ. The organizational structure of the group indicated that the community was well aware of aspects of managing an irrigation system, including costs. The CCZ was interviewed at length about the eventual departure of FHI, and its ability to continue without external assistance. The group felt strongly that they were receiving the training necessary to do

so, including management of the rotating fund. The CCZ was taking the additional step of obtaining its *persona juridica* as an additional measure to insure sustainability.

An inspection visit was paid to the Tomoyo irrigation project, and the Tomoyo-Maragua access road. This is an impressive project, with several interesting features to adapt to the local terrain. There are design considerations that could have been incorporated to lower maintenance costs (especially due to silting). These will be discussed in greater detail in Section 6, as they generally apply to all three CSs.

Janaj Cuchu was visited to meet with the Association of Producers in Greenhouses (API) and receive a detailed explanation of the production, monitoring, and marketing of lettuce. The association seems well organized, and understands the techniques of greenhouse management as well as the importance of product quality control.

Several community members spoke about how greenhouse production had radically changed their lives and that of the community. Along with changes involving increased family income, a very important change had occurred in the community itself. Whereas people in the community previously had to travel to Sucre to purchase simple medicines, e.g., aspirin, alka-seltzer, etc., a local store had opened and began carrying these and other basic needs. This was prompted by the rise in incomes in the community as a result of the greenhouses.

An interesting lesson was learned in the sale of the lettuce. Initially the producers tried to sell the production themselves, but this failed. They then hired a person to market their produce in Sucre, for which he receives a commission of the sales. An important lesson that could easily be lost is that specialization is the key to market efficiency. Anyone contemplating a marketing program including the three CSs should avoid the temptation to convert producers into marketers, a seriously flawed idea from the outset.

The next visit was to Rodeo where a meeting with the CCZs from Rodeo, Antora, and Kuturi was held. Most of the questioning focused on the management of the rotating fund. There was a strong interest in increasing the fund, as the CCZs believed that the communities had the managerial experience and capacity to handle larger amounts of money. The discussion was conducted in an environment of increased self-confidence demonstrated by the participants.

Chimpa Rodeo was the final community visited in this area where traditional and improved storage methods for potatoes were inspected. The traditional method, usually on or under the ground, allows for storage only until the rains begin. Improved storage permits storage for about six months without serious deleterious effects.

3 3 4 3 ADRA

During the period of June 20 through 24, seven communities were visited in the provinces of Nor and Sud Cinti in the department of Chuquisaca. These seven were selected by ADRA as representative of the types of communities in which ADRA is working, as well as types of

activities involved

Kellu Kellu was the first community visited. ADRA's interventions included irrigation and road infrastructure, and seed potato production along with technical assistance and training. The community is comprised of 59 families, of which 16 are participants in the irrigation infrastructure activity that will irrigate 16 hectares of potatoes, maize, and horticultural crops. The remaining families are cultivating barley and wheat on their plots above the irrigated lands. Average land size is 0.5-1.0 hectare, and there appears to be no additional land that can be brought into cultivation. Potato production is divided into 40% consumption, 30% for seed, and 30% for sale. On irrigated lands, the producers have switched to growing certified seed potatoes for sale to neighboring communities in order to improve household income.

There are community organizations, such as the Agriculture, Irrigation, and Road Committees that oversee the operation and maintenance of the infrastructure, as well as manage the rotating fund initially established to provide access to certified seed potatoes. The community expressed a strong intention to maintain both the irrigation system and the road as the group understood how critical these were to their economic well-being.

The rural infrastructure was built under the aegis of Food for Work. When questioned about possible disincentive effects of food, the community response was that, on the contrary, the food had allowed the activities to move forward, as the participants would otherwise have had to migrate to other areas (Santa Cruz, northern Argentina) to find work in order to buy food and provide for their families.

Huancaran was the next community visited, and irrigation and roads were the major interventions supported by technical assistance and training. The irrigation system, comprising 200 m of cement-lined diversion canal, a 30 cubic meter storage tank, and 1,200 m of distribution canal, was constructed through the combined input from the community, the municipal government, and ADRA. The system will irrigate 15 hectares of potato, maize, barley, wheat, and broad bean production for 15 families. Average land-holding is 1.25 hectares per family, of which, 0.25 is under irrigation. A water administrator (*jefe de agua*) nominated by the community is responsible for overseeing the operation and maintenance of the irrigation system. The community manifested its clear understanding of and commitment to the maintenance of the system once ADRA leaves.

Sale of agricultural produce is usually done at the farm gate to an intermediary who either pays immediately or once the produce is sold in the market. Conversely, producers sometimes contract transport and sell directly in major markets, e.g., Potosí, Santa Cruz, La Paz, etc. They use a system of market information to determine which method is best, derived from either radio broadcasts or people they send to gather information first-hand in the markets. The community is soliciting additional collaboration from ADRA to improve 2 km of access road and line additional irrigation canals.

Camblaya was visited next, and irrigation and roads were inspected. Eight kilometers of road were improved, involving 70 participants under the Food for Work format. Completion of this

has had a significant impact on the commercialization of production as previously agricultural production had to be carried by mule to a point on the major road, where it was sold to an intermediary. The producers were at a distinct disadvantage because they had already invested in getting the produce to that point, and were under great pressure to accept whatever price was offered.

The opening of the access road has permitted a variety of sales procedures: farm-gate (in cash or on consignment) or directly in markets of Tarija or Camargo. Again, the community makes the decision based upon price information via Radio Tarija or from a community member sent to gather the information. Thirty percent of potatoes (30% was used for consumption, 40% for seed, and 30% for sale). A greater proportion of fruit production is commercialized.

The irrigation system allows 70 families to irrigate up to 1.5 hectares/family and permits two crops per year, where before, only one was possible. Yields are reported to reach about a 10-fold increase for potatoes and a 25-fold increase for broad beans (over the volume of seed planted).

The community agricultural committee also manages a rotating fund that is used principally to purchase certified seed potatoes. Repayment is based upon the value of the seed potato price at time of harvest. An additional amount is paid to cover the administrative costs of the fund. Combined, these comprise a "maintenance of value" aspect of the fund. To date, the fund has recovered 70% of its disbursements in 1997 and 80% in 1998. The process is on-going, and the community expects to recover all overdue accounts eventually. Currently, the fund has capital worth Bs\$25,000 (US \$4,400).

Sacari, the next community visited, had improved a market access road using Food for Work. The road now permits a greater range of sales options. Previously, the sale of produce mirrored that described above in Camblaya. Now, based upon price information received via radio, telephone, or from a community member, products can either be sold at the farm gate, or transported to markets such as Cochabamba, Santa Elena, or Incahuasi. Potato production is usually distributed 30% for consumption, 30% for seed, and 40% for sale. For maize, the corresponding percentages are 30% consumption, 10% for seed, 20% for making *chicha*, (a local beer) and 40% for sale. Average farm size is 1.0 hectare/family.

An agriculture committee elected by all community members administers the rotating fund. Its main function has been to provide certified potato seed. To date, in 1998 the recovery rate is 50% of disbursements. However, the committee is continuing its efforts to collect all of the delinquent debt, and has adjusted payments in accordance with each borrower's ability to pay based principally upon the respective production of each. The committee expressed confidence that all loans would eventually be recovered, and that community members would be willing to increase their individual contribution if need be to maintain the fund.

In Palca Pata, a meeting was held with the producers' committee and other community members to discuss the irrigation project, production of potatoes and garlic under that system, and the operation of the rotating fund. The irrigation project had begun under joint Chuquisaca

Sud/ADRA collaboration. It irrigates 85 hectares involving 42 families, and averages 2 hectares/family. Thus far, it has permitted two potato crops per year, and now the producers are broadening their crops to include garlic that is marketed in Santa Cruz for export to Argentina. A "juez de aguas" administers the irrigation system under the supervision of the Committee. A potato production committee also exists comprising 52 members who administers the rotating fund. It was not possible to establish the details of the fund during the visit.

In Sumaya a meeting was held with members of the producers committee to discuss the improvements to 13 km and construction of an additional 3 km of access road. Land holding is about 1.0 ha per family, and all production is based upon rainfall. The road lacks the drainage and other structures necessary for its maintenance. These are expected to be initiated later this year. The road has allowed intermediaries to reach the community, as production is sold at the farm gate due to the relatively greater distance to markets. A rotating fund is managed by the 28-member agriculture committee, but no detailed information on its functioning could be obtained beyond that it is used for purchasing improved seed potatoes.

El Centro was the final community visited. It was the largest community, and appeared to be the best organized and in possession of the best agricultural resources and potential. The irrigation system was the focal point of the visit. It includes a reservoir that will have a capacity of 1,500 - 2,000 cubic meters of water when full. This will irrigate up to 800 hectares and include 173 families. The system is being constructed with the collaboration of the community, the municipal government, the Chuquisaca Sur Project, and ADRA. The municipality is slow at making its contribution, endangering the success of the system. The community leaders said that the reason for the delay had been resolved, and the municipality's support would be forthcoming. When functioning, the system is expected to increase the production of potatoes, garlic, onions, and alfalfa. Alfalfa will be used for increasing milk production, garlic and onions for sale in Santa Cruz and possible export, and potatoes in Tarija. Market price information is obtained from Radio Tarija and community members. Sales are made either at the farm gate or in one of the markets listed above.

The second infrastructure project was a potato sorting and storage building constructed with ADRA support in food and materials and with community labor. The facility has a capacity of 100 MT. Potatoes are graded and stored according to use, e.g., certified seed, commercial sale for consumption. An agricultural committee manages the activity.

With irrigation, the community has been able to produce two crops of potatoes this past year. Of the first crop, 30% was consumed, 30% saved as seed, and 40% sold. Of the second crop, 100% was sold. Garlic is being planted for the first time, with the idea of sale in Santa Cruz and eventual export to Brazil.

The rotating fund is functioning and although recovery rates could not be obtained, the community is planning to increase its contributions gradually to maintain fund value and even expand its size if possible.

3.3.5 Strengths and Weaknesses by Cooperating Sponsor

3.3.5.1 PCI

A major strength of PCI is its proactive approach to multi-institutional collaboration. It focuses resources and allows for important activities to take place which otherwise would not have been possible. The Sacabamba irrigation project and the Challuma-Totora Pampa access road are two examples where this collaboration will effectively improve the lives of food-insecure communities.

It is also obvious that the impact of the PCI program to improve agricultural productivity in potato production has been an outstanding success. Some communities report up to a 40-fold increase in yields. The combination of the availability of improved genetic material, the financial assistance provided by the rotating fund, and the presence of PCI technicians has contributed to the local producers achieving these gains. The program has exemplified the collaboration between communities and external agents, especially the community's being able to express what it needs and the program technicians' willingness to listen and assist.

Another strength of the PCI approach in agriculture is that staff try to maximize human resources by "outsourcing" various parts of an activity, such as pre-feasibility studies, etc., so that the limited staff can take a more supervisory role and thus expand program 'reach'.

As with the other CSs, PCI is inadequately staffed to handle the marketing aspects of the DAP. This may be a result of its strategic approach of first increasing production, and then turning attention to marketing the increase. It is clear from all interviews that this is not how producers view their world. Almost all participants indicated that 40% of their production was sold, and only 30% consumed. This would argue for a strong marketing component from the outset. It is also curious that although PCI has a strong intervention in building access roads, fundamentally a marketing activity, it continues to believe that it has no marketing element in its income generation/agriculture component of the DAP.

A second potential weakness is the need to clarify operational and maintenance regulations and procedures for the irrigation systems and irrigation committees. From interviews with participants, this seemed to be a somewhat ill-defined aspect of these interventions.

3.3.5.2 FHI

The most striking aspect of the FHI agricultural program and its greatest strength is the five-phase approach it has adopted to manage activities in each community. Its unique value lies in defining exactly what change is desired, and thereby determining at what point FHI should leave a given community. Although reference dates are attached to each phase, the approach seems to be more output-driven than calendar-driven, appropriately so.

It is also obvious that the impact of the FHI program to improve agricultural productivity has been an outstanding success. Some communities report up to a 40-fold increase in yields. The

combination of the availability of improved genetic material, financial assistance provided by the rotating fund, and the continual presence of FHI technicians has contributed to the local producers achieving these gains. The program has exemplified the collaboration between communities and external agents, especially the community's being able to express what it needs and the FHI technicians' willingness to listen and assist.

Another strength is strong technical staff in agricultural production and organization, coupled with a number of manuals which are relevant, understandable, and effective in transmitting the essential concepts of an activity to the participants, e.g., irrigation.

As with the other CSs, FHI does not seem to have the necessary technical expertise to carry out critical marketing activity. Although FHI has an economist on its staff, and a just-hired agricultural economics Masters-degree holder, the marketing endeavor does not manifest a strong knowledge of certain basic marketing principles, e.g., specialization.

A second weakness is that FHI appears somewhat less disposed to collaborate with other institutions. FHI contends that there are few viable NGOs in the zone in which it is working, but the notable and effective collaboration between ADRA and Chuquisaca Sur, or PCI and JICA, for example, does not appear to be present in FHI activities. At least it was not highlighted in the communities visited.

3 3 5 3 ADRA

An essential strength of the ADRA program is its correlation with the desires and aspirations manifested in each of the communities visited. Along with the expression that each activity had sprung initially from community initiative and ADRA was helping those ideas to become reality, there was a clear understanding that ADRA would someday leave and it would be up to the community to carry on. In every instance when this issue was raised, the community response was that they were getting the help they needed so that they could continue, and were committed to do so. Many used the term "transformed" when talking about the impact these activities would have on their lives and those of their families.

It is also obvious that the ADRA program to improve agricultural productivity in potato production has been an outstanding success. Some communities report up to a 40-fold increase in yields. The combination of the availability of improved genetic material, financial assistance provided by the rotating fund, and the presence of ADRA technicians has contributed to the local producers achieving these gains. The program has exemplified the collaboration between communities and external agents, especially the community's being able to express what it needs and the ADRA technicians' willingness to listen and assist.

A second strength of the program has been the thoughtful use of food in Food for Work activities. When questioned about disincentives or other possible negative impacts, participants noted two important facts. First, the food rations helped them carry out the work because in these communities it was usually necessary to migrate during part of the year to obtain work to support

their families. Without the food, there would have been fewer persons in the community to provide the labor contribution to the infrastructure activities. Also, there seems to be an acute food shortage in these communities which corresponds to the agricultural production cycle. Provision of food at these times through Food for Work would seem to be an appropriate mitigation technique. At the same time, of course, the activity itself addresses chronic food insecurity.

The most apparent weakness in the ADRA agricultural program deals with commercialization. The interventions seem to be too much supply-driven, and the demand side is left rather ill defined. Discussions with ADRA staff lead to the conclusion that many basic concepts of marketing are not well understood.

A second weakness involves infrastructure projects. Most important among these is the standard practice of doing road platform improvements in advance of drainage and other erosion control works. The result has been that these works, when done, are often incomplete or badly carried out. This was apparent on all roads visited. The result is twofold. First, there is a loss of potential economic benefit that an access road represents. Second, there are negative environmental consequences that must be remedied.

A third potential weakness is the absence of clearly defined procedures for managing both irrigation maintenance and the rotating fund. The communities involved have made strong verbal commitments, and these, if supported by a strong "informal" social structure that compels compliance, may avoid a serious issue related to sustainability.

3.3.6 Summary

The overall conclusion is that the agricultural segment of the DAP is fundamentally sound. Each of the CSs has a slightly differing approach, but in general, all are addressing the root causes of food insecurity. This is confirmed by the comments received from participants interviewed in their communities. Interviews also confirmed that the origin and eventual ownership of specific interventions in each community resides with the community, not the CS.

However, there is a need for some greater attention to certain specific details, e.g., marketing, erosion control, reduced sedimentation of irrigation canals, exit strategies in order to full sustainability, and others. These aspects will be discussed in greater detail in Section 6.

3.4 FOOD-FOR-EDUCATION

3.4.1 General Problem Statement

Bolivia has one of the highest illiteracy rates in the Americas, 20% for the general population, 27.7% for women. Contributing factors are low school enrollment, generally low quality education particularly in the rural areas, and high drop-out rates. Girls are particular victims.

Recognizing these issues, three years ago in conjunction with substantial financing from the World Bank, the GOB published major legislation aimed at correcting this situation over the long term. This legislation includes the complete rewriting of all school curricula, provision of books and other educational materials to all classrooms, the refurbishing or reconstruction of many schools in the country, the use of indigenous languages, and the periodic training and ongoing supervision of teachers. The Educational Reform Law supports a significant reorganization of the school system throughout Bolivia.

At the specific behest of the-then First Lady of Bolivia, USAID/B and the Title II Cooperating Sponsors decided to support the Education Reform Law in the current DAP cycle. The methodology chosen to do so is the Food-for-Education component, implemented by all three CSs. The program is based on the idea that hot breakfasts reduce school drop-outs as well as increase students' ability to learn. The Food For Education program is considered by the GOB as an integral part of its efforts at educational reform and improving conditions in rural schools.

3.4.2 General Objective and Strategies

The objective of the component is enhance the economic earning potential of rural children by keeping them in school, thereby giving them a better chance to continue on to Secondary school and beyond. The aim is to decrease the rate of school drop-outs, particularly in Grades Four through Eight, and increase the number of girls who graduate from the Eighth Grade.

The strategy to do so is based on the economic earning potential of young girls by offering a school meal program that is sufficiently attractive that it is in the economic interest of the rural family that the young girl (and her brother, too) come to school each day, and eventually complete the primary school curriculum.

There are several indirect effects also. One widely reported by teachers is an increase in cognitive ability that the children demonstrate after eating the food. Given the poverty of the zones in which the Title II DAPs operate, a number of children come to school without having had any breakfast at home. School officials widely report that the delivery of a school meal sometime during the morning makes the children more alert and energized for the remainder of the day. A second indirect effect may be some nutritional gains that come about because of the ration.⁹

The ration has been standardized among the three NGOs at 2.6 kg per schoolchild per month. As carried out in the majority of schools, this ration allows the child to have a hot drink of CSB porridge three or four times a week, a 6 to 8 ounce bread roll every day, and an oatmeal-like porridge of bulgur wheat twice a week. Sugar, cooking oil, cocoa and salt are purchased locally by the CSs to complement the imported food ration. In one area (as will be seen), the children benefit from a serving of high-protein lentils twice a week also.

⁹Unlike Cooperating Sponsors carrying out school feeding in some parts of the world, the Bolivian NGOs do not measure nutritional impact.

Other key components of the NGOs' programming are (1) the establishment at each school of a parents' oversight committee responsible for supervision of the activity and food preparation (all rations are "wet" rations, i.e., served at the school), (2) a cash contribution from each family for the purchase of firewood, yeast, condiments, transportation costs and the like, (3) a cash contribution from the municipality per child to help defray program costs— also the municipality's assuming responsibility to transport the food from the CS warehouse to the school on a timely basis, (4) supervision and reporting provided by the parents' committee and the school professors. In some isolated cases, the municipality also contributes milk, meat or other products to the ration.

3.4.3 Summary of Data by CS

In FY '99, PCI is working with 510 schools in Cochabamba and Potosí and is delivering a daily ration to 55,000 children. Imported AER tonnage dedicated to this component is 743 MTs.

In FY '99, FHI is working with 1,016 schools in four Departments and is delivering a daily ration to 65,000 children. Imported AER tonnage committed to the activity is 993 MTs.

ADRA is working in FY '99 with 441 schools in Camargo and Culpina (and the La Paz, Viacha, Inquisivi and Quime areas) delivering a daily ration to 32,200 children. Imported AER tonnage dedicated to the activity is 524 MTs.

3.4.4 Findings by CS

In field observations, there were not many differences between the program of one NGO and the others. The following are key findings. Several patterns will be commented on in the Generalized Findings section.

3.4.4.1 Finding for PCI

Three schools were visited during the field observation, of 154, 260 and 252 children each. In Mamanaca, food had been received once in March. Food storage was good. Food preparation was accomplished by the parents' group. Professors reported that 80% of the children come to school without having had breakfast (a somewhat doubtful assertion given the semi-urban character of this school). The children like and eagerly consume the food each day, and the teachers note an increase in children's attention after the meal. Two recommendations were that milk be added to the ration and/or that a school lunch program be instituted. In this school, there is a notable drop-off in girls' attendance in the Fourth Grade.

In Matarani, the food has been received three times since March. Files of the food arrival were inspected. Food storage was good though there were reports of rats. Food preparation was accomplished by the parents' group. The children consume the food each day, but there were observations that they "get tired" of the same thing day in and day out. Teachers note an increase

in children's attention after the meal at least until about 2 00 PM Two recommendations were that rice be added to make it a heavier ration, and a request was made for a gas stove In this school, there is a notable drop-off in girls' attendance in the Fifth Grade

In Sacamamba, the food has been received three times since March. Food was stored on the floor and recommendations were given to the professor to improve the situation There were no reports of rats Food preparation was accomplished by the parents group, an industrial gas oven allows the baking of high-quality bread Because of one mother's not arriving, the food did not get served this day until 1 00 PM One-third of children interviewed indicated they had come to school that day without having eaten anything— a figure made believable by the rural setting of this school Two recommendations were that milk be added to make it a heavier ration, and for a school lunch program In this school, there is a notable drop-off in girls' attendance in the Third and Fourth Grade

3 4 4 2 Finding for FHI

Six schools were visited during the field observation of 168, 150, 158, 62, 132 and 175 children In Molle Molle, the food had been received once in April (meaning school had been running for two months without food) Food storage was adequate, but the room was also used to store cement Food preparation was accomplished by the parents' group Bread was full of ashes because it had been cooked in an earthen, bee-hive oven Two recommendations were that milk be added to the ration, and since firewood is scarce in this zone, a request was made for assistance in buying a gas stove In this school, there is a drop-off in girls' attendance in the Fourth Grade

In Poquera, the food was reported to be received without difficulty Food storage was good The professor was just starting a file and observed that he had not received any documentation from his "nucleo " Bread was of good quality In this school, there was no drop-off in girls' attendance

In Playa Ancha, the food was received once in April for three months Food was being stored in a temporary, but adequate, structure Food preparation was accomplished by the school guard, not the parent group Bread was of good quality Most children come having eaten at home Improvement in children's energy and attention levels was reported In this school, there is a drop-off in girls' attendance in Fifth and Sixth (but not Seventh) Grades There was also an unexplained dramatic difference in girls in First Grade, two-thirds less than normal

In Yoroqa, the food was received once in March for three months Food was being stored adequately, monthly registers were available and reviewed Food preparation was accomplished by the mothers in a dingy, smoke-filled room In this school, there is a drop-off in girls' attendance in First and Second Grades

In Rodeo, the food was received once in March for three months Food was being stored on somewhat rickety benches but adequately, pans were observed to be quite dirty There is a

substantial ravine between where the food is cooked and the school, making one question how the mothers manage to get the liquid rations to the children at all. Children were reported more alert after the ration. This is a zone where firewood is very scarce and the school requested project support to buy a gas stove. The request "was taken into consideration but no promises could be made." In this school, there is a drop-off in girls' attendance in Third and Fifth Grade.

In Ckara Ckara, the food was received once in March for three months and food stocks had been exhausted at time of the visit. Cooking takes place in the open air. The professor is trying to get financing for an industrial oven for bread-making. Children were reported more alert after the ration, though most arrive to school having eaten at home. In this school, there is a significant difference in girls' attendance in Pre-school, Second and Fourth Grade.

3.4.4.2 Finding for ADRA

Four schools were visited during the field observation of 190, 29, 73 and 271 children. In Muyukiri, the food had been received for the second time in May. Food storage was adequate, but the room was also used to store cement. Food records were found not to be up-to-date, and, in fact, filled in in advance. Food preparation was being accomplished by the mothers, but when the commodities for the day were weighed, the ration was found to be 25% short. The quality of ADRA supervision in this school may need study. In this school, there is a marked drop-off in girls' attendance in the Sixth Grade, less than half of boys.

In Carusla, the food had been received for the second time in May. Food storage was adequate. Food records were up-to-date. The teacher reported that four out of five children come to school in this small rural school not having had anything to eat beforehand. Twice a week, the program provides lentils to the children that are enthusiastically received. One suggestion was that the project assist the school in purchasing an oven for bread-making. In this small school, there is no difference in boys' and girls' attendance.

In Villa Flores, the food had been received for the second time in May. Food storage was adequate. Food records were not being used properly. Food storage was good. Twice a week, the program provides lentils to the children that are enthusiastically received. Because of the school feeding program, this school has been able to go to uninterrupted teaching (*hora continua*) thus improving the quality of the education. In this school, there are significantly fewer girls than boys in First and Fifth Grade.

In Villa Abecia, (the largest and best-equipped school visited during field observations), the program functions under the competent oversight of a woman president of the parents' committee. Food is prepared by a full-time cook hired by the municipality, also the mayor contributes milk and meat to the ration, making this a significant part of the children's daily diet. This school is atypical of the program in almost every respect. Still, for girls there is a dramatic difference in Seventh Grade, one-third attendance compared to boys in this semi-urban school.

3 4 5 Strengths and Weaknesses by CS

PCI's Food For Education program works with larger schools, as evidenced by the AER figures. It distributes once every two months. The PCI warehouses in La Paz and Cochabamba were visited during field observations and, except for a need for better cleaning in the Cochabamba warehouse, all files and operations were found to be in order. PCI's FFE has a staff of one regional supervisor and three field staff who visit each school three times during the school year. There were no significant weaknesses noted in the management of the program.

FHI's Food For Education program works with smaller schools, as evidenced by the AER figures. It distributes once every three months. The FHI warehouses in La Paz and Sucre were visited during field observations. Sucre files and operations were found in order. In La Paz, FHI recently sustained an audit from the Regional Inspector General (RIG). The RIG's written report has not yet been prepared, but FHI has made some adjustments to its operations supposedly as a result of RIG recommendations. In order to cut down on internal loss reports, one shipment's shortfalls are being made up from others in order to show 'clean' receipt. This complicates the paper trail, is counter-productive to transparent warehouse management, and is almost surely a local mis-interpretation of what the RIG recommendation will eventually suggest.¹⁰ FHI's FFE program has a staff of one national supervisor and four field staff who visit each school three times during the school year. There were no significant weaknesses noted in the management of the program.

ADRA's Food For Education program works with smaller schools, as evidenced by the AER figures. It distributes once every two months. One innovation of ADRA, and also of FHI, is the interpretation that all schools in the project areas will eventually be included in the Educational Reform, thus the program works with all, not just the ones designated as in Stage Two of the Educational Reform. The ADRA warehouse in Camargo was visited during field observations and files and operations were found in order. ADRA's FFE program has a staff of one national supervisor and four field staff who visit each school three times during the school year. There may be some weaknesses in the schools' ability to maintain appropriate inventory records, as well as in the schools' adequately tracking food consumption. However, the sample size of field observations was too small for this to be a generalized finding. The national director indicated that ADRA had to make significant adjustments last year, including the hiring of additional field supervisors to bring the program under adequate managerial control, so perhaps some of those gains have yet to be consolidated.

3 4 6 Generalized Strengths and Weaknesses

Process Observations

In general terms, for all three NGOs, the FFE seems to be a smoothly running logistical operation.

¹⁰This observation is not meant to suggest any anomalies in warehouse stock or commodity mis-use but only poor paperwork. Receipt of the RIG document will help clarify what is the substance of the recommendation.

Warehouse management and food distribution evidently take place without major disruptions once the food arrives in the country (There have been some delays in the food's arrival in years past, however) There is a two-month delay in starting up food distribution which could perhaps be shortened in CY '00 now that the program has become well known in the various school districts

FFE field personnel visit each school three times a year Given a historical context where prior to these DAPs, FFE was not run as carefully as it is now, perhaps there was the need for such a level of supervision Now, however, staff make a distinction between the larger, peri-urban and *nucleo* schools where three visits a year are still required, and the smaller, isolated rural schools where the parents' committee takes such care of the project that three visits per year are probably excessive

There were numerous comments and suggestions throughout the field observation that the ration could be increased In fact, the evaluators believe that taking into account the long logistics chain that extends from the U S farmer to rural Bolivian children, the quantity that comes out at the end of the system is rather small one hand-sized bread roll and a glass of hot CSB on most mornings There are successful experiences adding lentils, milk and meat to the program which increase the program's output

Currently, schools without gas ovens are cooking the rations over wood fires for usually two hours a day— sometimes even out in the open In many places where wood is not available, the children bring in branches of bushes every day The environmental damage in tree-scarce Bolivia could be considerable as a result In larger school without gas ovens, schools with 150 children or more for instance, substantial environmental damage is likely resulting from the program

Program documentation calls for a school "breakfast" However, it is physically impossible for the volunteer mothers to take care of their own family needs, get to the school to begin the two-hour cooking process and serve before 10 30 AM In any case, 10 30 is the time of 'first recess' in most schools Some schools even vary food distribution to coincide with 'second recess' and serve the ration as late as 11 30 and still achieve good success

ADRA and FHI are conceiving of the project as directed to all schools in their target area, since sooner or later all schools are meant to be incorporated into the Educational Reform program This seems like an appropriate strategy given the widespread poverty characteristic of these zones At the same time, it eliminates any hint of discrimination and avoids the difficult task of trying to explain why the most geographically isolated and smallest schools do not benefit from the program

The program is aimed to improve education by making the school a better learning environment Outside the school compound, frequently the NGO is undertaking a health activity, or a potable water or sanitation project, or a hygiene education activity It seems somewhat 'tunnel-visioned' for the NGO to be promoting one-on-one activities in the village without addressing the collective needs of the village in the school setting at the same time

There are some statistical inconsistencies in record keeping between Ministry data at the school and District that are causing confusion in the CSs regarding the real school numbers

The amount of counterpart contribution being charged to the municipalities varies from NGO to NGO, for no valid reason

One peripheral, health related activity proposed by the NGOs, de-worming, is being carried out with municipal funds in some project areas from FY 1999. Two other activities, testing for hearing and testing for eyesight, are not being carried out by any of the three NGOs. Testing for vision (at least) requires only minimal training, and could easily be included in the CS supervisors' responsibilities

Impact Observations

Field observations indicate that in almost every school in one grade or another, something negative is happening to girls' enrollment in one grade or another, and enhanced female graduation is an explicit project goal. NGOs have not directed any attention to this issue, having limited themselves to supervising the logistics aspects of the project

Several years ago for budget reasons, the NGOs took the decision to reduce the food rations from 3 kg /mo to 2.6 kg. Also when the goal of Food for Education was taken out of the USAID/B's Health Strategic Objective and put in the Economic Development SO, it seems that a concern with the program's nutritional consequences was also lost. It would be interesting— even if on a pilot basis and in a few sentinel sites— to know what the influence of the ration is on the family's food basket (i.e. its economic attractiveness). It would also be interesting to see whether the delivery of food to rural Bolivian children is producing any nutritional gains. ADRA and FHI have trained nutritionists who could look at these question, if only from a 'case-study' point of view

Finally, all knowledgeable observers know that improved education is multi-causal. While the current NGO program is directing attention to only a very small part of the causality chain, program goals are expressed in terms of improved school performance. In order to be able to leverage more education impact, NGOs could be thinking about a program directed more tightly to improved *education* rather than simply the distribution of food

3.4.7 Summary

In general terms the FFE component is running smoothly. As reported by the NGOs Annual Progress reports, it seems that program goals are being accomplished: girls' enrollment is up, as is girls' retention, and school desertion is down for both sexes. As long as the international donor is willing to commit resources to this activity, there will be hungry children who will benefit from the resource transfer and the program will likely accomplish its goals. How to pilot activities to make the program more effective in achieving its goals will be discussed in the Conclusions and Recommendations section

4.0 CAPACITY BUILDING

4.1 RELATIONSHIP TO PRIVATE AND PUBLIC SECTOR DEVELOPMENT ACTIVITIES

Public Sector Institutions

The Popular Participation Law has been the single most important factor in empowerment for community organizations such as farmer unions that function in most rural Bolivian communities. Under this law, communities have been given the power to submit development requests to municipalities for inclusion in annual budgets and operating plans. Municipal governments receive funds to sponsor infrastructure projects, health, education and other development activities in their areas of jurisdiction.

Title II CSs have been able to enhance their programs under the Participation Law. Capacity building and sustainability have increased in several aspects of the Title II program as a result. Title II program coordinators consult with municipal governments to support specific activities, thus obtaining a degree of ownership on behalf of local partners. One example is the school-feeding program, where municipalities contribute a fee per student towards school breakfasts, and cover the transport costs for the food. In some municipalities, funds have been contributed for irrigation projects, roads, and construction and equipment of health posts. All municipalities are required to finance the Basic Health Plan, under which funds are given to district and area hospitals to cover health care costs for patients. CSs play a role in providing information and guidance to municipal governments regarding needed areas of support especially health, an area that is often not a municipal priority.

Capacity building is also enhanced through the relationship of the CS with MOH institutions. All CSs participate in CAI meetings where health data are analyzed, activities are evaluated and decisions take place. The capacity of MOH services to meet the needs of the population adequately can be improved through the relationship with Title II MCH programs, if institution building objectives are included in annual operating plans. This has not been the case among the three CS to date.

Areas that need strengthening are training and supervision for CHWs and traditional birth attendants, improved logistics systems to supply health posts and CHWs with basic medicines, and an incentive program for volunteers.

As mentioned in the section on education, perhaps there is a role for the CSs to strengthen the quality of education of Ministry of Education teachers that is presently being missed.

Non-governmental Organizations

PCI promotes multi-institutional collaboration in agriculture and road construction. In Sacabamba, a large irrigation system is being built with contributions from PCI, JICA, CIPA, the

municipality and the community. In Tacopaya, a road improvement project is a combined effort involving PCI, FDC, JICA, the municipality, and the communities. In health, PCI coordinates closely with MOH services, and in W&S with PROSABAR, "Desarrollo Comunitario" and CERES.

ADRA has some collaborative relationships, notably for the development of an irrigation system in El Centro that is being constructed with the municipal government and the Chuquisaca Sur project. In health, ADRA coordinates some activities with Esperanza Bolivia in Camargo and San Lucas.

Although FHI coordinates with other institutions in the Tomoyo irrigation project in Potosi, FHI seems the least disposed of the three CS to inter-institutional collaboration. Joint activities between the CS and other agencies in terms of training, supervision or technical aspects, with the purpose of enhancing the capacity of local organizations were not apparent.

4.2 COMMUNITY PARTICIPATION

All CSs work with community volunteers in the MCH component. PCI trains CHWs and TBAs and links them to health services where feasible to provide continued training and support. FHI trains and supervises volunteers, and is working with municipal governments to improve incentives and continued support. ADRA trains three types of volunteers--CHWs, early childhood development promoters and home economics promoters. CHWs are provided with credentials by the MOH, and ADRA is discussing other incentives with municipal governments. The stronger the links between volunteers and permanent institutions, the better are the chances these volunteers will continue to be active after the LOP.

Village water committees are formed in communities where W&S projects have been implemented, and are taking responsibility for the water system. In many cases, tariffs are being collected to cover maintenance costs.

In the food for education program, parent oversight committees have been formed to supervise food preparation. Families contribute cash to purchase additional food items used to prepare meals with the donated food.

In agriculture, community organizations oversee the operation and maintenance of infrastructure works and manage a rotating fund. In some communities, a "water judge" is responsible for maintenance of the irrigation system. FHI forms community organizations that provide financing via a rotating fund. These local organizations have learned to manage funds and feel confident they will continue functioning after FHI presence terminates. FHI implements a five-phase plan with the objective of empowering the cooperative to gradually manage its own affairs. ADRA enhances community ownership by supporting agricultural projects that the community has decided upon and communities indicated they are committed to continue after ADRA's departure.

4 3 LINKAGES BETWEEN COMMUNITIES AND LOCAL INSTITUTIONS

Generally, the CSs engage in some activities to link communities to local institutions, especially in the case of the MCH program, where CHWs are connected to MOH services. However, these relationships vary depending on the receptivity of the MOH personnel involved. Although PCI has excellent coordination with the MOH, in more remote areas there is no link between the area hospital and the community, nor between the municipality and the community in health matters. An example is the community of Huellas in Ayopaya, which has not been visited by the MOH auxiliary nurse in months. In these areas, the CHW received support from PCI, but now has no supervision nor access to basic medicines.

Education for community members regarding leadership, decision-making, project design, implementation, and accounting would give them the skills to be more proactive in their own development. The Popular Participation Law has created a mechanism for community projects to be presented to and financed by the municipality, however many rural communities do not have the skills to present and defend a project. This would be an area the CS could provide assistance in, especially before ending the project cycle.

4 4 COST RECOVERY AND INCOME GENERATION

As mentioned above, municipal governments are providing contributions for health, education and infrastructure projects in conjunction with CSs and other agencies. Families are also making contributions to school breakfasts and water and sanitation systems. Income generation activities have not been a major focus of the Title II programs, with the exception of agricultural production. In the MCH program, agricultural projects, such as small animal production, solar greenhouses and gardens, would help unite women and could also contribute to nutrition.

4 5 ENVIRONMENTAL AWARENESS

From the visits to the communities and interviews with PCI, FHI and ADRA staff, it is evident that personnel are aware of the environmental impact of their projects. They understand that good environmental practices are not some special category, but that good agricultural practices or good engineering are good for the environment. There is little doubt that environmental concerns are an integral part of the infrastructure design, training and technical assistance activities.

However, there are some shortfalls in the application of these principles and concerns in the infrastructure works visited during the evaluation. A more specific discussion of this is contained in Section 6 below.

5.0 MANAGEMENT AND ADMINISTRATION

5.1 General Management Issues

A number of managerial themes arose during the course of the evaluation. A general management section is broken down by NGO, followed by a discussion of monetization, Call Forward management, collaboration, communication, human resource management and monitoring and indicators ¹¹

5.1.1 General Management Issues in PCI

One strength of PCI is its recent efforts that operational budgets be prepared at the local level, to be consolidated in La Paz. This is an important step toward devolved and decentralized authority, and in making field offices more responsible for achievement of their annual targets.

Perhaps the most important observation for PCI, noted earlier, is that it suffers from a lack of *strategic vision* in its programming. There are approximately 1,150 communities in PCI's project area. Because of PCI's floating health component, there is no 'anchor' to help the organization determine where it should be working, what programs it should be implementing in those areas, and what would be an appropriate allocation of resources among each sub-component. The health component moves from one village set to another from one year to the next. W&S trails along, trying to supply water to all health villages and falling farther behind each year and FFW roads are built throughout the area with little reference to an overall plan or to health or W&S. If the organization were to develop a strategic plan for working in fifty or sixty percent of those villages (say), with the goal of significantly improving the health and lives of those participants, PCI would be in a better position to decide when and how to implement its health, water and roads interventions in those (and only those) villages. This would bring a far greater sense of cohesion to the program than currently exists, where, it seems, most program responses are developed in isolation from what else is going on in PCI, and in response primarily to municipal overtures.

PCI's expansion from four provinces in FY '97 to thirteen provinces in FY '98 is proving a tremendous challenge. Management staff and systems, personnel procedures and approval and supervisory mechanisms that could have been quite appropriate to a small NGO seem not to be working to full satisfaction. This is completely understandable. The tripling of any portfolio brings with it considerable organizational stress and engenders a long process of organizational adjustments, some capable of being planned in advance, some forced on the organization by immediate crises.

¹¹The focus of the mid-term evaluation was almost exclusively programmatic rather than administrative or managerial and heavy field travel effectively limited the ET's spending significant time looking at management issues. Nevertheless, discussions with field staff and informal sharing among colleagues during the travel brought to light some subjects in the managerial realm. The comments are offered to stimulate NGO thinking.

PCI's management of finances has also suffered setbacks in FY '99. At time of the mid-term evaluation, the organization is suffering a cash-flow crisis which will have the effect of significantly lowering the achievement of FY '99 targets. Some of the responsibility for the situation lies completely outside the organization: a one-month delay in USAID/W's approval of the First Call Forward due to the need for approval of IEEs, and sluggishness in the local market in buying flour once it arrived. Part of the crisis lies in the organization's expansion (for instance, the operative reserve fund which covered four months of expenses in a 4-province operation has now been exhausted in two months in a 13-province operation). Part of it may also be attributable to inexperience in handling a significantly larger budget, and incurring peripheral expenses before the year's cash-flow had been assured.

PCI field staff could benefit from more frequent contact with senior management. Some feelings were expressed that "they don't know who we are." Though this is a perennial complaint in rural field staff in a country as vast as Bolivia, it is likely that more frequent field *supervision* by senior managers (not just field visits) along the lines of that provided by the ET, would improve staff performance and also staff morale. The evaluation instruments (Appendix H) could be used as a check-list in such travel. The ET would dare to suggest that each senior manager could travel 25% of the time, one week a month, in pursuit of such improved communication, performance and morale.

Some PCI field staff were seen to be relatively "de-energized" and not on the cutting edge of their profession. Some of this may be attributable to factors mentioned above. Some of it may have to do with a feeling of having to work with a too-limited budget, or with too great a work-load, or with a system that does not value as much as it could individual contributions. New energy and charisma (*mistica*), and perhaps new personnel need to be infused to PCI to get over this hump.

Many of these issues are summed up in the term Organizational Development and there are consultants specialized in this line of work. One of the first steps in an OD exercise would be to conduct an "organizational audit" or a "climate survey," looking at such issues as staff morale, remuneration, work loads, channels of communication, and levels of delegated authority. PCI reports that it requested and received USAID approval to hire such a consultant in November, '98, but that funds could not be found to pay for the work. PCI would be well advised to hire an OD consultant to begin addressing many of these issues— in sum, to help it move from being a small NGO player to a mid-sized one.

5.1.2 General Management Issues in FHI

FHI seems to have handled the jump in project areas in FY 1998 quite well. FHI documents are clear and well written, descriptive, informative of details, logical and coherent. FHI annual reports are similarly clear and provide the reader with a quick picture of a well thought-out, coherent development program on its way to achieving program goals.

FHI field personnel were seen to be relatively full of energy and on the cutting edge of their jobs. There is an esprit de corps in FHI and an enthusiasm for work— as well as an appreciation

between La Paz and regional staff of the different roles of both. This is excellent. However, there were reports that several key members of the staff are reaching 'burn-out' and making plans to resign in the near future. While some of this is inevitable in a heavily field-intensive operation, it should be a wake-up call to senior FHI management that remedial action may be necessary. Losing key players would represent a setback to FHI program quality.

FHI field staff could benefit from more frequent contact with senior management. Feelings were expressed that "senior staff don't know who we are." Though this is a perennial complaint in rural field staff in Bolivia, it is likely that more frequent field *supervision* by senior managers (not just field visits) along the lines provided by the ET, would improve staff performance and also staff morale. The evaluation instruments (Appendix H) could be used as a check-list in such travel. The ET would dare to suggest that each senior manager could travel 25% of the time in pursuit of improved communication, performance and morale.¹²

One of the areas in which FHI may need to look is managerial systems, improved decentralization and growth of line authority. FHI budgets are still done somewhat vertically—budgets are prepared by La Paz staff with little input from the regions. Money is allocated on a lump-sum basis in program categories on criteria that are not understood by field staff. Regional officials were reported to 'compete' for project resources on a first-come-first-served basis, preparing projects that are reviewed by FHI La Paz before funding is approved. FHI La Paz and the regions have a different view on how 'participatory' this process is. In the opinion of the ET, this system does not foster good, decentralized decision-making, in addition it has the effect of keeping most of the financial expertise in La Paz. In a related area, it was seen that line managers have little say over their budget or field personnel. When one community requested what to the evaluator was an appropriate request, the response of the program manager was "I will have to talk to my superiors." Thus, a certain amount of "disenfranchisement" is still a part of FHI systems. In an organization committed to community participation, devolution of managerial control and line authority are important collateral concepts.

As noted in paragraph 3.2.4.2, FHI's financial system of allocating partial salary charges to one component or another—or even two different donors—may lead to confusion on the part of the staff and the donors who is actually being paid by whom. Staff should be made aware of the components they are being charged to regularly. Co-sharing of staff salaries among different donors should be avoided unless both donors are fully aware and approve the charge.

'Span of control' is an issue in FHI. The La Paz structure was not reviewed, thus no comment will be offered. According to the organizational structure of the Sucre office presented to the ET, the Sucre regional manager has eighteen direct reports. This is clearly unmanageable by an order of magnitude. Current management theory suggests the maximum direct report load is six to eight. Clearly, FHI needs to do some work on span of control in its regional offices.

¹² It should be emphasized that this comment is specifically not directed at FHI program managers who were seen to travel frequently—who were knowledgeable of their communities and had visited these villages before—who were enthusiastic participants in the field travel.

Echo will be made of the funding observation in the section on health. A review of the FHI 1999 PAA budget shows that 41% of costs go to personnel, an appropriate amount¹³. Thirty one percent goes to program equipment and materials, again, likely an appropriate amount. The division between components, however, is noteworthy. Of equipment money, 65% goes to agriculture, 28% to water and sanitation, 4% to health— and only 0.8% on educational materials. Even taking into account the capital-intensive nature of agriculture and water and sanitation, and the relatively less capital-intensive needs of health, this is a disproportionate division of resources. FHI needs to reconsider whether it is devoting too little of its 'spendable' resources to health, supposedly the glue which holds the program together.

Many of these issues are summed up in the term Organizational Development and there are consultants specialized in this line of work. One of the first steps in an OD exercise would be to conduct an "organizational audit" or "climate survey," looking at such issues as staff morale, remuneration, work loads, channels of communication, and levels of delegated authority. FHI would be well advised to hire an OD consultant to begin addressing many of these issues— in sum, to help it move from being a small NGO player to a mid-sized one.

5.1.3 General Management Issues in ADRA

ADRA field staff could benefit from more frequent contact with senior management. Though the situation in ADRA is better than in some NGOs, managerial visits are still reported by staff at only once every two or three months or so. Though this is a perennial problem in rural Bolivia, it is likely that more frequent field *supervision* by senior managers (not just field visits) along the lines provided by the ET, would improve staff performance and also staff morale. The evaluation instruments (Appendix H) could be used as a check-list in such travel. The ET would dare to suggest that each senior manager could travel 25% of the time in pursuit of improved communication, performance and morale. Given the geographic isolation of the Camargo/Culpina region, it is likely that such travel would have to be about every six weeks, for a ten-day period.

The subject of appropriate managerial discipline was mentioned in the section on water, with the comment that it may be more difficult to discipline low performing workers in ADRA than in some other organizations. Three observations come to mind. One W&S staff member might benefit from disciplinary action. In health, it was observed that one field technician of three years employment "doesn't like to travel to the field" and has not provided adequate training and supervision to mothers' groups, community volunteers or his subordinates for some time. Moreover, in a predominantly Quechua area, not having appropriate language skills is a serious drawback to performance. Again in W&S, adequate supervision and corrective strategies were reportedly left with field staff after frequent La Paz visits, but were not acted upon— with evidently no sanctions imposed for non-compliance. In discussions with ADRA leadership in La

¹³ In the experience of one of the evaluators, intensive field-based activities frequently require 40% of budget to go to staff support. Also the FHI relationship between salary support and project purchases (seeds, cement, pipe, etc.) is 1:16.1, in line with the evaluator's experience.

Paz, the ET was shown some recent work on personnel supervision forms, feedback loops, self-assessment tools and annual monitoring and evaluation systems, with the explanation that ADRA has been working on these areas over the last year or so. The observations from the field would indicate that more work may need to be done in order to institutionalize improved personnel systems, and reward high performers and discipline low performers. ADRA leadership submits that it is fully committed to an appropriate exercise of managerial authority.

In a similar vein, it appears from briefly visiting the ADRA operation in Camargo/Culpina that the programmatic structure of that office needs to be strengthened. It was reported to the ET that there are over 300 food-for-work projects implemented in the Camargo region, and that ADRA is "driven" to use food in order to generate the necessary cash flow (via monetization) to keep the organization afloat. While this fact is not *per se* a bad thing, one must ask what quality of projects is being implemented, and what level of supervision is being provided. Recently, four additional road supervisors were hired, bringing the total to six. This was a minimum response necessary to supervise such a large number of projects. To whom those engineers report is one issue, another (as seen elsewhere) is whether the quality of non-road projects is up to standards. It is likely that ADRA needs to look at work loads and project quality in its Camargo/Culpina office.

One of the areas that ADRA may need to study is managerial systems, in the sense of improved decentralization and growth of line authority. There was evidence during the trip that line managers do not exercise due control over their portfolio or their staff. The ET postulates on the basis of anecdotal information that a culture of "not disagreeing with the boss" is still firmly in place in ADRA. ADRA leadership submits that it is working on this subject, but facing cultural barriers that make the process a slow one, a statement the ET agrees with. More remains to be done, however. ADRA personnel do not demonstrate some of the autonomy seen during other parts of the field observations.

Many of these issues are summed up in the term Organizational Development and there are consultants specialized in this line of work. One of the first steps in an OD exercise would be to conduct an "organizational audit" or "climate survey," looking at such issues as staff morale, remuneration, work loads, channels of communication, and levels of delegated authority. ADRA would be well advised to hire an OD consultant to begin addressing many of these issues—in sum, to help it move from being a small NGO player to a mid-sized one.

5.2 Monetization Issues

The monetization program suffered serious problems in FY 1999 because of lack of product to sell during a six-month time-frame. As a result of this hiatus, two things have happened. The first is a cash-flow crisis for at least one of the CSs that will have an impact on its ability to complete FY '99 DAP targets.

The second and perhaps more severe consequence has been that the monetization program has suffered a setback in its effort to be seen as a reliable and serious participant in the wheat flour

market in Bolivia. By being absent for an extended period of time, Title II monetization is now viewed by its former clients as a *secondary* source of supply, useful principally to complement primary suppliers. (Prior to this, these same clients used the monetization program as their principal source of supply.) The effect is that potential buyers are more reluctant to participate in the bidding process, when they do, they offer lower prices as a hedge against the heightened perception of risk associated with the monetization program.

It will take time to regain the confidence of the marketplace, but it can be done. The most important step that should be taken immediately is to reestablish links to previous buyers. This can be done by calling on these clients and explaining the reason for the six-month hiatus, and the steps being taken to prevent a reoccurrence. This will demonstrate that the program is not only interested in its own objectives, but also is concerned for its clients' well-being. Hiring a person with marketing acumen in this regard would be a worthwhile investment.

Three curious and unsettling proposals have come to light recently regarding the monetization program. First is the idea to provide credit to purchasers. This must be viewed with much skepticism because it would have the PM take on additional responsibilities and administrative overhead as a financial institution. Second, lack of sales is not a financial issue that can be solved with a credit program, it is a *credibility* problem, as described in the preceding paragraphs, and can only be solved if treated as such.

Moreover, a potential loss of purchasing power from any delay in payment could be expected. The buyers are already discounting their offers because of the need to pay cash. It would be unwise to think they will raise their bids in response to a credit program.

The second item of concern is the idea that some NGO personnel still believe the monetization program can "time" or somehow regulate the market. A recent decision of the Monetization Committee to reject all bids presented at the first sale because the committee considered them too low illustrates this point. Subsequent to that offering, the world market price for wheat flour fell, and has never returned to the price offered at that time. Thinking that the program could time sales to coincide with market highs, or withhold sales to force a rise in prices, has probably exacerbated the current financial crisis being experienced by the one CS. To repeat, the only avenue to achieving the highest market clearing price is to be a reliable supplier and have an open, fair, and competitive bidding process.

The third disquieting idea is to increase the role of the monetization program in retail sales. The justification for doing so seems to be the idea that collusion exists among the current buyers to fix an artificially low price, although the analysis done of the program in the Autumn of 1998 concluded the opposite and no subsequent data have been produced proving otherwise. It is as though monetization program, including the CSs member board, view their clients as some form of "enemy." No business can long succeed with such an attitude, and the monetization program is without question a business. A recent document produced by one of the CSs proposes to "[p]ermitt small buyers to purchase flour through 'direct sales' from PM at prices somewhat similar to that paid by larger buyers." This is the wrong approach. It increases the administrative

overhead of the PM, it tries to fix a price rather than capture the market price, it makes the program look riskier to potential buyers as the retail store may be seen to undercut the auction process, and it will provide additional grist for those in the Bolivian market who want to end the program because they are uncomfortable with the level of competition it represents. The most effective solution is to adjust lot sizes to allow smaller purchases.

The ET recommends that the PM take the necessary actions to reestablish regular business relationships with their buyers. The ET also recommends that PM not move into providing credit for purchases, nor expand its retail sales operation, but rather reassess the minimum lot size as a way to encourage greater participation in the regular auction process by smaller-scale buyers.

5.3 Call Forwards and Food Management

The management of Call Forwards seems to be a never-ending saga. The same procedure has been used since the beginning of the Title II program, but every year problems arise. The problem of later-than-expected arrivals of commodities that recently occurred in Bolivia seems to have resulted from a series of factors: a late date for the FY 1999 PAA reviews, a delay in the preparation of the IEEs for approval in the U.S., and a large number of IEEs reaching USAID/W for approval at roughly the same time. The result was that the CSs in Bolivia were expecting an arrival in January, which did not materialize until March. Also, there appears to have been no communications from the U.S. to advise of the change of date, nor were there any attempts locally to follow-up and make sure everything was happening as planned. Improved communication is clearly indicated if this is to be avoided in the future. Also, because the CSs decided to submit their Call Forwards early in the Fiscal Year, a "feast-or-famine" (in this instance a "famine-or-feast") situation occurred.

The ET recommends that the CSs, both at the country and headquarters levels, along with USAID/B and USAID/W/BHR/FFP review their communication procedures so that any changes in anticipated arrival dates are known beforehand by all involved parties.

It also occurs to the ET that given the fact that Bolivia is one of the three countries in the world where DAP authority has been delegated to the local Mission — or is about to be, all the steps of Call Forward review by the CS's Head Office and by USAID/W may no longer be necessary. The ET recommends that USAID/B and USAID/W/BHR/FFP, in collaboration with the Cooperating Sponsors' local and headquarters staff, review the continuing requirement for approval of Call Forwards at four levels. It may be possible to streamline the process, especially in consideration that local approval of DAPs may soon be functioning in Bolivia. This at least would eliminate one step in the chain and give the local Mission and the NGOs more incentive to stay on top of the Call Forward status.

As noted elsewhere in the text, a number of CS warehouses were inspected briefly during the mid-term evaluation. In general, procedures, controls and warehouse administration seemed to be adequate. The Mission and the CSs are awaiting the RIG's written report to see what adjustment may be needed, but to the ET, current NGO procedures seemed pretty 'clean' and losses are quite

low considering all the handling that takes place

5.4 Program Sharing/ Collaboration Issues

Observations during the field visits revealed that very little collaboration or sharing exists among program components. Ideally, water and sanitation should enhance the MCH program, and education should be provided regarding proper use of water and latrines to insure optimum use. For this to happen, the water systems need to be functioning while the MCH program is in place. Next, little connection was observed between agriculture and nutrition. Planting vegetable gardens and the production of small animals including chickens could improve family nutrition, and would be a sustainable means of including micro-nutrients in the family diet. The MCH program could include education modules regarding the preparation and conservation of vegetables, while the agricultural component could teach families how to plant and care for a garden. Water is involved here too. Once a family has access to water, a family garden is possible.

Development projects can be linked to the schools in agriculture (school gardens) and W&S (potable water and latrines). The MCH program can provide educational materials and methods for teaching health to children and teachers, and health interventions can be done in the schools such as de-worming and testing for vision. Resources for improving the quality of services offered by schools can be obtained from municipal governments. A key role for the CS would be to assist school districts in the preparation and presentation of proposals to municipalities.

On-going health education classes conducted by teachers have excellent sustainability potential. Also, since the Title II school feeding program targets a large number of schools, the potential impact of just one health education class per week is tremendous. CS strategies directed toward educating the future generation are lasting investments in quality of life for poor families. Since CS field personnel visit the schools frequently, these visits could be maximized to implement specific complementary activities.

5.5 Communication Issues

During the field visits the ET observed a somewhat vertical management structure within several CSs. Some make decisions at the central level regarding budgets, staffing and logistics that have resulted in decreased efficiency of field operations. One example is the lack of logistical support and adequate staffing in the FHI Potosi MCH program. Regional coordinators need to be heard regarding the real needs of their programs, so that decision-makers can consider their requests. The gap between central management and regional programs could be lessened with more quality supervisory visits, as noted earlier.

Also, more frequent exposure of senior management to field staff will have a healthy effect on combating what is a tendency in some regional operations in Bolivia— the intermediate staff 'lock' on access to the boss. This is an issue which the ET caught hints of during the field observations in several of the NGOs.

5.6 Human Resources Management

Human resources are the most valuable asset in a development institution, but often one not optimally managed. Vertical structures inhibit communication flow from first line workers to the higher levels of the organization. Field people are responsible for attaining program results and have valuable knowledge how to improve both effectiveness and quality, and should have a voice.

Observations during the visits to PCI indicate that many health facilitators are over-burdened, need continued training and incentives, and are facing logistics difficulties that have not been responded to. In FHI some of the health staff are near burn-out and may leave the institution. This would be a dire loss to FHI, in light of the fact that, in the opinion of the ET, two or three of these professionals would be very difficult to replace, due to their dedication and excellent technical capacity. The situation in ADRA is somewhat different in that ADRA field personnel have good logistical support and did not appear to be over burdened. However, the ET observed wide disparity among field staff regarding commitment to program goals and technical expertise.

The ET did not look at personnel management policies, so the following is a general suggestion. It would be helpful for the CSs to develop job descriptions in discussion with field staff, to have clear performance benchmarks, to provide the necessary support so each level of worker can perform his/her job well, and to assess progress twice yearly. If a particular employee isn't working out, replace him/her, and if someone is doing excellent work, provide incentives to assure his/her permanence with the institution. The quality of an NGO's performance depends heavily on the quality of its front line workers. A suggestion for the CS regarding budget cuts would be to cut other costs but not quality field staff.

5.7 Monitoring and Indicators

All three CS agree that collecting data for the USAID indicators is time-consuming and labor intensive. In PCI especially, the health facilitators spend an inordinate amount of time gathering data and filling out information system forms. This was not as evident in the FHI and ADRA. In spite of the work dedicated to tracking indicators, the information does not appear to be used by the CS for reflection, analysis and program adjustments.

FHI is the only CS that routinely feeds information gathered in the MCH component back to the community. As explained in Chapter 3.1, FHI presents trimester data on a poster using color codes to denote coverage of different interventions. This is the best use of the information system the ET has seen in MCH programs in Bolivia. To make best use of the system, the information should also be presented to the local governing body or farmers union for discussion, conclusions and decision making. The CS role here is crucial in training leaders to analyze health data and take necessary actions based on the results. This is empowerment.

MCH health indicators are not yet being used in connection with MOH services. CSs can share the results of trimesterly programming at district, area, and communal CAI meetings and teach

MOH staff how to analyze and use data to improve the quality and coverage of services. Again, this could be a crucial role for the CS, if capacity building is to take place. The municipality can also benefit from activity reports from the CS and analyze the results and implications for regional development. As local partners become more adept at managing information and taking informed decisions, their capacity to meet the needs of their populations will increase.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 HEALTH

General Conclusions

A good MCH program centered on sustainable preventive care through education and behavioral change is the best contribution CS can make toward improving food security. As studies of MCH programs that use food donations show, food supplements *per se* do not play as important a role in improving nutritional status as do education and better provision of health services in decreasing severe malnutrition¹⁴. FHI and ADRA have implemented sound educational programs, but need to reinforce provision of continued services by the MOH. PCI is closely linked to MOH services, but does not have a well-implemented educational strategy. The provision of quality community education and development of effective services with MOH partners means an intervention of approximately three years in each community. FHI spends five years per community, ADRA two, and PCI only one.

A key aspect of nutrition security which includes the appropriate quantity and combination of inputs such as food, nutrition and health services, is "time" – women having time to dedicate to food preparation and child care¹⁵. The majority of women in rural Bolivian communities spend long hours to assure the survival of the family and are often too malnourished, ill or tired to take on the added burden of 'learning' new practices which only mean more duties in an already overburdened life. Food donations 'buy' women's time, because the value of the food replaces hours of work dedicated to food security activities. How the CS uses this time is crucial, if sustainable results that will improve health and nutrition in the medium term are to be obtained. Both FHI and ADRA are maximizing the time women spend in education and preventive health activities. However there is more need to develop strategies for empowerment, decision making, and leadership skills so communities can proceed on their own once the program ends. PCI needs to change its community intervention strategy in order to assure the best use of women's participation.

Recommendations

1. The ET recommends that each CS develop and implement an educational strategy for the MCH program which would include learning objectives, key messages, methodology, and materials. The strategy should be adaptable for different audiences including CHWs, mothers and fathers, school children, and adolescents. An integrated approach to health that treats the family as a unit and includes spiritual, intellectual and emotional aspects will do more to promote lasting changes than a narrow focus on diseases and prevention. FHI has prepared an excellent

¹⁴ CARE/Dominican Republic, 1993-1995 Impact Study. March 1996, p 19

¹⁵ PCI Draft Concept Paper regarding use of donated foods to improve health, 1999

integrated health educational strategy in modular form. Other CSs would do well to study the work done by FHI to determine its adaptability to their MCH programs. ADRA has developed some good material in early stimulation and home administration, and PCI is working on culturally appropriate medical protocols. A joint effort to develop, produce and validate a common educational strategy would be well worth the effort, and should be done soon, as the Title II program is already at the mid-term.

2. The ET recommends that each CS feed back the information being collected on project indicators to communities, municipalities and health service providers for analysis and decision making. At the community level, an option would be to adopt a visual format for presenting information to the community (such as the FHI poster), which could be prepared quarterly, preferably by the mothers and CHWs themselves, and presented to community leaders. Discussion and analysis by the community will help community members understand the health status of women and children. The purpose of this activity is to encourage the community to assume responsibility for the health of its children, and to continue collecting the information after the CS leaves.

3. The ET recommends that the CSs create an inter-agency technical health committee to improve the technical quality of the three MCH programs. Activities could include development of an educational strategy, work on an improved community information system, innovative approaches to incentives for volunteers, design of pilot projects between municipalities and communities, organization of technical conferences and seminars, and participation in international health events related to nutrition and food security.

4. The ET recommends that each CS develop better linkages between their four Title II components to create synergistic results which will enhance food security. There is an ideal relationship between agriculture (solar green houses, family gardens) and nutrition, between water/sanitation and health, and between formal education and reinforcement of health messages. Rural schoolteachers and school children could easily have a role in health promotion in the community, and the school could be used as a training site for community adult education (leaders, community volunteers, CAI meetings). Food rations could be used during these training events to motivate participation.

5. The ET recommends that the CSs work together to develop innovative approaches to sustaining the activities of CHWs in the communities. Significant resources are spent training and supervising CHWs, human resources who are not linked to any permanent structure and often desert. It is recommended that pilot projects be implemented in conjunction with municipal governments to provide financial and other incentives to CHWs, along with linkages to local health service providers. The results of these projects can be analyzed and a viable system developed to keep CHWs active and motivated.

6.1.1 PCI Conclusions and Recommendations

The increase in the number of provinces and population which PCI undertook beginning in

October 1997 has meant more communities per health facilitator and less time to provide the type of education which will lead to lasting behavior change for families and CHWs. This expansion, coupled with the rotation to new communities every year, does little to assure sustainable health interventions. There is no follow-up plan to nurture the community after the year's food donations have ended.

Regarding performance indicators, as mentioned in the Findings section, PCI proposed very ambitious targets in its original DAP, 35,000 children and 14,000 women. In order to reach those targets, it has adopted a methodology that takes it to different communities every year. Thus, the target for each fiscal year is actually the goal for a given number of communities, as these communities will not be part of the MCH program the following year. Given the expansion of PCI's Title II program, neither population targets nor percentages were met for most of the indicators in 1998. In fact, the targets may be too ambitious for a one-year intervention.

In a country where close to half of the children under three years of age in rural areas suffer from chronic malnutrition, a nutritional rehabilitation program is highly relevant. However, the strategy of food distribution for twelve months with little follow-up or sustainability is not an effective means of contributing to rehabilitation of malnourished children in the medium or long term. If food is viewed by PCI as mainly an incentive for participation, specific health behaviors expected of mothers after participating in the PCI program need to be determined. The educational program should prepare mothers to implement behavior changes, along with their husbands and families. A participatory educational program that has been adapted to the local language and culture can go a long way to promote change in health behavior, but education is labor intensive and long term. This implies several years per community with sufficient human resources to provide education and follow-up.

One year is too short a time to obtain behavior change in mothers and families, especially in light of the fact that PCI health facilitators spend much of their time weighing babies, giving vaccines, registering data and controlling cards, and updating registers of eligible children. In larger communities, it takes an entire day just to weigh and chart all the children. Instead, this activity should be taught to the mothers over a period of time, with the PCI promoter training and supervising the activity.

Recommendations

1 The ET recommends that PCI select the hundred-or-so most needy communities for the duration of Title II, hire additional staff, and assign facilitators to no more than 7-8 communities. Criteria for selection of communities should include those that receive little or no support from the MOH and are geographically isolated. In such communities, the presence of a trained CHW with a continuous supply of basic medicines could make the difference between life and death for small children.

2 In connection with other Cooperating Sponsors, the ET recommends that PCI expand its efforts in local-language information, education and communication (IEC) which could be

adapted to local conditions easily and used by health facilitators, CHWs, school teachers, and other development agents. PCI should also assist the community to build a local health center where educational activities can take place and materials presented.

3 The ET recommends that information gathered on MCH indicators be fed back to the community. Discussion and analysis of the information by the mothers and leaders will help them understand the health status of all children under five in the community and of women age 15-49. The purpose of this activity is to encourage the community to assume responsibility for its own health, and to have acquired the habit of collecting this information after PCI leaves.

4 The ET recommends that PCI include other activities to motivate women to participate aside from food, such as handicrafts, bread making, sewing, small animal production and family gardens. (PCI reports family gardens have been built in the municipalities of Arque, Tacopaya and Bolivar, but the ET did not see them.) The purpose would be to strengthen the group and, perhaps, generate income. In this way, there will be a better chance for sustaining the group of women after PCI leaves.

5 The ET recommends that PCI include auxiliary nurses in training events, especially if they are permanent employees of the area hospital. They can continue some project activities, such as supervision of CHWs, community education, and nutritional surveillance and counseling.

6.1.2 FHI Conclusions and Recommendations

FHI has a strong presence in the communities, due to the five-year commitment to each community. The interventions and food distribution strategy implemented by FHI are relevant to the needs of the population, although, as FHI has mentioned in its reports, both mothers and children in Potosí may require a larger ration due to the extreme level of poverty. FHI's community information system is excellent, as is the strategy to include all community members in health activities. Inclusion of the four Title II program components in each community is an effective way to improve food security and has good sustainability potential, if communities acquire skills in situation analysis and decision making, in addition to the recommended health behaviors.

The effectiveness of the MCH program may be jeopardized by the reduction in staff earlier in 1999, especially since education is a long term, labor-intensive activity. FHI field supervisors and facilitators are working long hours under difficult climatic and geographic conditions to fill the gap, especially in Potosí. Logistic support is not always available and some facilitators visit communities on foot. The ET observed both dedication and exhaustion in some of the field staff, that may result in a decrease in quality in the short term and burn out in the medium term.

Recommendations

1 The ET recommends that FHI develop a stronger relationship with MOH services and include permanent staff (auxiliary nurses) in training and supervision activities. FHI's

participation in CAI meetings can help build capacity in local health personnel to provide on-going support and supervision of CHWs and other community volunteers

2 The ET recommends that FHI continue to strengthen its relationship with municipal governments FHI can be a liaison between the area hospital and the mayor to lobby for increased support of sorely needed health resources These can include construction and equipment of health posts, allocation of funds to hire additional medical and nursing staff, incentives for CHWs, and logistical support Reports of health activities can be presented to the mayor on a regular basis to create awareness of the local health situation and generate a sense of responsibility to respond to expressed needs of communities and health services

3 The ET recommends that FHI increase its MCH field personnel and provide incentives to the hardworking facilitators A health facilitator can reasonably serve 7-8 communities, which should be the criteria for allocation of human resources

4 The ET recommends that FHI present the educational strategy and materials it has developed to USAID/B and the other CSs to determine their applicability to all MCH Title II programs In consultation with other agencies, FHI could find a way to produce the materials, possibly sharing costs and providing each agency with modules and user guides

6.1.3 ADRA Conclusions and Recommendations

ADRA has developed strong links between some municipal governments and communities and between MOH services and communities, specifically regarding incentives for CHWs ADRA has also developed educational modules which support behavior change in primary health care--early childhood development and home economics ADRA's strong emphasis on education is relevant to enhancing food security in the short term However strategies for sustaining mothers' groups where only recipients of food donations participate need to be developed Better integration in each community of agriculture, water, school education, and health would strengthen the MCH component

Recommendations

1 The ET recommends that ADRA consider hiring auxiliary nurses who know the language and culture, to provide education to mothers and basic preventive services Currently, ADRA field personnel demonstrate high technical expertise, as the health technicians are either physicians or registered nurses, however, this level of staff is over qualified for community work It is difficult to find a physician who is willing to "rough it" in dispersed rural communities Physicians or registered nurses could be used to supervise the auxiliaries who are better suited to extension work

2 The ET recommends that ADRA develop an MCH transfer plan so that once ADRA leaves, these activities can be performed by the MOH and/or CHWs ADRA physicians and nurses currently provide some services, and ADRA purchases some medical supplies for the MCH

centers. A possibility would be a second phase of training and empowerment for leaders, volunteers and women's groups during the second thirty-month period of the DAP, with specific sustainability objectives and outcomes.

3 The ET recommends that ADRA reinforce training for CHWs and other community volunteers. One example is to link the volunteers to the CAI, which the San Lucas health area is planning to implement, in order to create sustainable mechanisms for on-going supervision and support.

4 The ET recommends that ADRA consider co-financing a pilot project in one municipality (Culpina), where the mayor has offered to provide a \$B50 monthly incentive to CHWs. If the incentive is linked to level of training (to qualify for the incentive), presentation of reports, and compliance with MOH norms and procedures, the incentive program could be successful. Based on the results, ADRA should work to create a sustainable system for CHWs in other municipalities.

6.2 WATER AND SANITATION CONCLUSIONS AND RECOMMENDATIONS

PCI and ADRA are engaged on a steep learning curve of what is required to provide high-quality systems: more budget, more staff commitment to technical details, better supervision, longer presence in the community. FHI is delivering a high quality product and only needs to fine-tune some of its design specifications in order to achieve first-class construction in all its W&S systems. Recommendations are presented for each CS.

6.2.1 Water and Sanitation Recommendations For PCI

1 The ET recommends that PCI conduct a strategic planning exercise focused on what the organization can legitimately accomplish now and through the life of a potential follow-on DAP. Having established parameters of what the organization would hope to do in overall terms, the health staff and W&S staff could begin to prepare more *realistic, manageable* and *cost efficient* plans how to achieve those goals.

Part of this exercise will be a substantial reduction in the number of water and sanitation systems to be built. The ET recommends that the current DAP number of water systems is far too ambitious and should be reduced by at least 30%.

2 The ET recommends that the PCI W&S component establish long-term presence in communities where systems will be built. This means either that a cadre of W&S promoters should be hired, or that the health promoters' job responsibilities should be expanded to include water promotion (requiring a reduction in the number of communities these people work in). Conversely, contracts similar to those now expiring with "Desarrollo Comunitario," PROSABAR and CERES could be executed. Further W&S activities should not go forward until this long-

term community promotion aspect is addressed

3 As presently being considered in the Cochabamba region, PCI should assume full technical oversight for the completion of water systems. It is not effective to presume that municipalities will be able to fulfill this function, because of lack of resources and because of lack of commitment high-quality construction. More technical staff will have to be hired for PCI to assume this responsibility adequately.

4 PCI Cochabamba should revitalize a viable latrine construction program immediately. It is not acceptable that individual reluctance to assume this responsibility be allowed to interfere with the programming principle of water/hygiene synergism. FHI experience could help in this area.

5 The ET recommends that PCI budget adequate funds for each water system so that high-quality accessories and materials can be purchased in the captation structure and the tank (and throughout the water system), thereby fostering long-term sustainability. A target budget figure should be that commonly accepted in Bolivia for rural water construction— \$100/ capita. The purpose of the recommendation is to insure that no inappropriate technical decisions are taken 'on the cheap'. It will also give W&S staff the opportunity to complete the water systems with due professionalism. In PCI's case, this means that the project should finance posts and chain-mail fencing in the captation and the tank, pay for and deliver an adequate set of tools to the community, paint the tank, install adequate latrines, perhaps even build community showers, and pay for community operators' participation in a high-quality O&M course (see below).

Because of the significant cost associated with high-quality/ highly sustainable W&S construction, expected *counterpart contributions* from the municipality and the community should be reduced to the minimum expected in USAID community development projects throughout the world— 25%. To require more than that from the municipality/community is to overly prejudice the 'ownership' versus 'program coverage' balance.

6 In the first draft of this report, the ET recommended that from FY '00, PCI and ADRA stop using food-for-work in rural water system construction. The rationale was that FFW is an "incentive"-- and an addition expense-- which Bolivian experience clearly shows is not necessary (In the Eighties and early Nineties, CARE built over 1,200 rural water systems in Bolivia without an ounce of food. FHI uses no food in its water system construction and CARE will not use any food in water in its newly starting DAP.) FFW support is not necessary in rural water.

Vigorous debate came from the two CSs when the draft was discussed. The explanations of the two CSs using FFW in W&S are (1) that more community members can participate in the system construction, not having to leave the community in seasonal migration, (2) also that more participation fosters an enhanced sense of ownership, (3) finally that the food ration is a kind of caloric compensatory mechanism for the enormous physical work of hefting a hundred 50 lb bags of cement, sand and gravel up to four and five kilometers from the community, and nine hundred meters of climb also (attested to by the evaluators who made the climbs to inspect the captation structures-- minus bags on their back.) Said one contributor, "it is not whether FFW is *necessary*,

but rather whether it is *useful*, and an *appropriate* use of resources ”¹⁶

The ET recommends that PCI not promote a blanket use of food-for-work rations in water system construction, but use it only when there is a clear and present need in order to keep the community intact through the heavy manual labor part of the water system construction. In that regard, the ET recommends that only one month's ration be distributed to any community for FFW water, and that the explicit purpose be to support only the heaviest of manual labor—the task of carrying cement, sand and gravel to far distant captation and tank sites.

7 It goes almost without saying that PCI water and sanitation systems should adhere to Bolivian norms established in the “Manual de Diseño para Sistemas de Abastecimiento de Agua Potable en Poblaciones Menores a 5000 Habitantes.” USAID/B should be approached to finance a workshop for all three NGOs to train (or re-train) NGO W&S staff in these norms.

8 The ET recommends that PCI sub-contract PROSABAR to conduct PCI water system operator training. PROSABAR is reported to have a five day course that is likely better than the quality of any course work that PCI would be able to put together in a short period of time. PCI should finance the operators' attendance at this course.

6.2.2 Water and Sanitation Recommendations for FHI

1 The ET recommends that FHI make the minor changes highlighted in the text to bring its systems into full compliance with Bolivian norms established in the “Manual de Diseño.” This includes steel *pasamuros*, PVC instead of *politubo* in the main line, installing sanitary seals in the captation and tank structures, and eliminating corrode-able steel steps. These are all minor adjustments.

2 The ET recommends that FHI establish a higher minimum threshold of households to be eligible for individual household taps. As reported to the ET, the current FHI threshold is seven. This is ridiculously low given the investment required to build an FHI system. The ET recommends as a minimum a figure used by CARE in the Eighties—and unbeknown to ADRA, also being applied by ADRA— **thirty** houses. In communities where this is not possible, the ET recommends that FHI apply its expertise to the thorny issues of building effective public taps systems.

The ET recognizes that following this recommendation may take FHI outside its area of concentration in selected cantons of Potosí. The ET recommends that FHI assume this posture

¹⁶The ET recognizes the validity of these arguments—reluctantly. The ET's biggest fear is that with FFW rations being used in W&S there may be an tacit assumption that the community needs to be cajoled into doing a water system—when experience demonstrates that is not the case—also that the 'ownership' of the system by the community will be lessened if the community sees itself as having been 'paid laborers' during the W&S effort. The literature is replete with examples of food-for-work activities in Africa where the community refused to undertake any further community development activities when the food-for-work resource stopped. Debilitating Bolivia's long tradition of self help and community work (*minga*) would be a terrible program legacy indeed.

given that so many more people will benefit from FHI's program in this fashion

3 The ET recommends that FHI consider reducing the number of water engineering staff on its payroll and dedicate some of those resources to beefing up the health component (Perhaps one of such staff member could be seconded to one of the other colleague NGOs that are struggling in W&S)

4 The ET recommends that FHI continue to devote managerial and field staff attention to full community latrine *use*

5 The ET recommends that FHI sub-contract PROSABAR to conduct FHI water system operator training The PROSABAR five-day course is likely better than the quality of any course work that FHI would be able to put together FHI should finance the operators' attendance at this course

6.2.3 Water and Sanitation Recommendations For ADRA

1 The ET recommends that ADRA conduct a strategic planning exercise focused on what the organization can legitimately hope to accomplish in W&S now and through the life of a potential follow-on DAP Given ADRA's heavy involvement in hundreds of food-for-work roads that require a high level of technical supervision, and ADRA's lack of engineers trained in W&S, there is at least a possibility that ADRA may decide that the learning curve in W&S is beyond its organizational capacity This would be a lamentable, but understandable decision If ADRA decides to continue in water and sanitation, it must do so under the premise that high-quality systems will be built Assuming that the decision is taken to continue in water, the following recommendations apply

2 The ET recommends that ADRA strengthen its long-term presence in communities where systems will be built There was some mention of this health/water synergism during visits to ADRA sites, but the quality of the interface was difficult to judge This suggests that either a cadre of W&S promoters should be hired, or that the health promoters' job should more clearly include water promotion than at the present (requiring a reduction in the number of communities these people work in) A third alternative would be that contracts be executed with "Desarrollo Comunitario," or PROSABAR to provide this service

3 ADRA should assume full technical oversight for the completion of water systems It is not effective to assume that municipalities will be able to fulfill this function, because of lack of resources and because of lack of commitment high quality construction More technical staff will have to be hired for ADRA to be able to assume this responsibility adequately

4 ADRA Camargo should re-invigorate its latrine construction program immediately and more meaningful annual targets should be proposed Serious study of the successes and failures of CARE latrines in the Camargo/Culpina area would go a long way toward this end

5 The ET recommends that ADRA budget adequate funds for W&S so that high-quality accessories and materials can be purchased in the captation structure and the tank (and throughout the water system), thereby fostering long-term sustainability. A target budget figure should be that commonly accepted in Bolivia for rural water construction— \$100/ capita. The purpose of the recommendation is to insure that no inappropriate technical decisions are taken 'on the cheap'. It will also give W&S staff the opportunity to complete the water systems with due professionalism and propriety. In ADRA's case, this means at least the following: (1) The project should assume the financial responsibility to deliver a completed water system-- including household connection to each community member.¹⁷ (2) The project should pay for adequate posts and chain-mail fencing. (3) It should pay for an adequate set of tools to be given to the community. (4) The project should paint the tank. (5) It should promote improved technology latrines, perhaps even pour-flush ones in the FHI model. (6) It should pay for community operators' participation in a high-quality O&M course (see below.)

Because of the significant cost associated with high-quality/ highly sustainable W&S construction, expected *counterpart contributions* from the municipality and the community should be reduced to the minimum expected in USAID community development projects throughout the world— 25%. To require more than that from the municipality/community is to overly prejudice the 'ownership' versus 'program coverage' balance.

6 In the first draft of this report, the ET recommended that from FY '00, ADRA and PCI stop using food-for-work in rural water system construction. The rationale was that FFW is an "incentive"-- and an addition expense-- which Bolivian experience clearly shows is not necessary. (In the Eighties and early Nineties, CARE built over 1,200 rural water systems in Bolivia without an ounce of food. FHI uses no food in its water system construction and CARE will not use any food in water in its newly starting DAP.) FFW support is not necessary in rural water.

Vigorous debate came from the two CSs when the draft was discussed. The explanations of the two CSs using FFW in W&S are that (1) more community members can participate in the system construction, not having to leave the community in seasonal migration, (2) also that more participation fosters an enhanced sense of ownership, (3) finally, that food is a kind of caloric compensatory mechanism for the enormous physical work of hefting a hundred 50 lb bags of cement, sand and gravel up to four and five kilometers from the community, and nine hundred meters of climb also (attested to by the evaluators who had to make the climbs to inspect the captation structures-- minus bags on their back.) Said one contributor, "it is not whether FFW is *necessary*, but rather whether it is *useful*, and an appropriate use of resources."¹⁸

¹⁷ Senior ADRA management makes the valid argument that the evaluator's focus clearly favors family connections over public taps. The arguments are complex, and knowledgeable experts come down on both sides of the debate. The evaluator submits that experience with public taps in Bolivia has proven all-but universally disastrous in terms of sustainability and that development literature is unanimous that household connections bring more public health impact than almost any other development intervention. See also the Honduras data referenced on page 16. For reasons of improved health impact and for improved sustainability the evaluator continues to insist that where resources are available to finance household connections, private connections are the better development alternative by far.

¹⁸The ET recognizes the validity of these arguments reluctantly. The ET's biggest fear is that with FFW

The ET recommends that ADRA not promote a blanket use of food-for-work rations in water system construction or latrines, but use it only when there is a clear and present need in order to keep the community intact through the heavy manual labor part of the water system construction

In that regard, the ET recommends that only one month's ration be distributed to any community for FFW water, and that the explicit purpose be to support only the heaviest of manual labor the task of carrying cement, sand and gravel to far distant captation and tank sites

7 It goes almost without saying that ADRA water and sanitation systems should adhere to Bolivian norms established in the "Manual de Diseño para Sistemas de Abastecimiento de Agua Potable en Poblaciones Menores a 5000 Habitantes " Particular attention should be paid to steel *pasamuros*, since ADRA engineers in Camargo and Culpina exhibited some resistance to this idea ¹⁹ USAID/B should be approached to finance a workshop for all three NGOs to train (or re-train) NGO W&S staff in these norms

8 The ET recommends that ADRA sub-contract PROSABAR to conduct its water operator training ADRA financed a two-day PROSABAR workshop for one or two communities last year, but that entity has a five-day course that is likely the best quality workshop of its kind in the country ADRA should finance operators' attendance at this course for all its W&S communities

6.3 AGRICULTURAL CONCLUSIONS AND RECOMMENDATIONS

6.3.1 PCI Conclusions and Recommendations in Agriculture

As noted in Section 3.3.5.1, the greatest weakness in the PCI program is its marketing element It was evident from the discussions in each community where the question of marketing was raised that the community was already selling 40% of its production, the largest single category, as consumption was reported at 30% and seeds also at 30% This argues strongly for a marketing program because it says that food insecurity is a poverty question (If availability were the issue, a quick solution would be to consume more and sell less) A second conclusion was what communities need most in a marketing program were access to markets (roads) and information

The logical question to ask is what does a person trained in production agronomy have to offer in terms of marketing expertise to a community whose members have been selling agricultural

rations being used in W&S, there may be an tacit assumption that the community needs to be cajoled into doing a water system - when experience demonstrates that is not the case, also that the 'ownership' of the system by the community will be lessened if the community sees itself as having been 'paid laborers' during the W&S effort The literature is replete with examples of food-for work activities in Africa where the community refused to undertake any further community development activities when the food resource stopped Debilitating Bolivia's long tradition of self help and community work (*minga*) would be a terrible program legacy indeed

¹⁹ "Es necesario que todas la tuberías en contacto con el medio ambiente y embebidas en hormigón, sean de fierro galvanizado y se encuentren en cámaras de mampostería con su propio drenaje " Manual de Diseño p 72

produce all of their lives? The short answer is "little " Agricultural production and agricultural marketing are distinct, specialized fields of knowledge, and must be recognized as such PCI should not rely on technicians with production experience to lead its marketing effort

PCI's approach seems to emphasize organizations as the solution to marketing Never once, however, in the ET's conversations with community participants did the participants mention 'organization' as important

At one point in the evaluation, there was some interest in discussing cost/benefit criteria for road construction However, field observation indicates that road selection is an integral part of the 'package' that leads to improved income from agriculture and would be difficult to 'tease out' on its own For this reason, it does not seem to the ET that roads can be analyzed for their cost/benefit in isolation from other agricultural production activities Rather, roads form an integral part of the entire participation program in each community For reasons that made selection of the most food insecure communities the target of the Title II program, cost/benefit analysis does not seem warranted at a level deeper than that of a test for "reasonableness"

Recommendations

1 The ET recommends that PCI hire permanent staff with formal training and experience in marketing to review needs derived from talking to the communities This individual should then work with the production technicians to design a more comprehensive approach A major portion of an effective marketing element is already present in the form of access roads The missing factor is the information piece

The ET recommends that PCI provide this technical assistance in marketing in each of its regional office An important factor in major increases in agricultural productivity is the presence of personnel trained in marketing, a successful marketing program cannot be achieved by other means

The ET recommends that PCI staff should avoid becoming marketing agents, or establishing a parallel marketing system to that which already exists in the community Rather, they should act as facilitators, better integrating the community into the marketing system

2 Most participants mentioned that they get their information from one of several radio stations, or from community members sent for that purpose The ET recommends that PCI strengthen a market information system, beginning with visits the radio stations to verify the reliability of the market information collected, e g , from whom, how often, etc Further questions should look at differences between what is being provided and what is needed by the communities An attractive package could be put together that could benefit the producers as well as the stations since they could sell advertising time based upon the knowledge that a particular target audience would be listening Once the system was operational, it could become a no-cost option that would be sustainable over time

3 The ET recommends that PCI improve its efficiency and impact in its road construction. Standard procedure is to construct the road platform first, and return later to deal with drainage and other erosion control techniques. It is clear from the visits to the roads that this is not working as planned. Once the roadbed was established, the rest of the activity seemed to be either forgotten, or implemented in a less than satisfactory manner. For example, when ditches were established or cleaned, the material was often piled along side the ditch in such a way as to prevent water from running off the road and into the ditch. This gave the impression that the idea of a drainage ditch was to channel water parallel to the road rather than remove water from the road in the shortest distance possible.

Food-for-Work road construction should imitate the process used to build or maintain the main roads, i.e., first construct *obras arquitectonicas* (drains, culverts, etc.), and then go back to deal with the road platform. A fall-back position would be to proceed in parallel with these two components of road building in exceptional circumstances, but roadbed improvements should never be done in advance of drainage and other erosion control measures.

The ET recommends that PCI make a concerted effort to reduce soil erosion. During the trip, there was much talk about reforestation along roads to control erosion, but no evidence of this was seen. Also absent was any discussion of the use of bushes to control erosion. Bushes grow faster than trees and have excellent root systems for stabilizing soils on steep slopes such as are found on readouts.

There is also an improvement necessary in the construction of irrigation ditches. Almost all irrigation canals have an up slope side and a downslope side. Yet, every canal visited had the same height on each side. Since it is logical to assume that the water from the up slope side of the canal will eventually need to get down the slope, a suggestion to deal with this would be to make the upside wall of the canal higher. This would allow the area between the cement wall and the up-slope bank to serve as a means for keeping water, silt, sand, and stones out of the irrigation canal. At each point where a natural drainage system is encountered, a natural gully for instance, a simple "overpass" could be constructed to permit the runoff to proceed over the irrigation channel and on its normal course downhill. This adjustment would not seem any more costly than the diversion channels currently contemplated. The ET strongly recommends that PCI explore this possibility.

4 The ET recommends that PCI begin a process of defining with the community what changes are necessary before PCI should leave that community and design a plan which includes stages to reach this desired end. The stages should be output-oriented, and not necessarily driven by the calendar. By using this method, both PCI and the community will know exactly when it is time for PCI to leave from the outset. It also emphasizes the fact that PCI's time is limited, and the community must take responsibility for anything PCI has worked with the community to achieve. The FHI experience provides a useful model in this area.

5 The ET recommends that PCI should review the adequacy of its technical staff in reference to program size. PCI assumed a tremendous additional workload when it took over

several of the CARITAS areas. The expansion was rapid and dramatic. It is now time for some internal self-analysis to ascertain whether or not the human resources are adequate. This is true in every component and also in agriculture, where PCI is about to enter more deeply in a marketing element, and in access roads, a major component of marketing, where PCI has many on-going and planned activities.

6.3.2 FHI Conclusions and Recommendations in Agriculture

The greatest weakness in the FHI program is its marketing element. It was evident from the discussions in each community where the question of marketing was raised that the community was already selling 40% of its production. This was the largest single category, as consumption was reported at 30% and seeds also at 30%. This argues very strongly for a marketing program because it says that food insecurity is a poverty question. (If availability were the issue, then a quick solution would be to consume more and sell less.) A second conclusion was that communities needed most in a marketing program were access to markets (roads) and information.

FHI's approach seems to emphasize organizations as the solution to marketing. But never once in conversations with community participants did they mention this as being important. Also, from discussions and reading the materials in the DAP and PAAs, a strong impression is given that FHI may be a bit too far involved in assuming the role of a marketing agent instead of being a marketing facilitator. FHI should be constantly vigilant regarding its proper role as facilitator.

At one point in the evaluation, there was some interest in discussing cost/benefit criteria for road construction. However, field observation indicates that road selection is an integral part of the 'package' that leads to improved income from agriculture and would be difficult to 'tease out' on its own. For this reason, it does not seem to the ET that roads can be analyzed for their cost/benefit in isolation from other agricultural production activities. Rather, roads form an integral part of the entire participation program in each community. For reasons that made selection of the most food insecure communities the target of the Title II program, cost/benefit analysis does not seem warranted at a level deeper than that of a test for "reasonableness".

Recommendations

1. The ET recommends that FHI hire permanent staff with formal training and experience in marketing to review the input on needs derived from talking to the communities. This individual could then work with the FHI economist, ag. economist and production technicians to design a more comprehensive approach. A major portion of an effective marketing element is already present in the form of access roads. The missing factor is the information piece.

The ET recommends that FHI provide this technical assistance in marketing in each of its regional offices. An important factor in major increases in agricultural productivity is the presence of personnel trained in marketing, a successful marketing program cannot be achieved by other means.

The ET recommends that FHI staff should avoid becoming marketing agents, or establishing a parallel marketing system to that which already exists in the community. Rather, they should act as facilitators, better integrating the community into the marketing system.

2 Most participants interviewed mentioned that they got their information from one of several radio stations, and from community members sent for that purpose. The ET recommends that FHI strengthen a market information system, beginning with visits to the radio stations to verify the reliability of the market information collected, e.g., from whom, how often, etc. Then they should look at any differences between what is being provided and what is needed by the communities. An attractive package could be put together which could benefit the producers, as well as the stations since they could sell advertising time based upon the knowledge that a particular target audience would be listening. Once the system was operational, it could become a no-cost option that would be sustainable over time.

3 Regarding management of the rotating agricultural funds, the ET recommends that FHI should review its timetable associated with each phase of its program for managing the fund in light of the belief expressed in several communities that they are fully to manage the fund from this date.

4 In FFW road construction, until now, FHI's activity has been only through ancillary funding, Title III or other donor resources, for reasons that appear to be more an administrative oversight than anything else, FHI did not include a description of Title II FFW roads in its original DAP. The ET recommends that FHI, like the other CSs, begin including FFW road construction as part of its program activities in the FY 2000 DAP.

5 The ET recommends that FHI improve its efficiency and impact in its road construction. Standard procedure is to construct the road platform first, and then return later to deal with drainage and other erosion control techniques. It is clear from the visits to the roads that this is not working as planned. Once the roadbed was established, the rest of the activity seemed to be either forgotten, or implemented in a less than satisfactory manner. For example, when ditches were established or cleaned, the material was often piled along side the ditch in such a way as to prevent water from running off the road and into the ditch. It gave the impression that the idea of a drainage ditch was to channel water parallel to the road rather than remove water from the road in the shortest distance possible.

FFW road construction should imitate the process used to build or maintain the main roads, i.e., first construct the *obras arquitectonicas* (culverts, drains, etc.) and then go back to deal with the road platform. A fall-back position would be to proceed in parallel with these two components of road building in exceptional circumstances, but never do roadbed improvements in advance of drainage and other erosion control measures.

The ET recommends that FHI make a concerted effort to reduce soil erosion. During the trip, there was much talk about reforestation along roads to control erosion, but no evidence of this.

was seen. Also absent was any discussion of the use of bushes to control erosion. Bushes grow faster than trees and have excellent root systems for stabilizing soils on steep slopes such as are found on readouts.

There is also an improvement necessary in the construction of irrigation ditches. Almost all irrigation canals have an up slope side and a downslope side. Yet, every canal visited had the same height on each side. Since it is logical to assume that the water from the up slope side of the canal will eventually need to get down the slope, a suggestion to deal with this would be to make the upside wall of the canal higher. This would allow the area between that cement wall and the up-slope bank to serve as a means for keeping water, silt, sand, and stones, out of the irrigation canal. At each point where a natural drainage system is encountered, a natural gully for instance, a simple "overpass" could be constructed to permit the runoff to proceed over the irrigation channel and on its normal course downhill. This adjustment would not seem any more costly than the diversion channels currently contemplated. The ET strongly recommends that FHI explore this possibility.

6 The ET recommends that FHI should look for opportunities for multi-institutional collaboration. FHI should set a goal of having at least one activity in La Paz and one in Potosi before the end of the DAP which would require multi-agency/donor participation beyond GOB institutions such as FDC and the PL 480 Executive Secretariat.

6.3.3 ADRA Conclusions and Recommendations in Agriculture

The greatest weakness in the ADRA program is its marketing element. It was evident from the discussions in each community where the question of marketing was raised that the community was already selling 40% of its production. This was the largest single category, as consumption was reported at 30% and seeds also at 30%. This argues very strongly for a marketing program because it says that food insecurity is a poverty question. (If availability were the issue, then a quick solution would be to consume more and sell less.) A second conclusion was that communities needed most in a marketing program were access to markets (roads) and information.

The logical question to ask is what does a person trained in production agronomy have to offer in terms of marketing expertise to a community whose members have been selling agricultural produce all of their lives? The short answer is "little." Agricultural production and agricultural marketing are distinct, specialized fields of knowledge, and must be recognized as such. ADRA should not rely on technicians with production experience to lead its marketing effort.

ADRA's approach seems to emphasize organizations as the solution to marketing. But never once in our conversations with community participants did they mention this as being important.

At one point in the evaluation, there was some interest in discussing cost/benefit criteria for road construction. However, field observation indicates that the road selection is an integral part of the 'package' that leads to improved income from agriculture and would be difficult to 'tease out' on

its own. For this reason, it does not seem to the ET that roads can be analyzed for their cost/benefit in isolation from other agricultural production activities. Rather, roads form an integral part of the entire participation program in each community. For reasons that made selection of the most food insecure communities the target of the Title II program, cost/benefit analysis does not seem warranted at a level deeper than that of a test for "reasonableness"

Recommendations

1 The ET recommends that ADRA hire permanent staff with local formal training and experience in marketing to review the input on needs derived from talking to the communities. This individual would then work with the ADRA production technicians to design a more comprehensive approach. A major portion of an effective marketing element is already present in the form of access roads. The missing factor is the information piece.

The ET recommends that ADRA provide this technical assistance in marketing in each of its regional offices. An important factor in major increases in agricultural productivity is the presence of personnel trained in marketing; a successful marketing program cannot be achieved by other means.

The ET recommends that ADRA staff should avoid becoming marketing agents, or establishing a parallel marketing system to that which already exists in the community. Rather, they should act as facilitators, better integrating the community into the marketing system.

2 Most participants interviewed mentioned that they got their information from one of several radio stations, and from community members sent for that purpose. The ET recommends that ADRA strengthen a market information system, beginning with visits to the radio stations to verify the reliability of the market information collected, e.g., from whom, how often, etc. Then they should look at any differences between what is being provided and what is needed by the communities. An attractive package could be put together which could benefit the producers, as well as the stations since they could sell advertising time based upon the knowledge that a particular target audience would be listening. Once the system was operational, it should be a no-cost option that would be sustainable over time.

3 Overall, the agricultural rotating fund promoted by ADRA has had a significant impact on improving agricultural productivity, especially to the extent that it has allowed access to improved potato seed -- a primary crop in each community visited. However, the ET recommends that ADRA adopt a clearer and more defined process for managing, and for ultimately turning over management responsibility of the Rotating Fund to the community. The five-stage approach used by FHI could serve as a basis, and be adapted to the particular needs of each community.

4 The ET recommends that ADRA improve its efficiency and impact in its road construction. Standard procedure is to construct the road platform first, and return later to deal with drainage and other erosion control techniques. It is clear from the visits to the roads that this is not working as planned. Once the roadbed was established, the rest of the activity seemed to be

either forgotten, or implemented in a less than satisfactory manner. For example, when ditches were established or cleaned, the material was often piled along side the ditch in such a way as to prevent water from running off the road and into the ditch. This gave the impression that the idea of a drainage ditch was to channel water parallel to the road rather than remove water from the road in the shortest distance possible.

FFW road construction should imitate the process used to build or maintain the main roads, i.e., first construct *obras arquitectonicas* (culverts, drains, etc.), and then go back to deal with the road platform. A fall-back position would be to proceed in parallel with these two components of road building in exceptional circumstances, but never do roadbed improvements in advance of drainage and other erosion control measures.

The ET recommends that ADRA make a concerted effort to reduce soil erosion. During the trip, there was much talk about reforestation along roads to control erosion, but no evidence of this was seen. Also absent was any discussion of the use of bushes to control erosion. Bushes grow faster than trees and have excellent root systems for stabilizing soils on steep slopes such as are found on readouts.

There is also an improvement necessary in the construction of irrigation ditches. Almost all irrigation canals have an up slope side and a downslope side. Yet, every canal visited had the same height on each side. Since it is logical to assume that the water from the up slope side of the canal will eventually need to get down the slope, a suggestion to deal with this would be to make the upside wall of the canal higher. This would allow the area between that cement wall and the up-slope bank to serve as a means for keeping water, silt, sand, and stones, out of the irrigation canal. At each point where a natural drainage system is encountered, a natural gully for instance, a simple "overpass" could be constructed to permit the runoff to proceed over the irrigation channel and on its normal course downhill. This adjustment would not seem any more costly than the diversion channels currently contemplated. The ET strongly recommends that ADRA explore this possibility.

5 The ET recommends that ADRA improve its effectiveness by defining, with the community, what changes are necessary before ADRA should leave that community and then develop an implementation plan which includes stages to reach this desired end. The stages should be output oriented, and not necessary driven by the calendar. By using this method both ADRA and the community will know exactly when it is time for ADRA to leave from the outset. It also emphasizes the fact that ADRA's time is limited, and the community must take responsibility for anything ADRA has worked with the community to achieve. The FHI model could serve in this regard.

6 The ET recommends that ADRA should also consider outsourcing wherever possible to make maximum use of its permanent staff. Short-term or periodic needs, such as design of infrastructure, or feasibility studies often lend themselves well to this type of management.

7 Finally, the ET recommends that ADRA should work out in much clearer detail with the

participants the responsibilities for operation or maintenance of infrastructure projects Experience has shown that when the organizational details have been resolved, the infrastructure has a much longer effective life

6 4 FOOD-FOR-EDUCATION CONCLUSIONS AND RECOMMENDATIONS

These recommendations are applicable to each NGO

1 Process Recommendations

The ET recommends that planning should take place between the NGO and the District education and municipal authorities in the closing months of the CY 1999 school year so that the FFE can start up in the first month of CY '00

The ET also recommends that current FFE field staff responsibilities be studied to see whether the number of supervisory visits per year could be reduced, at least in well-running small school At the same time, these staff should be given training in how to conduct non-intrusive eye tests on all school children Ear examinations does not seem so feasible and should be dropped as a program target De-worming targets should continue

The ET recommends that each NGO should begin implementing FFE in all schools in its work area This recommendation is made because children in the smallest and most isolated schools are the last ones who will benefit from the Educational Reform project, they are likely the most hungriest and neediest of a hungry and needy target population

Each NGO should include in its budget sufficient funds in FY '00 to co-finance with the counterpart municipality, gas stoves for every school that currently does not have one

The ET recommends that the NGOs should meet with USAID staff to resolve statistical inconsistencies in MOE record keeping and clarify the 'real' number of school children beneficiaries

The ET recommends that NGOs should meet together at an early date and standardize the amount of counterpart contribution to be requested from municipalities in CY '00, probably Bs 2 00 or 3 00 per student

2 Ration Composition and Timing

To have more 'impact', the ET recommends that the ration should be expanded to include lentils two days a week for all three NGOs With the fall in the cost of U S commodities, it is not thought that implementing this recommendation would exceed the Congressional Ceiling Also, cocoa should be dropped from the current ration for its lack of nutritional content

The ET recommends that in order to use the lentils appropriately, the timing of the feeding session should be made more flexible, and allow a later distribution, as is already taking place successfully in some ADRA schools

3 | Complementary Programming

The ET recommends that each NGO should plan and carry out complementary community development activities at the school in conjunction with development activities taking place in the village. This could involve building a school latrine if latrines are being promoted in the village, building a school water tap if a water system is being implemented, establishing a school greenhouse if greenhouses are being promoted, doing a food-for-work paving of the school compound if heavy dust is contaminating the children's snack if FFW activities are underway

4 Impact Recommendations

The ET recommends that each NGOs should begin a serious study by engaging the parents' oversight committee and school officials of what is happening to girls' enrollment in selected program schools, and develop site specific strategies to increase female enrollment

The ET recommends that each NGO should undertake a pilot study of the economic and nutritional benefit of the ration in a small number of schools and on a small number of children. Current NGO staff should undertake these studies with an eye toward preparing a case-study for publication in local public health journals

On a pilot basis in selected municipalities where the mayor is interested, the ET recommends that each NGO should begin a program directed to improving the *effectiveness* of the school to deliver improved education. In one area, this might involve hiring a certified teacher to serve as advisor to current MOE staff in new pedagogical techniques. In another area, it might mean liaising with the on-going World Bank-financed educational reform project. In a third area, it might mean project funds be used to pay for 'curriculum refresher training days' at the local school on a Saturday, or a zonal retreat co-hosted by the District Education officer. In another area, it might involve working more vigorously with parents' committees, conducting a retreat to find out what obstacles are keeping some girls away from school. The goal of these activities would be to begin thinking about broader issues of improved education to be included in more significant scope in a prospective FY 2003-2007 DAP

Finally, in preparation for the 2003-2007 DAP, each NGO should begin thinking about and evaluating which schools are truly the most needy. Though the following comment is based on anecdotal impressions only, it did appear to the ET that some school children are benefiting significantly from the FFE ration, but that others, those in large, usually peri-urban schools, are not as needy as their rural counterparts. If cutbacks in Title II Food For Education were mandated in FY 2003, CSs should have thought about the implications of such a cut beforehand

7.0 CONCLUDING COMMENTS

The Bolivia Title II program is in the process of achieving many of its goals. The monitoring and evaluation system introduced at USAID's behest, though onerous, is demonstrating that the NGOs are accomplishing the goals set forth in their DAPs.

From field trip observations, it is clear that the discipline of concentrating resources in the areas of greatest poverty in Bolivia has brought with it a significant qualitative jump in programming impact. Indeed, as noted in one section of the document, the ET recommends that the process of geographical concentration continue, and that more concentration take place in the remaining two years of the current DAP cycle in some program sectors.

It is also clear that the synergism originally conceived in the DAPs between health, water, agriculture and education is an important and valid concept, and that, indeed, in terms of impact on the lives of the poorest Bolivians, the 'whole will be greater than the sum of the parts.'

One of the indirect outcomes of this mid-term evaluation has been an opportunity of sharing among NGOs rarely if ever achieved in Bolivia. The chance for professionals of similar discipline to travel together for ten days or more, to talk to one another on the long jeep rides, to see one another's programs, and to see one's own program from another perspective, have proven a breath of fresh air to what has been a somewhat competitive and secretive relationship, one NGO to the other. At one point, it took some insistence on the part of USAID to get the NGOs to go along with this heavy investment of program staff time. No one who participated in the travel thinks that this gentle 'arm-twisting' was not justified by the results.

It is important that such sharing not be a 'one-off' event. In that regard, the ET warmly endorses the MCH program retreat that is to be held at the initiative of USAID/B on July 5, 1999. It also bears repeating the recommendation that the NGOs form a technical support committee in MCH to continue the dialogue that has started so well.

A second ET recommendation relates to USAID/B's financing a seminar/retreat to retrain NGO W&S staff in Bolivian norms for rural water construction. Part of such events should be travel to the field to see what is actually happening on the ground, as the ET did during this evaluation.

In agriculture, a similar event could be held regarding road construction that all three NGOs are carrying out in some scale. Perhaps the theme of such a conference would be to re-visit the subject of environmental mitigation, as a follow-up to the course held in Cochabamba last summer on Environmental Impact Assessments.

Finally, it bears mention that the ET was impressed with the insight of the USAID senior leadership— with its awareness of the errors of micro-management of the past and its ability to focus on key management topics while not interfering with the day-to-day management of the Title II CSs. This relationship of healthy give-and-take between *partners*— the donor partner and the implementing partner— has not been widely seen in Latin America and is clearly a step forward in the direction of drawing on the competitive advantage of each party.